

DEVELOPMENT OF MEASUREMENT SCALES OF
CONSUMER-BASED BRAND EQUITY FOR SMALL AND
MEDIUM ENTERPRISES



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การพัฒนามาตรวัดคุณค่าตราสินค้าของผู้บริโภคสำหรับวิสาหกิจขนาดกลางและขนาดย่อม



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นิชชา โชคพิทักษ์กุล : การพัฒนามาตรวัดคุณค่าตราสินค้าของผู้บริโภคสำหรับวิสาหกิจขนาดกลางและขนาดย่อม. (DEVELOPMENT OF MEASUREMENT SCALES OF CONSUMER-BASED BRAND EQUITY FOR SMALL AND MEDIUM ENTERPRISES) อ.ที่ปรึกษาหลัก : รศ. ดร.สราวุธ อนันตชาติ

การศึกษานี้ประกอบด้วยการวัดคุณสมบัติการวิจัยสองประการ ได้แก่ (1) เพื่อพัฒนาและตรวจสอบความตรงของโมเดลการวัดคุณค่าตราสินค้าของผู้บริโภคสำหรับวิสาหกิจขนาดกลางและขนาดย่อม (เอสเอ็มอี) ที่มีความเป็นไปได้ทั่วไป และ (2) เพื่อศึกษาความสัมพันธ์ระหว่างคุณค่าตราสินค้าเอสเอ็มอีกับการตอบสนองของผู้บริโภค ด้วยวิธีวิจัยสามขั้นตอน ขั้นแรกคือการวิจัยเชิงคุณภาพเพื่อวิเคราะห์เอกสารของ 40 คราสินค้าเอสเอ็มอีที่ได้รับรางวัล รวมถึงสัมภาษณ์แบบกึ่งมีโครงสร้างและสนทนากลุ่มกับผู้บริโภคที่มีลักษณะทางประชากรหลากหลาย 40 คน จนได้ข้อคำถามเบื้องต้นจำนวน 41 ข้อ การวิจัยขั้นที่สอง ได้นำข้อคำถามขั้นแรกมาเก็บข้อมูลเชิงสำรวจกับผู้บริโภค 838 คน และวิเคราะห์องค์ประกอบเชิงสำรวจและเชิงยืนยัน ผลการวิจัยพบว่า โมเดลการวัดคุณค่าตราสินค้าเอสเอ็มอีสอดคล้องกับข้อมูลเชิงประจักษ์ (ไค-สแควร์ [37, $N=419$] = 40.220, $p = .330$; CFI = .999, RMSEA = .014) ทั้งนี้ ผลการศึกษาโมเดลแข่งขันสามรูปแบบ พบว่า โมเดลองค์ประกอบเชิงยืนยันสองอันดับ (โมเดล 1) สอดคล้องกับข้อมูลเชิงประจักษ์เพียงโมเดลเดียว (ไค-สแควร์ [37, $N=419$] = 40.220, $p = .330$; CFI = .999, RMSEA = .014) โมเดลองค์ประกอบเชิงสาเหตุ (โมเดล 2) (ไค-สแควร์ [85, $N=419$] = 574.045, $p = .000$; CFI = .868, RMSEA = .117) และโมเดลองค์ประกอบเชิงสาเหตุที่มีความสัมพันธ์ระหว่างองค์ประกอบ (โมเดล 3) (ไค-สแควร์ [36, $N=419$] = 58.221, $p = .011$; CFI = .992, RMSEA = .038) ไม่สอดคล้องกับข้อมูลเชิงประจักษ์ ดังนั้น โมเดลการวัดคุณค่าตราสินค้าเอสเอ็มอีจึงเป็นโมเดลองค์ประกอบเชิงยืนยันสองอันดับที่ประกอบด้วยองค์ประกอบอันดับแรก ได้แก่ ความใช้ได้จริงของตราสินค้า ความเป็นของแท้ของตราสินค้า ความใส่ใจของตราสินค้า การตระหนักตราสินค้า และการสะท้อนความสัมพันธ์ของผู้บริโภคกับตราสินค้า

การวิจัยขั้นที่สามคือการศึกษารวมความสัมพันธ์ระหว่างคุณค่าตราสินค้าเอสเอ็มอีกับการตอบสนองของผู้บริโภคและการตรวจสอบความไม่แปรเปลี่ยนของโมเดลการวัดคุณค่าตราสินค้าเอสเอ็มอีในบริบทธุรกิจและลักษณะกลุ่มผู้บริโภคที่แตกต่างกัน ผลการศึกษารวมไม่แปรเปลี่ยนของโมเดลการวัดคุณค่าตราสินค้าเอสเอ็มอีไม่แปรเปลี่ยนลักษณะของโมเดล และสอดคล้องกับข้อมูลเชิงประจักษ์ทั้งในสามตราสินค้าจากสามภาคธุรกิจ (โทฟูซัง [การผลิต]: ไค-สแควร์ [204, $N=184$] = 210.241, $p = .367$; CFI = .997, RMSEA = .013) (ซานดา เท [การบริการ]: ไค-สแควร์ [194, $N=184$] = 219.594, $p = .100$; CFI = .992, RMSEA = .027) (อีฟแอนด์บอย [การค้า]: ไค-สแควร์ [202, $N=184$] = 203.404, $p = .459$; CFI = .999, RMSEA = .037) การวิเคราะห์ความไม่แปรเปลี่ยนของน้ำหนักองค์ประกอบ พบว่า โมเดลการวัดคุณค่าตราสินค้าเอสเอ็มอีมีความไม่แปรเปลี่ยนบางส่วน ซึ่งมีนัยว่า บางข้อคำถามเป็นเกณฑ์ที่ผู้บริโภคใช้ประเมินคุณค่าตราสินค้าเอสเอ็มอีทุกธุรกิจ ส่วนบางข้อนั้นมีการตีความแตกต่างกันไปตามแต่ละบริบทธุรกิจ ผลการศึกษารวมไม่แปรเปลี่ยนของโมเดลการวัดคุณค่าตราสินค้าเอสเอ็มอีในหกกลุ่มผู้บริโภคที่แตกต่างกัน พบว่า โมเดลการวัดคุณค่าตราสินค้าเอสเอ็มอีไม่แปรเปลี่ยนลักษณะของโมเดล และสอดคล้องกับข้อมูลเชิงประจักษ์ทั้งในผู้บริโภคที่แตกต่างกันในระดับคุณค่าตราสินค้า (สูง: ไค-สแควร์ [197, $N=303$] = 213.287, $p = .203$; CFI = .992, RMSEA = .017, ต่ำ: ไค-สแควร์ [193, $N=249$] = 221.865, $p = .076$; CFI = .986, RMSEA = .025) ความเกี่ยวข้องกับประเภทสินค้า (สูง: ไค-สแควร์ [194, $N=298$] = 216.174, $p = .132$; CFI = .993, RMSEA = .020, ต่ำ: ไค-สแควร์ [188, $N=222$] = 211.952, $p = .111$; CFI = .989, RMSEA = .024) และความผูกพันกับตราสินค้า (สูง: ไค-สแควร์ [200, $N=295$] = 225.211, $p = .107$; CFI = .990, RMSEA = .021, ต่ำ: ไค-สแควร์ [193, $N=215$] = 216.419, $p = .119$; CFI = .989, RMSEA = .024) การวิเคราะห์ความไม่แปรเปลี่ยนของน้ำหนักองค์ประกอบ พบว่า โมเดลการวัดคุณค่าตราสินค้าเอสเอ็มอีมีความไม่แปรเปลี่ยน ซึ่งมีนัยว่า ผู้บริโภคที่มีระดับคุณค่าตราสินค้า ความเกี่ยวข้องกับประเภทสินค้า และความผูกพันกับตราสินค้าแตกต่างกัน ประเมินคุณค่าตราสินค้าเอสเอ็มอีด้วยเกณฑ์ที่ไม่ต่างกัน ส่วนผลการศึกษารวมความสัมพันธ์ระหว่างคุณค่าตราสินค้าเอสเอ็มอีกับการตอบสนองของผู้บริโภค พบว่า โมเดลเชิงสาเหตุของคุณค่าตราสินค้าเอสเอ็มอีกับการตอบสนองของผู้บริโภค ได้แก่ ความชอบตราสินค้ามากกว่า ความภักดีตราสินค้า และการบอกต่อ สอดคล้องกับข้อมูลเชิงประจักษ์ทั้งในสามตราสินค้าจากสามภาคธุรกิจ (โทฟูซัง [การผลิต]: ไค-สแควร์ [270, $N=184$] = 301.240, $p = .093$; CFI = .988, RMSEA = .025) (ซานดา เท [การบริการ]: ไค-สแควร์ [247, $N=184$] = 276.888, $p = .093$; CFI = .993, RMSEA = .026) (อีฟแอนด์บอย [การค้า]: ไค-สแควร์ [264, $N=184$] = 295.190, $p = .091$; CFI = .988, RMSEA = .025) สำหรับตราสินค้าภาคการผลิตหรือโทฟูซัง คุณค่าตราสินค้าเอสเอ็มอีอธิบายความแปรปรวนของการบอกต่อมากที่สุดที่ร้อยละ 65.9 ($R^2 = .659$) ส่วนในตราสินค้าซานดา เทของภาคการบริการ และตราสินค้าอีฟแอนด์บอยของภาคการค้า คุณค่าตราสินค้าเอสเอ็มอีอธิบายความแปรปรวนของความชอบตราสินค้ามากกว่าได้มากที่สุดที่ร้อยละ 84.1 ($R^2 = .841$) และ 57.6 ($R^2 = .576$) ตามลำดับ

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This study had two research objectives: (1) to develop and validate a generalizable model for measuring consumer-based brand equity within the SME setting, and (2) to examine the relationship between SME brand equity and consumer response factors. Three steps were conducted in sequence to achieve the research purposes. Firstly, qualitative data from documents of forty awarded SME brands and actual consumers varying in their demographic characteristics were collected by three techniques including document analysis, semi-structured interview, and focus group to get a pool of 41 initial items of SME brand equity. Secondly, the items derived from the first step were analyzed by the exploratory and confirmatory factor analyses. The measurement model of SME brand equity fitted well with the empirical data (Chi-Square [37, $N=419$] = 40.220, $p = .330$; CFI = .999, RMSEA = .014). Then, three competing models of SME brand equity was examined. Only the second-order factor model (Model 1) fitted with the data (Chi-Square [37, $N=419$] = 40.220, $p = .330$; CFI = .999, RMSEA = .014). The causal model (Model 2) (Chi-Square [85, $N=419$] = 574.045, $p = .000$; CFI = .868 RMSEA = .117) and the causal model with relationships between dimensions (Model 3) (Chi-Square [36, $N=419$] = 58.221, $p = .011$; CFI = .992, RMSEA = .038) differed significantly from the empirical evidence. According to the pattern of the best-fitting model, SME brand equity was set to be a second-order latent variable with five first-order latent variables consisting of brand functionality, brand authenticity, brand attentiveness, brand awareness and brand resonance.

Lastly, SME brand equity measurement model was examined for its relationship with consumer response factors and its measurement invariance across business sectors as well as among consumers differing in their characteristics. The results of measurement invariance across business sectors showed the configural invariance or the situation that the three business types shared the same pattern of SME brand equity measurement model fitting well with the empirical data or the opinion of customers assessing three specific brands representing three business sectors (Tofusan [Manufacturing]: Chi-Square [204, $N=184$] = 210.241, $p = .367$; CFI = .997, RMSEA = .013) (Santa Fe' [Service]: Chi-square [194, $N=184$] = 219.594, $p = .100$; CFI = .992, RMSEA = .027) (Eveandboy [Trade]: Chi-Square [202, $N=184$] = 203.404, $p = .459$; CFI = .999, RMSEA = .037). The further analyses showed the partly metric invariance which meant some items are the fundamental criteria customers adopted to assess the SME brand equity within every business context, but some items should be interpreted differently in each sector of SMEs. The tests of measurement invariance among individuals with different characteristics indicated that SME brand equity model fitted well with the empirical data or the opinion of the six customer groups varying in the degree of SME brand equity (High: Chi-Square [197, $N=303$] = 213.287, $p = .203$; CFI = .992 RMSEA = .017, Low: Chi-Square [193, $N=249$] = 221.865, $p = .076$; CFI = .986 RMSEA = .025), product involvement (High: Chi-Square [194, $N=298$] = 216.174, $p = .132$; CFI = .993, RMSEA = .020, Low: Chi-Square [188, $N=222$] = 211.952, $p = .111$; CFI = .989, RMSEA = .024), and brand engagement (High: Chi-Square [200, $N=295$] = 225.211, $p = .107$; CFI = .990 RMSEA = .021, Low: Chi-square [193, $N=215$] = 216.419, $p = .119$; CFI = .989, RMSEA = .024). Further analyses showed the metric invariance of SME brand equity model among consumers with high and low SME brand equity, product involvement, and brand engagement. The findings about the relationship of SME brand equity and consumers' brand responses indicated that the structural equation models depicting the relationship of SME brand equity and three consumer response factors including brand preference, brand loyalty, and word of mouth fitted well with the empirical evidence or the opinion of the three selected brands' customers (Tofusan [Manufacturing]: Chi-Square [270, $N=184$] = 301.240, $p = .093$; CFI = .988, RMSEA = .025) (Santa Fe' [Service]: [247, $N=184$] = 276.888, $p = .093$; CFI = .993, RMSEA = .026) (Eveandboy [Trade]: Chi-Square [264, $N=184$] = 295.190, $p = .091$; CFI = .988, RMSEA = .025). In the case of the manufacturing brand or Tofusan, the consumer response variable most explained by SME brand equity is 65.9 percent of word of mouth ($R^2 = .659$). In the setting of the service and trade SMEs, brand preference's variance was explained in the largest amount by SME brand equity or 84.1 percent and 57.6 percent in the case of Santa Fe' ($R^2 = .841$) and Eveandboy ($R^2 = .576$), respectively.

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Chapter 1

Introduction

Background and rationale of the study

Nowadays small and medium enterprises (SMEs) constitute over 90% of businesses all over the world (World Trade Organization [WTO], 2016). Therefore, it is not surprising that SMEs play the crucial role in driving the economic growth as well as creating jobs in many countries (Suntivong, 2014). For instance, 99.7% of all employers in the U.S. are small firms (Altman & Sabato, 2007). Similarly, SMEs are the backbone of the Thai economy given that they consist of 99.7% of all enterprises in Thailand (Office of Small and Medium Enterprises Promotion [OSMEP], 2016).

For the realization of SMEs' importance in generating jobs and income, the Thai government has allocated substantial support to entrepreneurs since the nation's economic downturn, known as Tom Yam Kung Crisis, in 1997 (Chulasai & Wherry, 2003). To date, promoting SMEs become the priority issue of Thai government policies ("Promoting SMEs and Startups," 2017). The master plan for this business sector has been implemented since 2002, and one of the central policies on enhancing Thai SMEs' sustainability and competitiveness has its focus on SME brand building and management (OSMEP, 2014). Thai SMEs' owners have been encouraged to build their brands in a way that catches consumers' attention since then.

The trend towards branding of SME emerges not only in Thailand but all over the world. The owners of small and medium-sized businesses show the active interest in brand building and brand management. They often build brand identities based on

their personalities (Krake, 2005; Resnick, Cheng, Simpson, & Lourenço, 2016), product characteristics, brand symbols, or organization culture (Centeno, Hart, & Dinnie, 2013). A wide range of brand communication activities is also practiced (Renton, Daellenbach, Davenport, & Richard, 2015).

Despite the abundance of branding activities practiced, brand performance measurement in SMEs is still in its infancy. There is no systematic method to measure SME brand performance. Previous studies indicated that SMEs do not formally evaluate their brand performance in the same way as large organizations (Kapferer, 2008). SME owners often utilized feedback obtained from customers along with indirect measures, such as sales to subjectively appraise the SME brand (Mitchell et al., 2013). Consequently, the investment of the SMEs' entrepreneurs on branding is nowhere near as strategic as they think it is. The limited branding budget may be lost to ineffective marketing tactics and tools. In other words, their brand communication efforts may not lead to the increase in brand value in the eyes of consumers (Davis, 1995).

This severe shortage in the formal instrument for measuring SME brand performance is noticed by several academicians. Brand equity is suggested to be used as an indicator of SME brand performance. Spence and Essoussi (2010) pointed out the need for the quantitative brand equity measurement within the SME setting. Moreover, Odoom, Narteh, and Boateng (2017) recently recommended that SME brand equity should be measured across different levels including customer, product and service markets.

The concept of brand equity highlighted by above researchers is defined, to some degree of agreement, as the added value endowed by a brand to a product as a result of prior investments in the marketing activities for that brand (Broniarczyk & Alba, 1994; Farquhar, 1989). This added value, according to the financial perspective of brand equity, should represent monetary advantages (Seetharaman, Nadzir, & Gunalan, 2001; Smith, Gradojevic, & Irwin, 2007). However, the consumer perspective assesses brand equity from the consumer responses to a brand's marketing activities that result from that brand's previous investment in marketing programs (Keller, 1993).

From the two perspectives of brand equity, this study relies on the consumer-based brand equity for two major reasons. First, it has been widely accepted that the actual value of the brand lies not in the business itself but the perceptions of potential and existing customers (Crimmins, 1992; Farquhar, 1989; Kapferer, 1992). Hence, the equity of the brand should be assessed from the consumers' perspective, and the financial brand value is more properly to be treated as the consequence of consumer-based brand equity (Christodoulides & de Chernatony, 2009). Another reason is that the measurement of brand equity from the consumers' view seems very suitable for SMEs' daily operation. Specifically, most SMEs have no systematic financial records (Blackburn, Hart, & Wainwright, 2013), and they have more chances to collect the data directly from their customers through face-to-face interaction (Mowle & Merrilees, 2005). Moreover, consumers are found to be the co-producers of the brand equity within the setting of retail SMEs as they interact with many components of the retail process (Mitchell, Hutchinson, Quinn, & Gilmore, 2015). Taking all aspects into

account, this study adopts the consumer-based perspective of brand equity to measure brand performance within the SME context.

Until now, only two studies have employed the consumer-based approach of measurement to assess SME brand equity. The first one, carried out by Asamoah (2014), measured consumer-based brand equity of Ghanaian SMEs on four components including brand loyalty, perceived quality, brand awareness, and brand association. However, the method and scales used in Asamoah's (2014) study cannot be readily adopted by SME brand managers since the measurement was taken in overall SMEs with no specific brands tested. To fulfill the research gap referred to earlier, Chokpitakkul and Anantachart (2014) measured consumer-based brand equity in two selected SME brands in the freshly-baked bakery business called *After You* and *Cookies Crust*. Their SME brand equity dimensions were based on the concept of brand knowledge and perceived brand relationship quality. Although the exhaustive literature review was undertaken, it was ironic that the components of consumer-based brand equity were chosen without gathering opinions from consumers. Hence, the measurement model of SME brand equity to be developed in this study is derived from the experiences of actual customers, providing much-needed insight into the nature of the SME brand equity components from a consumer's perspective.

In addition to the aim of providing a valid, reliable, and generalizable measurement model of brand equity for SMEs, this study intends to put forward the theory pertaining to consumer-based brand equity measurement. As such, the extensive review of theories and concepts regarding small and medium-sized enterprises (SMEs), brand equity, and consumer behavior is undertaken here to identify the common cores of consumer-based brand equity's theoretical and

operational definitions and to discover the knowledge gap regarding brand equity measurement needed to be fulfilled.

Several interesting issues emerge from the literature review. The first thing mentioned here is a distinct lack of empirical evidence in the theory development of brand equity. Previous studies on the conceptual and operational definition of consumer-based brand equity drew heavily upon the two most influential conceptualizations of brand equity—Aaker's (1991) and Keller's (1993). However, little interest goes to the conceptual definition postulated later by Keller (2001).

Besides the need for operational definitions, there is a shortage of research on the effectiveness comparison of the existing measurement models of brand equity. To date, three kinds of brand equity model are distinguished—(1) *a second-order factor model* that treats brand equity as a complicated variable reflected by the first-order variables; (2) *a causal model* which sets the first-order variables to form or cause brand equity; and (3) *a causal model with relationships between dimensions* of brand equity. Despite many forms of competing models discussed above, no researcher compares the effectiveness of them.

Another interesting issue is the trend of developing a more generalizable, valid, and reliable measurement model of consumer-based brand equity. To increase the generalizability of the model, some researchers utilized analytical techniques such as the examination of the model's measurement invariance across samples. For instance, Buil, Martínez, and de Chernatony (2013) used multigroup Confirmatory Factor Analysis to assess the invariance of data collecting from Korean and American participants. To establish the nomological validity, some researchers examined dependent variables reflecting the branding advantages such as market price (Lassar,

Mittal, & Sharma, 1995), price premium, and brand extension (Buil et al., 2013). Moreover, some models test the relationship between brand equity and consumer response factors regarding attitudinal reaction and behavioral intention, such as brand preference (Buil et al., 2013) and brand purchase intention (Buil et al., 2013; Kim, Knight, & Pelton, 2009; Netemeyer et al., 2004).

In consideration of all the above premises, this study focuses on (1) the development and validation of a generalizable model for measuring consumer-based brand equity within the SME setting, and (2) the examination of the relationship between SME brand equity and consumer response factors. SME brand equity constructs here are conceptualized from qualitative data gathered from actual consumers and existing literature. Moreover, the quantitative research is conducted to empirically verify the SME brand equity model invented, and test the Keller's (2001) brand equity pyramid. For the effectiveness comparison of existing brand equity models, three competing models of SME brand equity are developed. In an attempt to maximize the validity, reliability, and generalizability of SME brand equity model, the researcher will examine the relationship between the best-fitting model and consumer response variables as well as the measurement invariance of the model among heterogeneous groups of consumers and across business sectors.

Research objectives

1. To develop and validate a generalizable model for measuring consumer-based brand equity within the SME setting
2. To examine the relationship between SME brand equity and consumer response factors

Research questions

1. How can a generalizable model be developed for measuring consumer based brand equity within the SME context?
2. What is the relationship between SME brand equity and consumer response factors?

Scope of the study

This research project focuses on (1) the development and validation of a generalizable model for measuring consumer-based brand equity within the SME setting, and (2) the examination of the relationship between SME brand equity and consumer response factors. Three steps were conducted in sequence to achieve the research purposes. Step 1 is for generating initial items of SME brand equity. Qualitative data were gathered from the analysis of documents regarding brand communication of successful SMEs, 40 semi-structured consumer interviews, and two focus groups with participants differing in their demographic and sociocultural backgrounds.

Step 2 was later conducted to empirically explore and confirm the dimensions of SME brand equity, together with the development and validation of the competing models. Two surveys were carried out with a statistically sufficient amount of two random samples or 838 respondents from the same population of 18- to 55-year-old male and female consumers who have purchased or used products or services of SME brands. After that, in Step 3, the fittest SME brand equity model was examined for its measurement invariance among heterogeneous groups of consumers as well as across business sectors. The relationship between SME brand equity and consumer response

factors was also investigated here.

Three separate surveys were conducted for three brands chosen by consumers in study 2. In particular, Tofusan (pasteurized soymilk), Santa fe' (steakhouse), and Eveandboy (beauty store) were selected for the manufacturing, service, and trade business sector, respectively. Data were collected, until reaching a statistically required sample size which was 184 respondents for each brand or 552 samples in total, from those having purchased or used one of the three SME brands' products or services at least once within a month (Tofusan), two months (Santa fe'), and three months (Eveandboy).

Definitions of key terms

Small and medium enterprises (SMEs) are businesses in manufacturing, service, and trade sectors which have 50-200 staffs and fixed assets of 50-200 million THB (Office of SMEs Promotion [OSMEP], 2011).

1. *Manufacturing SMEs* refers to all kinds of industrial enterprises, simple agricultural product processing, as well as household-based manufacturers that transform materials into new products by mechanical or chemical means and regardless of whether the work is done by machine or hands (OSMEP, 2011). The manufacturing SME brand selected to measure brand equity in this study is Tofusan (pasteurized soymilk).
2. *Service SMEs* encompasses businesses in education, health, entertainment, transportation, construction, real estate, hotel and dormitory, restaurant, food sales, beverage sales, entertainment, personal and leisure service, and

tourism (OSMEP, 2011). Santa fe' (steakhouse) was chosen for measuring SME brand equity within the context of service businesses.

3. *Trade SMEs* covers both wholesale and retail businesses (OSMEP, 2011). Eveandboy (beauty store) was selected by consumer participants to represent the trade SMEs in measuring SME brand equity.

SME brand equity refers to the value added by consumers to a brand that is operated by small and medium-sized enterprises. This study measures SME brand equity by developing its own scales based on the existing literature as well as qualitative data derived from SME brands and actual consumers. SME brand equity measurement model invented here consisted of five sub-components measuring by 23 items.

1. *Brand functionality* is measured by five items about how well an SME brand can fulfill the fundamental needs of consumers by providing the product/service that is suitable for the purpose it was designed for.
2. *Brand authenticity* includes three items regarding how well an SME brand is true to its nature and uniquely and freshly delivers its promise without imitating other brands.
3. *Brand attentiveness* have four items assessing how well an SME is helpful and makes sure that its customers get what they need.
4. *Brand awareness* or the ability of consumers to identify a brand after prior exposure (Keller, 2001) was measured by five items (Oh, 2000).

5. *Brand resonance* known as the psychological and behavioral loyalty that customers have with a brand is measured by six items (Wang, Wei, & Yu, 2008).

Consumer characteristics are defined as an individual's character traits engaged in consumption or the decision-making procedures. This study examined two variables regarding consumer characteristics which are product involvement and brand engagement.

1. *Product involvement* is the degree of consumer's product interest and perceived product importance (Guthrie & Kim, 2009) that may last for a long time or occasionally be triggered by situations (Houston & Rothschild, 1978). This variable is measured by three items adapted from the scale of Mittal (1995).
2. *Consumer's brand engagement* or consumers' cognitive, emotional, and behavioral efforts for a brand (Hollebeek, 2011) is measured by eight items of Sprott, Czellar, and Spangenberg (2009).

Consumer response factors mean the attitudinal or behavioral consumers' reactions to a specific brand. This study investigates three variables of consumer responses including brand preference, brand loyalty, and word of mouth.

1. *Brand preference* is the extent to which consumers have a bias for a particular brand (Ismail & Spinelli, 2012) when comparing to others in their consideration set (Hellier, Geursen, Carr, & Rickard, 2003). Five items of Chang and Liu (2009) are adapted to measure brand preference.

2. *Brand loyalty* occurs when consumers feel strongly committed to a brand and keep purchasing it over time despite changes in price or competitors' marketing effort (Oliver, 1999). This study measures brand loyalty by three items of Yoo and Donthu (2001).
3. *Word of mouth* or the positive brand information that consumers tell others (Castellanos-Verdugo, Oviedo-Garcia, & Roldan, 2009) is measured by the four items of Ismail and Spinelli (2012).

Contribution of the study

Regarding the theoretical aspect, this study advances the conceptualization of brand equity measurement for SMEs. Prior studies drew heavily on the existing concepts to measure SME brand equity. This dissertation fulfills this knowledge gap by obtaining data from actual consumers to identify the underlying constructs of SME brand equity and to develop a generalizable measurement model which explains the nature of consumer-based brand equity within the SME context.

For the empirical contribution, this study operationalizes SME brand equity in the way that can empirically test Keller's (2001) concept of brand equity pyramid. Moreover, this dissertation is able to provide concrete evidence for the comparison of three alternative brand equity models appearing in the literature.

The originality of the proposed dissertation consists also in its methodology. To overcome the limitation of small and medium-sized firms, the researcher introduces a new methodological and analytical techniques which are particularly useful for researchers interested in conducting the quantitative research on the branding of SMEs.

Finally, the results of this study contribute to the practice regarding brand equity measurement. The method and scales developed here can be readily adopted by SME owners to measure their brands' equity in the eyes of customers, resulting in the more effective brand communication strategies that eventually enhance Thai SMEs' sustainability and competitiveness in today's changing market.



Chapter 2

Literature review

Since this study intends to provide a valid, reliable, and generalizable measurement model of brand equity for SMEs as well as to put forth the theory of consumer-based brand equity measurement, an extensive review is undertaken here to discover the knowledge gap needed to be fulfilled. The three topics relevant to the measurement of SME brand equity reviewed here include theories and concepts regarding small and medium-sized enterprises (SMEs), brand equity, and consumer behavior. Subsequently, the tentative conceptual framework for SME consumer-based brand equity models is proposed.

Theories and concepts of small and medium-sized enterprises (SMEs)

To develop and validate a systematic measurement model of SME brand equity, it is essential to thoroughly examine significant aspects of small and medium-sized firms including their historical background and definition, business sectors and types, characteristics and competitive advantages, marketing strategies and marketing communication practices, plus their branding and performance measure.

Historical background and definition of SMEs

In the 1970s, the UK, as well as many European countries, encountered severe political and economic problems. The large businesses, which once flourished in the Fordist era, faced their hard times. Due to the industrial readjustment and soaring

unemployment rate, the focus in business has turned, although not absolutely, away from the large industrial units to the small firm formation (Southern, 2000).

We can say that European SMEs had their origins from economic downturns. In contrast, small and medium-sized enterprises in the U.S. have been paving their ways since the beginning of the country. Moreover, during the economic turmoils of the state in the early 1980s, small firms multiplied rapidly. Hence, they continually play significant roles in the success of the nation (Bamford & Bruton, 2006).

Similarly, in Thailand, SMEs have been the root of the country's economic growth. However, during 1985-1995 or the ten glorious years, Thai SMEs were taken for granted. Until the economic collapse came unexpectedly in 1997, the government allocated more support to Thai entrepreneurs for the realization of SMEs' importance in generating jobs and income (Chulasai & Wherry, 2003). Today small and medium-sized ventures are the backbone of Thai economy, so promoting SMEs become the priority issue of Thai government policies ("Promoting SMEs and Startups," 2017). Due to the wide diversity of each country's economic condition mentioned above, it is impossible to define a single and uniform meaning of SMEs (Brooksbank, 2000). Centeno and Hart (2012), however, pointed out that definitions of SMEs might adopt the following criteria:

(1) *quantitative attributes*, which may include numerical data, for examples, total employees, revenues and financial assets; and

(2) *qualitative attributes*, which may refer to the distinct characteristics of SMEs, such as managerial style, business objectives, and marketing practices.

For SMEs in Thailand, the regulation of the Ministry of Industry issued in 2002 defines small and medium-sized enterprises by their total employment and value of fixed assets with the exclusion of land as shown in Table 2.1.

Table 2.1: Definition of Thai SMEs

Type	Number of employees		Fixed assets (THB mil.)	
	Small	Medium	Small	Medium
Manufacturing	≤ 50	51 - 200	≤ 50	50 < THB mil < 200
Services	≤ 50	51 - 200	≤ 50	50 < THB mil < 200
Wholesale	≤ 25	26 - 50	≤ 50	50 < THB mil < 100
Retail	≤ 15	16 - 30	≤ 30	30 < THB mil < 60

Source: Translated from Office of SMEs Promotion (OSMEP). (2011). *Definition of SMEs*. Retrieved September 3, 2017, from [http://www.sme.go.th/Pages/Define/ Define.aspx](http://www.sme.go.th/Pages/Define/Define.aspx)

Business sectors and types of SMEs

SMEs are mostly divided into several business sectors which differ in attributes such as the number of employees and the financial statement. To enhance representativeness and generalizability, many researchers in branding (Berthon, Ewing, & Napoli, 2008; Odoom, 2016) chose their participants from all economic sectors of small and medium enterprises upon each country's definition. In Thailand, SMEs consist of three sectors including (1) *manufacturing* which refers to all kinds of industrial enterprises, simple agricultural product processing, as well as household-based manufacturers that transform materials into new products by mechanical or chemical means and regardless of whether the work is done by machine or hands

(2) *service* which encompasses businesses in education, health, entertainment, transportation, construction, real estate, hotel and dormitory, restaurant, food sales, beverage sales, entertainment, personal and leisure service, and tourism, and (3) *trade* which covers both wholesale and retail businesses (OSMEP, 2011).

SMEs, moreover, are categorized into various types. One of the most widely-adopted criteria in branding and marketing communication research is the age of business (Bresciani & Eppler, 2010; Jones, Borgman, & Ulusoy, 2015). The years of firm operation were stratified into ranges of duration such as 1-5, 6-10, 11-15, and above 15 years (Odoom, 2016). In Thailand, Global Entrepreneurship Monitor (GEM) grouped all SMEs into two categories consisting of the young and the established ones aged less and more than 3.5 years, respectively (OSMEP, 2016).

Furthermore, SMEs in Thailand can also be specifically classified by their business setup (juristic person, ordinary person, and community enterprise) plus provincial group (Bangkok, the upper, lower, and central parts of four regions, the Andaman Coast, and the Gulf of Thailand) (OSMEP, 2016).

Last but not least, some researchers divided SMEs into the type that suited to their study purposes. For example, Renton, Daellenbach, Davenport, and James's (2016) work on brand management of food and beverage SMEs in New Zealand utilized the growth rate to select its participants covering emergent, growing and established firms.

Characteristics of SMEs

Small businesses are not just little big firms (Stokes, 2000). Rather, it is acknowledged that SMEs have their particular characteristics (Carson & Cromie, 1990) derived from two major sources including their unique organizational structure and the owners' personality and traits (McCarthy, 2003). Hence, topics related to business and entrepreneur characteristics will be discussed in this section.

Business characteristics of SMEs

The definitions of SMEs mostly focus on the quantitative attributes, such as the number of employees and total fixed assets. In addition to those quantitative factors, five sets of qualitative characteristics were also summarized (Schollhammer & Kuriloff, 1979, as cited in Carson, 1990):

Scope of operations – small businesses functioned predominantly in a local or regional market rather than a national or international market (Carson, 1990) with only a few branch offices (Phawakanan, 2010).

Scale of operations – small and medium-sized firms tend to have a limited share of a particular market (Carson, 1990). They serve specific segments of consumers (OSMEP, 2016). A limited range of products and customers is seen to minimise the formal procedures to manage customer information (Appiah-Adu & Singh, 1998).

Ownership – small firms are often owned by one person or a very few people and often operated directly by their owner(s) (Phawakanan, 2010; Schollhammer & Kuriloff, 1979, as cited in Carson, 1990).

Independence – SMEs are not part of a complex enterprise system such as a small division of a large industry. They are also independent in the sense that the firm owners have absolute researcherity to control the business.

Management style – Owners of small companies manage their businesses in a personalized way. More often, they participate in all aspects of business management (Schollhammer & Kuriloff, 1979, as cited in Carson, 1990). Small business owners also tend to have a close personal relationship with their employees (Phawakanan, 2010).

Individual characteristics of SME entrepreneurs

The entrepreneurial characteristics and personalities are broadly discussed in the literature (Hill, 2001). These topics related to this study, because Centeno and Hart (2012) suggested that inherent values and characteristics of SME founders may be a vital source of differentiation among brands. SME entrepreneurs might start their businesses for different reasons. However, they share some mutual characteristics.

Delmar (2000) concluded from numerous findings of studies on entrepreneurial personalities that individuals who conduct their own businesses have a great *desire for autonomy*, because most entrepreneurs yearned for freedom and researcherity to execute their ideas (Kuhn, 1989) and be able to control all resources by themselves (Scarborough & Zimmerer, 2006).

Another widely mentioned trait of business owners is the *need for achievement* (Delmar, 2000). Small firm founders mostly desired to achieve something in their lives and inclined to seek for social acceptance and material wealth (Katz & Green, 2007).

Their grand ambitions are related to an attribute defined as the *willingness to take risks*. (Bamberger & Bonacker, 1994) It is, however, not a high-level and unreasonable risk like gambling. More precisely, Scarborough and Zimmerer (2006) explained that entrepreneurs accept the risks when they perceive the possibility, which may seem unreal in others' opinions, in some business situations.

SME owners are not only willing to take risks but also *confident in their ability to succeed* (Kuhn, 1989). Delmar (2000) pointed out that the entrepreneur with their abundant confidence could be too optimistic about the success rate, but this may be the major reason why many of them still insist on building their businesses despite facing barriers or lacking supports in the start-up phase (Scarborough & Zimmerer (2006).

Competitive advantages of SMEs

For SMEs, their sizes provide them several competitive advantages over big opponents. Massive literature acknowledged SMEs for their *flexibility and creativity in response to market* (Escriba´-Esteve, Sanchez-Peinado, & Sanchez-Peinado, 2008; Krake, 2005; Steffens, Davidsson, & Fitzsimmons, 2009). Owing to their smaller size, SMEs have much less sophisticated organizational structure than large companies. The low in hierarchy not only allows members of SMEs to express their creative thoughts but also increases the level of flexibility the workplace which is essential for long-term success (Hill, 2001)

In addition, smaller sizes of SMEs help accelerate their *speed of action* in daily business activities as well as in the discovery of new opportunities that bring

them a good fortune, whereas large firms are often slower to act because the organizational complexity inhibits them from quick and responsive decision making (Stokes & Lomax, 2002).

The advantage of small and medium-sized ventures also includes their *innovativeness* achieved through product and market differentiation (O'Donnell, Gilmore, Carson & Cummins, 2002). Research indicated that when comparing to large organizations, small firms were more capable of acquiring and utilizing marketing information (Chaston, Badger, & Sadler-Smith, 2001) to design new products (Bamburger, 1994) and invent creative marketing strategies for coping with changing circumstances (Knight, 2000).

The compact size of organization offers SMEs another significant competitive advantage that is *closeness in customer relationship*. Informal business procedures permit SME owners to have close contact with their clients (Jack, Moulton, Anderson, & Dodd, 2010; Moriarty, Jones, Rowley, & Kupiec-Teahan, 2009) and build customer networks. Besides gaining more regular customers, this benefits SMEs in gathering market information, obtaining feedback, and testing their business ideas (Gilmore, Carson, & Grant, 2001; Stokes, 2000).

All competitive advantages discussed above, including flexibility, speed of action, innovativeness, and closeness in customer relationship, lead to the ability of SME to provide more of *tailored and value-added offerings* when competing with large firms (Gilmore, Carson, O'Donnell, & Cummins, 1999). Capability to offer tailor-made products could be beneficial to the business in the long run, as customisation was proved to increase customer satisfaction which ultimately develops to be loyalty (Coelho & Henseler, 2012).

Marketing strategies of SMEs

As marketing in SMEs is a subject that has close ties to their brand management (Krake, 2005), five marketing strategies vastly adopted by small and medium-sized firms are summarized in this section.

Innovative marketing

Innovative marketing in the SME setting goes by several definitions. The terms similarly focus on the extent to which a business can solve problems and respond to customer needs in the novel, creative, or unconventional ways such as the development of new products, services, or organizational processes (Knight, Omura, Hills, & Muzyka, 1995; O'Dwyer, Gilmore, & Carson, 2009). Due to their restricted resources, SMEs' products, in most cases, differ only slightly from others'.

Consequently, innovative marketing also covers the creativity and uniqueness in SME marketing activities, for examples, how they add value to the overall presentation of products or services (Carson & Gilmore, 2000).

Market and network-based relationship marketing

Relationship marketing in the market-based dimension is about building and nurturing a long-term relationship with customers to gain their loyalty and retention, whereas network-based relationship marketing concentrates on forming and maintaining a strong bond with employees and other stakeholders. SMEs' business activities are mostly based on personal interaction and networking. Moreover, they are more efficient than large organizations in handling customers' special requests. Hence, small and medium-sized firms, particularly one in the service sector, are very suitable for relationship marketing strategy (Jones & Tilley, 2003).

Self-marketing

Self-marketing is described as various activities performed by individuals to introduce themselves to be known in the marketplace (Shepherd, 2005). SME entrepreneurs are keen on managing businesses in their individual styles with no formal marketing plan. For this reason, they tend to intuitively practice self-marketing strategy in the manner of using their unique personalities to promote the businesses. (Resnick, Cheng, Simpson, & Lourenço, 2016)

Niche marketing

The niche marketing strategy concentrates on identifying areas of demand or a specific group of customers that are yet to be served for by other competitors (Chulasai & Wherry, 2003). SMEs are talented in providing original and distinct items like detailed handiwork. These special commodities are under provided by large industries, SMEs, therefore, have unparalleled business opportunities (Chulasai & Wherry, 2003).

Word-of-mouth marketing

SMEs rely heavily on word-of-mouth to expand their customer base through referrals and recommendations. This strategy is acknowledged as one of the most potent ways to acquire new customers (Stokes, 2000). Although non-controllable, word-of-mouth marketing is still suitable for SMEs, as it is free of charge and can gradually build up the credibility for small businesses (Stokes, 2000).

SME marketing communication practices

By continually searching for the low-cost but most effective way to communicate with their targets (Spence & Essoussi, 2010), small and medium-sized

firms have their unique practices of marketing communication. It is relevant here as consumers' brand perception partly be affected by marketing communication. Hence, four aspects of SME marketing communication practice including the use of marketing mix, tools, and media will be respectively discussed.

SME marketing mix

To generate more sales, Carson, Cromie, McGowan, and Hill (1995) claimed that SMEs need to combine their marketing mix carefully. Small businesses, however, face the limitation in planning and execution of the marketing mix due to their limited budget (Thrassou & Vrontis, 2006). As a result, a slight amount of the literature about SME marketing mix was presented. Jamal (2005) found that 4Ps marketing mix was one of the marketing strategies adopted by small ethnic retail stores in the UK.

About the management of *product* dimension, small businesses provided a wide variety of goods. Moreover, differentiation was enhanced by selling authentic product from the countries of origin as well as specially-developed product and packages (Jamal, 2005). Similarly, Odoom (2016) noticed that SME brands launched high-quality products with a nice package design to appeal the market. Regarding the *price* aspect, small and medium businesses followed the differentiated pricing strategy (Jamal, 2005) and also associated the *price* setting with the value of their brands and the rival ones (Odoom, 2016). For the third P-*place*, SMEs communicated with the market via in-store promotional displays. Furthermore, delivery service was offered to increase sales and the perceived convenience (Jamal, 2005). Finally, SMEs utilized *promotion* plans, such as giving discounts along with building customer-brand relationships, to boost customer behavioral and attitudinal loyalty (Jamal, 2005).

Tools for SME marketing communication

SMEs, despite a shortage of resources, are possible to initiate a marketing campaign in a quick and cost-effective way (Poolton, Ismail, Reid, & Arokiam, 2006). To be more specific, Gabrielli and Balboni's (2010) study on the adoption of integrated marketing communications (IMC) among SMEs revealed three types of practice in small and medium-sized firms. The first was the "well-constructed communication mix" referring to businesses that use multiple marketing communication tools. Another one was the "interactive communication-focused" companies that concentrate on methods, such as direct marketing, which can reach their targets straight away. However, the last one named the "single tool" pay their attention to only one communication activity. More details on SME marketing communication provided by Centeno and Hart (2012) suggest the use of tools including;

Advertising – SMEs rarely rely on the classic marketing communication method like an advertising campaign because of their financial constraint. The lack of experience in negotiation with advertising and media agencies also prohibits SME owners from adopting traditional advertisements. SMEs, therefore, find other creative ways to advertise such as running a short program on a local radio then mention some details of their products (Centeno & Hart, 2012).

Public relations – Editorial articles about new products of SMEs are submitted to print media such as magazine and newspaper to earn more consumer attention. The key point to get published is the newsworthiness of the content which mainly derives from product novelty (Centeno & Hart, 2012).

Personal selling – The market of SMEs is usually small and consists of few customers, so face-to-face communication like personal selling, which allows salespersons to take active roles, plays a crucial part in driving sales in the SME context (Ojasalo, Nätti, & Olkkonen, 2008). This tool becomes even more important among SMEs that sell premium products because information on product value can be effectively conveyed to customers by personal communication (Thrassou & Vrontis, 2006).

Trade show – In spite of the high cost, small and medium-sized businesses choose to set up a booth at an event organized around a particular theme because they have more opportunities to meet their potential customers (Bamford & Bruton, 2006).

Media usage in SMEs

SMEs carefully allocate their budgets to both offline and online media. To generate more sales, SMEs most commonly advertise in the inexpensive media such as newspapers, magazines, brochures, and business cards. They also spent a huge proportion of their marketing budget on packaging and in-store displays. However, the television commercial is rarely used due to its high cost (Krake, 2005).

In addition to offline media, SMEs extensively use online tools for marketing communication. Websites facilitate various SME selling activities including advertising, direct marketing, and market watching (Nakara, Benmoussa, & Jaouen, 2012). Moreover, social media become SMEs' most favorite channel to connect them to existing and potential customers (Jones, et al., 2015), since these user-friendly media require only basic skill and low operating cost. The most important reason is that social media, such as Instagram, Facebook, and Twitter, help SMEs transcend geographic boundaries to interact with their potential customers (Jones, et al., 2015).

Branding in SMEs

Definitions of the brand now are broadened by various perspectives (Mitchell, Hutchinson, & Quinn, 2013). The product paradigm defines branding as product attributes, for examples, logos, slogans, features, and other identifiers. On the contrary, branding, in the view of the projective paradigm, should take not only product attributes but also consumer perception on the overall identity of the business (Simoes & Dibb, 2001). The adaptive paradigm also relies on the consumer perspective (Wood, 2000) by stating that the brand is the meaning derived from sets of associations occurred when consumers interpret brand messages (Keller, 1993). The last two, the relational and the emotional paradigms, contend that the brand is the bond between customer and firm (Fournier, Sele, & Schogel, 2005; Fournier & Yao, 1997).

In the SME branding literature, the definition of branding is firmly associated with the SME marketing practices and depend highly on their business norms (Mitchell et al., 2013). Therefore, branding in SMEs is assumed to be different from branding in large organizations (Ahonen, 2008). SMEs, moreover, vary in the degree of their brand orientation (Wong & Merrilees, 2005) or the extent to which the organization involves in the creation, development, and ongoing management of the brand (Urde, 1999). Hence, the branding of SMEs will be discussed here in two topics including the brand building, or the creation and development of brand identity, followed by the brand management of SMEs.

SME brand building

The brand building activity mainly revolves around *the creation of brand identity* which is a step-by-step approach to instil the unique, consumer-needed value into the brand (Aaker, 1996). Brand identity, in the domain of large industries, should be connected to specific and limited core values of the organization (de Chernatony, 2001). However, Centeno, Hart, and Dinnie (2013) found that SME brands build their identities from one or more of the four sources including personalities of the firm owners, their products, symbols, and organization cultures.

Regarding the identity influenced by characteristics of SME entrepreneurs, the literature indicated that there is a strong relationship between personalities of the entrepreneur and that of the brand (Centeno et al., 2013; Krake, 2005; Resnick et al., 2016). Since SME owners are often the inspiration of the businesses (Krake, 2005), separating their identities from the brands is impossible. Brand identity obtained from entrepreneur characteristics is a unique branding practice among SMEs as Resnick et al. (2016) found that the trace of owner personalities tends to fade away when the firms grow bigger.

SME brand identity can also come from the quality and the newness of products (Centeno et al., 2013). SMEs know how to accentuate their product distinctiveness by creating their signature, high-quality goods as well as launching new products. To illustrate, Mowle and Merrilee (2005) found that Australian SME wineries, which adopted the product-driven branding approach, allowed their customers to personally discuss product details with the brands' winemakers.

Another way to form SME brand identity is creatively using symbols, such as brand name, logo, and color. Some of the strategies adopted by SME owners were that these symbols needed to evoke positive associations and benefits as well as be simple, short, attractive and easy to recall (Centeno & Hart, 2013). Odoom (2016) congruently reported that SMEs differentiated their brands from other competitors by choosing different colors plus coining the memorable and meaningful brand name. Moreover, some SMEs leveraged their famous family name to boost the brand differentiation and reputation (Craig, Dibrell, & Davis, 2008).

Last but not least, SME business characteristics may pose a key source of brand identity. Since SMEs have informal and flat structures with minimal control (Carson & Cromie, 1990), they tend to establish unique shared values from their close personal relationship (Centeno et al., 2013).

Besides creating their brand identities, some SMEs *broaden the brand with secondary associations*. Odoom (2016)'s finding indicated that SME brands were often associated with famous people or the country of origin to gain more credibility.

In sum, SME brand building process focuses on crafting the distinctiveness of their firms or brand identity. Four dimensions of SME brand identity include personalities of the brand owners, the product quality, the symbols such as brand names and colors, plus the organization values. Some SMEs also widen their brands with secondary associations. These brand identities, as well as other extensions, will be later conveyed to customers via the brand management activities presented below.

SME brand management

Brand management was defined as the organizational implementation of brand strategies in an ongoing manner (Keller, 1998) to assure consistency between an organization's vision and stakeholders' perception of a brand (Berthon et al., 2008). In other words, brand management is the process of communicating brand identity and meanings to customers (Renton et al., 2015). Existing studies showed that SME brand management behaviors are directly related to brand communication (Centeno et al., 2013; Renton et al., 2015) and brand performance measurement (Renton et al., 2015).

Although affected by their constraint budget, SMEs practice a large number of *brand communication* activities (Centeno & Hart, 2012). This is because while sales remain their desired goal, SMEs also need more brand recognition (Krake, 2005).

SMEs were found to adopt more than 30 brand communication activities (Centeno & Hart, 2012) to connect with different customer groups on various occasions (Coviello et al., 2000). Their activities mostly were personal, face-to-face communication done for enhancing brand favorabilities, for examples, public relations activities, trade and consumer shows, and product demonstrations (Centeno & Hart, 2012). Krake (2005) noted that because of their tight budget, almost all SMEs preferred to communicate their brand via public relations, and, to complete the PR mission, the brand founders particularly played a major role in presentations and delivering the brand message. This finding is supported by the study of Centeno and Hart (2012) which revealed that the SME owners actively participated in publicity by being featured in newspaper and magazine articles or TV and radio programs.

Although usually appeared in the mass media, SME brand owners cannot afford traditional advertising due to their limited resources. For this reason, they often communicate their brand identity and associations via alternative media that are more cost effective such as packages (Kremer & Viot, 2012) and the store environment (Mitchell, Hutchinson, Quinn, & Gilmore, 2015).

Furthermore, online media are growing in importance for SME brand communication, Krake (2005) stated that websites become the popular media since the internet penetrates everywhere (Kessler, 2007). Basic elements plus interactive features of websites enable SMEs to vividly communicate their brand personality and brand position (Opoku, Abratt, Bendixen, & Pitt, 2007). Another online tool extensively used among SMEs are social media including Instagram, Twitter, and Facebook. These social media sites benefit SMEs not only in conveying their brand identity (Nimsuwan & Polnigongit, 2013) but also in developing interactive brand engagement with customers (Renton, Daellenbach, Davenport, & Richard, 2015).

Finally, numerous studies contend that word-of-mouth (WOM) was one of the most important media for SME brand communication because, although uncontrollable, it succeeds truly in generating brand awareness (Abimbola, 2001; Berthon et al., 2008; Jamal, 2005; Krake, 2005; Wong & Merrilees, 2005).

Despite the abundance of brand communication activities and media aforementioned, *brand performance measurement* in SMEs is still in its infancy. Previous studies indicated that SMEs do not formally evaluate their brand performance in the same way as large organizations (Kapferer, 2008). SME owners often utilized feedback obtained from customers along with indirect measures, such as sales to subjectively appraise the SME brand (Mitchell et al., 2013).

There is a severe shortage in the formal instrument for measuring SME brand performance like the quantitative brand equity measurement (Spence & Essoussi, 2010). As such, it will be worthwhile to examine the evaluation method and the variations in measurement of SME brand equity at different levels including customer, product and service markets (Odoom, Narteh, & Boateng, 2017).

Performance measurement of SMEs

As the major purpose of this study is to develop a systematic measurement model of SME brand equity, it is worth spending some time for the concept of SME business performance measurement that possibly shares some common ground. The components and the measurement method of SME business performance are briefly discussed in this section.

In the SME setting, both quantitative and qualitative criteria for measuring the business performance were introduced. *Quantitative criteria* consist of variables related to financial data, such as development in revenue, market share, and profitability (Blackburn, Hart, & Wainwright, 2013). Moreover, the number of employees and turnover rate during previous 2-3 years were also adopted for the assessment of SME business growth (Reijonen, Laukkanen, Komppula, & Tuominen, 2012; Krake, 2005). *Qualitative criteria*, on the other hand, focus more on intangible values. For example, name recognition (Krake, 2005) and word-of-mouth recommendations (Gilmore et al., 1999) Interestingly, scholars working on SME performance measurement recently suggested the qualitative criteria associated with customer and brand. To illustrate, Osakwe (2016) introduced the five dimensions of

the customer-centric performance in the small firm context consisting of customer acquisition, customer satisfaction, brand trust, brand loyalty, and corporate image.

The method of measurement for SME business performance is significantly different from the one for large firms. Instead of obtaining data from the annual report, the financial components of SME performance were often measured by five-point Likert scale (Asamoah, 2014; Maurya, Mishra, Anand, & Kumar, 2015), since SMEs mostly don't use a systematic approach to their accounting records. Moreover, it was only SME entrepreneurs, not all stakeholders, who were asked to rate their firm growth in comparison to the organization's major competitor (Blackburn et al., 2013).

From the literature discussed above, it can be concluded that SME performance measure is heavily dependent on the owners' or managers' perspectives. Although attributes related to brand and customer are suggested to be one of the criteria for SME performance assessment (Osakwe, 2016), the validity of the measurement is still questioned as the data are solely collected from business entrepreneurs. Therefore, to invent a more valid scale, now is time for researchers to incorporate more of customer opinions into the SME performance measurement.

Summary

Having their origins from economic downturns in the UK around the 1970s, Small- and medium-sized enterprises or SMEs, in contrast, have been the root of Thailand as well as the US economy since the beginning. As they emerged from the diverse economic conditions, there is no consensus on the definition of SMEs. Quantitative attributes such as total employees, revenues, and financial assets together with qualitative characteristics including management styles and marketing practices

may be adopted to form the specific definition of SMEs in each country. For example, Thai SMEs refer to businesses with total fixed-asset of 50-200 million Baht and 50-200 total employees. SMEs, moreover, are categorized into various types according to their business sectors, firm age, form of the business setup, provincial group, or specific purposes of each study. SMEs differ from large organizations in their business characteristics that are limited in scope and scale of operation along with the personalized management style of independent owners, or individuals who willingly and confidently risk founding their businesses in need for autonomy and achievement.

For SMEs, their smallness leads to several competitive advantages. They can provide more of tailored and value-added offerings due to their flexibility, speed of action, innovativeness, and closeness in customer relationship. Regarding marketing aspect, SMEs tend to adopt marketing strategies and marketing communication activities that are suitable for their characteristics and constraints. Huge attention is paid to online media especially social network sites. SMEs nowadays also focus more on brand building and brand management. Their brand identity often stems from firm owners' personalities, product characteristics, brand symbols plus organization culture. A wide range of brand communication activities is practised. However, there is no systematic mean to measure SME brand performance.

Theories and concepts related to brand equity

A brand is known, for a long time, as a name, term, sign, symbol or design, or a combination of these, that identifies the goods or services of one business or group of businesses and differentiates them from those of the competition (American Marketing Association). However, the meaning of brands is much more than this. A

brand is a promise that a company makes to its customers, of what it is going to deliver (Campbell, 2002). Hence, a brand is not just a mark that separates products of one business from the rest, but it possesses certain associations which can create various meanings to consumers according to their experiences with that brand (Seetharaman, Nadzir, & Gunalan, 2001). Due to their imposing importance, brands become essential for today's businesses, and strong brands are the most successful products across a wide range of product categories (Campbell, 2002).

To assist the practices of building a great brand, the concept of brand equity emerged in the early 1990s (Barwise, 1993), and it is now widely adopted as a blueprint for brand building and management (Rios & Riquelme, 2008). As such, this study utilizes the notion of brand equity to measure SMEs' brand performance. In this section, an extensive literature review includes definitions and perspectives of brand equity as well as the previous studies on the brand equity measurement.

Definitions and perspectives of brand equity

Although there is no universal meaning of brand equity, the literature indicates some consensus in its fundamental principles that brand equity represents the added value endowed by a brand to a product as a result of prior investments in the marketing activities for that brand (Broniarczyk & Alba, 1994; Farquhar, 1989). Similarly, Lassar, Mittal, and Sharma (1995) noted five characteristics of brand equity with emphasis on the details of its value that 1) brand equity should refer to consumer perceptions. Moreover, 2) it means the overall value of a brand 3) which emerged not only from the brand's physical attributes but also the brand name. 4) Brand equity, in addition, is not absolute but relative to comparison. Lastly, 5) brand

equity has a positive influence on the financial performance because strong brand equity leads to opportunities for brand extensions, resistance to the promotional efforts of rival brands as well as setting up the barriers against the newcomers (Farquhar, 1989).

Besides its monetary value, brand equity is also interpreted in the form of favorable impressions, attitudinal dispositions, and behavioral predilections of present and potential customers as well as others in purchasing process (Rangaswamy, Burke, & Oliva, 1993). This idea is congruent with the classification of brand equity's meanings, provided by Feldwick (1996), as the total value of a brand as a separate asset when being sold; a measure of the degree of consumers' brand attachment; and a description of the associations and consumers' belief about a brand.

Feldwick's (1996) categories of brand equity's definitions reflect the two dominant *perspectives of brand equity*. To be more precise, the brand equity's meanings focusing on the value of a brand when it is sold represents the financial standpoint, while the consumer perspective defines brand equity as the strength of consumers' attachment to a brand as well as brand associations and belief about a brand stemming from consumer perceptions.

According to the literature on brand evaluation, *The financial-based brand equity* methods tend to draw upon the firm's financial performance to estimate the value of a brand for accounting, merger, acquisition or divestiture purposes (Smith, Gradojevic, & Irwin, 2007). The financial criteria for this view of brand equity assessment involve the cost of brand development, the market value when a brand being sold, and the future net profits associated with a brand subtracting from its present value (Seetharaman et al., 2001).

However, the financial value of brand equity is subsequently derived from consumer responses to a brand (Christodoulides & de Chernatony, 2010).

Furthermore, Keller (1993) stated the weak point of financial-based brand evaluation that this technique might have little relevance to the effectiveness of brand development strategies as the firm's profits probably result from short-term promotional activities. *The customer-based brand equity*, therefore, arises from the need of managers in seeking ways to increase the efficiency of their branding costs.

To make better strategic decisions about the target market selection as well as brand positioning, the thorough understanding of consumer behavior is a prerequisite (Keller, 1993). As a consequence, consumer-based perspective is grounded on consumers' perception, attitudes, and behavioral intention (Aaker, 1991; Christodoulides & de Chernatony, 2010; Keller, 1993). For this view, brand equity is assessed from the consumer responses to a brand's marketing activities that result from that brand's previous investment in marketing programs (Keller, 1993). In other words, the brand equity measurement should include non-financial criteria, such as consumer loyalty (Aaker, 1991) and brand awareness (Keller, 1993; Veloutsou & McAlonan, 2012) because, unlike financial measures, these intangible brand assets help improve long-term business performance (Collins & Porras, 2000).

Despite the controversial thoughts of the two major perspectives, some scholars adopted a wider view of brand equity by combining the consumer-based with financial-based perspective (M'Zungu, Merrilees, & Miller, 2010), as they claimed that these different standpoints are complementary to each other (Hatch & Schultz, 2010).

Since most SMEs have no systematic financial records (Blackburn et al., 2013), this study, however, relies merely on consumer-based brand evaluation. Moreover, SME owners are able to collect the data directly from their customers (Gilmore et al., 1999) through face-to-face interaction (Mowle & Merrilees, 2005). Mitchell et al. (2015) also pointed out that brand equity of retail SMEs is co-produced by consumers as they interact with components of the retail process. Therefore, the consumer-based perspective of brand equity is suitable for measuring brand performance within the SME context. Subsequently, the following topics of this section are oriented towards consumer-based brand equity's conceptual and operational definitions as well as previous research related to its measurement.

Conceptual and operational definition of consumer-based brand equity

The literature review conducted in the previous section informs us that brand equity can be assessed from the perspective of individual consumers (Aaker 1991; Keller, 1993). According to the basic premise of consumer-based brand equity, the brand value lies in consumers' perception of the brand gradually developing over time from their brand experience. So, to make customers respond more positively to the brand's marketing activities, it is necessary for the academics and practitioners to conceptualize, measure, and manage the equity of the brand with great concern for their customers.

Owing to the importance of consumer-based brand equity and the needs of the SME entrepreneurs for the systematic brand evaluation, this study takes the consumer-perspective brand equity to develop the measurement model of SME brand

performance, and this section will be devoted to the analysis of the conceptualization of consumer-based brand equity following by its operational definitions.

Before anything else, it should be noted that this study aims to develop a valid and generalizable measurement model of consumer-based brand equity for SMEs as well as to put forward the theory pertaining to consumer-based brand equity measurement. As such, the extensive review of its conceptual and operational definitions is undertaken here for two main purposes which are: 1) To identify the common cores of consumer-based brand equity's theoretical and operational definitions; and 2) To discover the knowledge gap regarding brand equity constructs needed to be fulfilled.

To analyze the conceptual and operational definitions of consumer-based brand equity, the researcher begins the process by collecting relevant articles in academic journals provided by multiple databases including ABI/INFORM Complete, JSTOR, ScienceDirect, Scopus, Taylor & Francis Journals, and Web of Science. Keywords used for searching are consumer/customer-based brand equity, concept, operation, and measurement. Next, this section will discuss details of the conceptualization of consumer-based brand equity following by its operational definitions. The summary tables of consumer-based brand equity's dimensions and several interesting issues emerged from the literature will also be presented.

Conceptual definitions of consumer-based brand equity

To conceptualize a variable means the process of specifying its meaning in words to facilitate the understanding of an abstract idea (Bernard, 2013). Since its debut in the late 1980s, consumer-based brand equity is explained in various concepts. To date, there is no agreement within the academic community on a general definition

of consumer-based brand equity (Nebojsa, 2013). Despite its wide variety, this study can categorize brand equity's conceptual definitions into two main streams which are the ones conceptualized for general purposes and the context-specific terms of consumer-based brand equity, hence, these two groups of definitions will be discussed here, respectively.

At the beginning of its history, most *conceptual definitions of consumer-based brand equity were proposed in general terms* claimed to be suitable for every business in the marketplace. In the 1990s, academicians conceptualized brand equity in a variety of ways. Despite different opinions, there was some agreement that brand equity is a multi-dimensional concept (e.g., Aaker, 1991; Blackston, 1992; 1995; Farquhar, 1989; Keller, 1993; Lassar et al., 1995). Only a few scholars that defined brand equity as a unidimensional construct such as Park and Srinivasan (1994) who referred to brand equity from the individual perspective as the incremental preference generated from a brand and successively conveyed to its product as perceived by an individual consumer.

Among multi-dimensional definitions of brand equity, many academicians focus on an individual consumer's brand perception and evaluation of brand attributes. To illustrate, Farquhar (1989) proposed that brand equity should result from 1) the consumer perception of the consistent brand image, 2) the accessible brand attitude or how easily an individual can recall something about a brand, and 3) the positive brand evaluation or when a consumer has positive brand thoughts and feelings that might turn to his intention to do something favorable for a brand.

Blackston (1995) also postulated that brand equity or brand meaning occurs when consumers are well aware of a brand and perceive that a brand possesses

valuable characteristics or positive brand associations. Blackston's (1995) opinion, however, differed from Farquhar's (1989) in his suggestion that the high equity brand should have human characteristics or brand personality that fits for its consumers.

Meanwhile, Lassar et al. (1995) defined brand equity as a five-factor model consisting of 1) brand image or a brand's attributes in consumers' perception, 2) positive feelings toward a brand, 3) desired performance or the proper functions of a brand, 4) perceived value or the brand usefulness when comparing to its costs as perceived by the consumer, and 5) the consumer's trustworthiness in the firm and its communications.

Besides an individual consumer's perception and evaluation of brand qualities, Blackston (1992) and Biel (1997) extended the notion of brand equity to the area of the brand-customer relationship management. To be more precise, Blackston (1992) stated that an individual consumer is an active participant in the process of brand equity creation. Therefore, a brand should preserve the healthy relationship with their consumers by maintaining customers' satisfaction and trust in a brand. This definition is similar to brand equity conceptualized by Biel (1997) in the aspect that not just the brand image but the quality of the brand-consumer relationship is also the primary source of brand equity.

When comparing to all conceptual definitions of brand equity proposing for all types of business, Aaker's (1991) and Keller's (1993) conceptualization are the most well-known and commonly referred to in this research area (Anselmson, Johansson, & Persson, 2007; Baalbaki & Guzmán, 2016).

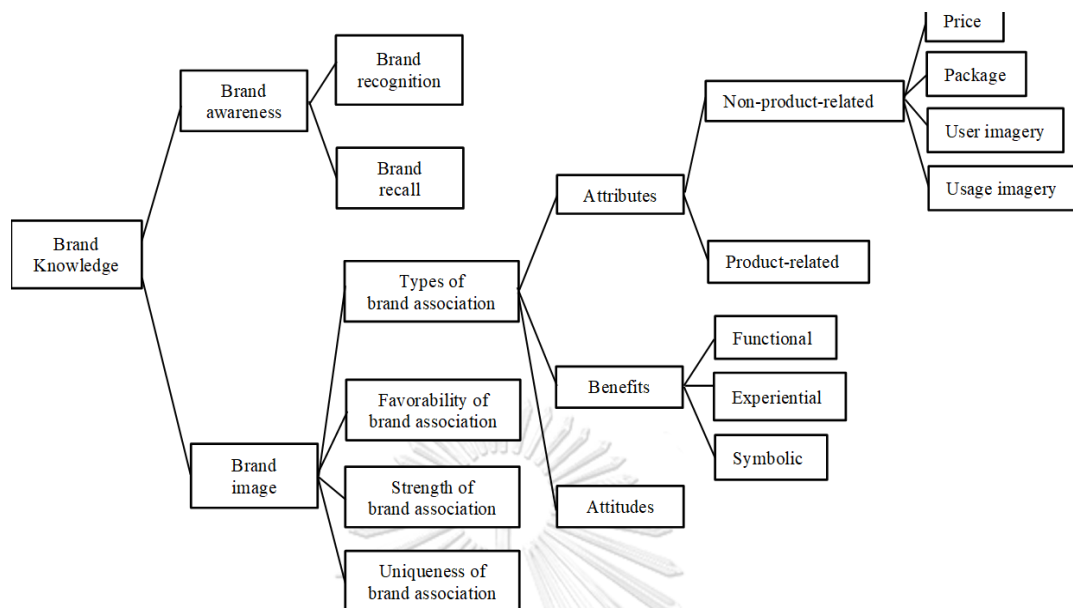
According to Aaker (1991), brand equity means a set of brand assets and liabilities linked to a brand, its name, and symbol that add to or reduce the value

provided by a product or service to a firm/or to that firm's customers. Although the brand assets and reliabilities might vary according to the characteristics of each business, Aaker (1991) grouped them into five components including brand loyalty, brand awareness, perceived quality, brand associations, and other proprietary assets, e.g., trademarks, patents, and channel relationship.

On the other side, Keller (1993) defined brand equity as the differential effect of brand knowledge on consumer response to the brand's marketing. Brand knowledge or the source of brand equity in Keller's (1993) perspective is, in turn, referred to as a composition of brand awareness and brand image or consumers' perception of brand associations.

Considering the dimensions of brand equity of Aaker (1991) and Keller (1993), both views underline the importance of brand awareness and brand associations. However, Keller (1993) did not take the perceived quality dimension into account and treated brand loyalty as an outcome rather than a dimension of brand equity. Another primary difference is that Keller (1993) focus more strongly on consumer's knowledge structure as can be seen in his comprehensive conceptual framework of customer-based brand equity.

Figure 2.1: Structure of brand knowledge

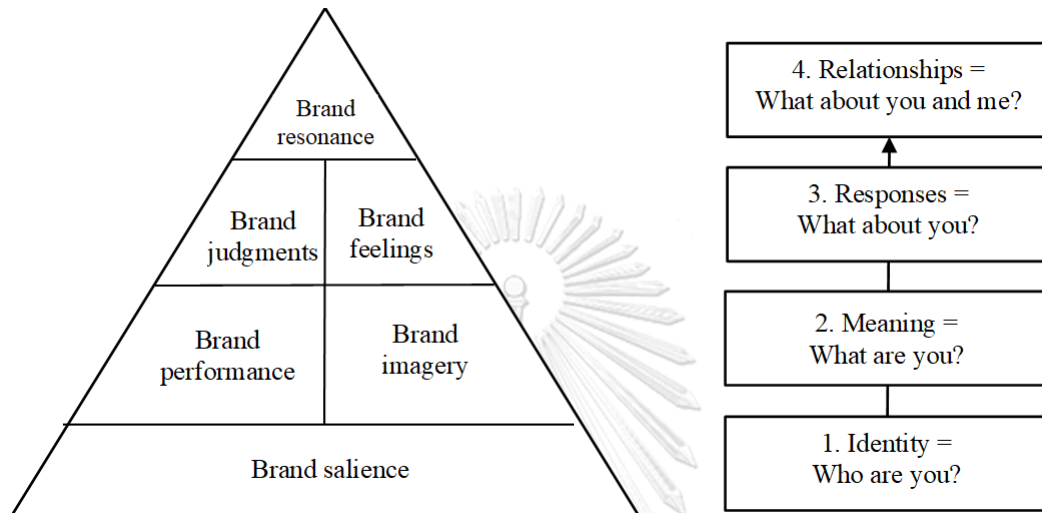


Source: Keller, K. L. (1993). Conceptualizing, measuring, and managing customer-based brand equity. *Journal of Marketing*, 57, p. 7.

According to the diagram of Keller's (1993) brand knowledge illustrated in Figure 2.1., two principal components comprise of brand awareness and image. Brand awareness is reflected by 1) brand recognition or the ability of consumers to identify a brand after prior exposure and 2) brand recall which is the ability of consumers to retrieve a brand from their memories when given a cue, such as the product category or the needs met by that category. Another vital part of brand knowledge or brand image is referred to as consumers' overall brand perception which is reflected by brand associations preserved in each consumer's memory. Types of brand associations include product-related and non-product-related attributes, functional, symbolic or experiential benefits and attitudes. These associations vary in their strength, favorability, and uniqueness (Keller, 1993). Later, Keller (2001) further

expanded his idea of customer-based brand equity by presenting four steps for building a strong brand (see Figure 2.2).

Figure 2.2: Pyramid of consumer-based brand equity



Source: Keller, K. L. (2001). *Building customer-based brand equity: A blueprint for creating a strong brand*. Retrieved September 3, 2017 from <http://mktg.uni-svishtov.bg/ivm/resources/customerbasedbrandequitymodel.pdf>

Business has to successively accomplish the tasks of each stage including establishing the proper *brand identity*, creating the appropriate *brand meaning*, eliciting the right *brand responses*, and forging appropriate *brand relationships* with customers. These four steps are divided into six blocks of brand equity building named brand salience, brand performance, brand imagery, brand judgments, brand feelings, and brand resonance.

As shown in Figure 2.3, brand salience is necessary for the creation of brand identity. *Brand salience* is associated with brand awareness of consumers. Then, *brand meaning* should be formed. This process relates to brand image or the second aspect of brand knowledge. Keller (2001) divided brand meaning into *brand performance* referring to the fundamental functions of product or service that fulfill consumers' primary need and *brand imagery*, or the extrinsic product attributes that meet customers' abstract psychological or social needs. After that, consumers' *brand responses* including brand judgments and brand feelings should be stimulated. *Brand judgments* focus on customers' opinions about the brand based on their different brand performance and brand imagery associations, while *brand feelings* describe the customers' emotional feedback to the brand. Top of the pyramid is the most valuable building block called *brand resonance* or the psychological and behavioral loyalty that customers have with a brand. This step will occur through the process of the customer-brand relationship building and when all other branding blocks are achieved completely.

Recently, there is some effort to reconcile Aaker's (1991) and Keller's (1993) conceptual frameworks of consumer-based brand equity. Concentrating on brand association which is the common aspect of the two great concepts, Vázquez, Ríó, and Iglesias (2002) defined brand equity as the overall utilities that consumers relate to the brand characterized by associations reflecting both functional and symbolic benefits of that brand. Netemeyer et al. (2004), in contrast, conceptualized brand equity by combining all aspects of both well-known models. Since the brand associations and perceived quality are the core facets of Keller's (1993) and Aaker's (1991) models

respectively, Netemeyer et al. (2004) concluded that brand equity should contain eight dimensions regarding organizational association, brand popularity, brand uniqueness, brand-image consistency, brand awareness, perceived quality, perceived brand value for the cost, and willingness to pay a price premium.

To date, Baalbaki and Guzmán (2016) compared and contrasted several definitions of brand equity including Aaker's (1991), Keller's (1993) as well as other conceptual frameworks. They finally contended that brand equity should be reflected by perceived quality, brand preference, perceived value, and also proposed a new dimension called sustainability, described as the awareness of consumers on a brand's responsibilities for health, environment, and safety.

Besides general conceptualization of brand equity, numerous researchers proposed *definitions of brand equity for particular settings* including specific business type as well as cultural aspect and demographic segmentation. Prior literature indicated that brand equity was studied extensively in all business domains which are, according to Ha and James (1998), categorized into three sectors consisting of manufacture, service, and trade. For *manufacture industry* or businesses that produce tangible goods (Ha & James, 1998), brand equity for a winery was conceptualized by Orth, Wolf, and Dodd (2005) as a competitive brand asset developed over time. It is a combination of components, such as brand loyalty, brand awareness, perceived quality, brand image, and attitudes toward the company and its wine.

Within *the service setting* or business sectors that provide customers more abstract products (Ha & James, 1998), brand equity has been extensively studied in the context of several services. To illustrate, Gladden, Mile, and William (1998) conceptualized brand equity for assessing the brand equity for college sport. Four

main components of brand equity in sports context consist of perceived quality, brand awareness, brand associations, and brand loyalty. On the other hand, Ross (2006) focused more on brand awareness and brand associations. He contended that these two dimensions are necessary for value creation among sports team brands. Bauer, Sauer, and Schmitt (2005) similarly conceptualized brand equity for the team sports industry by highlighting the importance of brand awareness as well as two types of brand associations—brand attribute and brand benefit.

Not only in sport and leisure business, but also in hotel and restaurant service flourishes the brand equity research. W. Kim, Sun, and H. Kim (2009) referred to the brand equity for midpriced hotels as the combination of brand awareness, brand associations, perceived quality, and brand loyalty. Hsu, Oh, and Assaf (2012), moreover, conceptualized brand equity within the context of luxurious hotels by retaining the core dimensions which are brand awareness, brand image, and perceived quality, plus the two more components including management trust and brand reliability. These additional facets of brand equity revolved around certainty or assurance in product and service that customers will receive from the upscale hotel. Within the context of the restaurant business, Tan, Ismail, and Rasiah (2011) similarly posited that brand equity should be defined as a composite of the critical dimensions, such as brand awareness, brand image, perceived quality, and brand loyalty following by brand familiarity and brand trust.

Service brand equity also includes the healthcare and medical cluster. In congruence with other service businesses, Chahal and Bala (2012) proposed brand equity for the healthcare sector with the concentration on brand image, brand loyalty, and perceived quality.

Besides selling several other brands, retailers are in need of building their own brands too. Jara and Cliquet's (2012) retail brand equity focused on five dimensions consisting of brand awareness, perceived quality, price image, brand service, as well as store service. Anselmson et al. (2007) also highlighted that grocery sectors could build their brand equity by focusing on brand uniqueness plus four basic dimensions including brand awareness, perceived quality, brand association, and brand loyalty.

Brand equity, furthermore, exists in the area of *online business*. Rios and Riquelme (2010) posited that online brand equity should be conceptualized multidimensionally as brand awareness and recognition, brand loyalty, brand associations, and trust.

Meanwhile, scholars put their effort into the conceptualization of the global brand equity that transcends cultural boundaries. Atilgan et al. (2009) dwelled on the standard brand equity dimensions like brand awareness, brand associations, perceived quality, brand loyalty, and brand trust. On the other hand, Wang, Wei, and Yu (2008) proposed the conceptual definition of global brand equity by introducing the mixture of the traditional facets like brand awareness and perceived quality with the novel concepts including corporate ability association and brand resonance.

Interestingly, research on brand equity now expands its scale and scope to capture the specific target consumers differing in their demographic characteristics. For example, E.Y. Kim et al. (2009) conceptualized brand equity based on the perspective of generation Y consumers by underlining the importance of three dimensions-perceived quality, prestigious image, and emotional value. All conceptual definitions discussed here are summarized in Table 2.2.

Table 2.2: Studies indicating conceptual definitions of general and context-specific (written in italics) consumer-based brand equity

Dimensions	Farquhar (1989)	Aaker (1991)	Blackston (1992)	Keller (1993)	Park & Srinivasan (1994)	Blackston (1995)	Lassar et al. (1995)	Biel (1997)	Gladden et al. (1998)	Keller (2001)	Vázquez et al. (2002)	Netemeyer et al. (2004)	Bauer et al. (2005)	Orth et al. (2005)	Ross (2006)	Anselmson et al. (2007)	Wang et al. (2008)	W.G. Kim et al. (2008)	Atilgan et al. (2009)	E.Y. Kim et al. (2009)	Rios & Riquelme (2010)	Xu & Chan (2010)	Tan et al. (2011)	Chahal & Bala (2012)	Hsu et al. (2012)	Jara & Cliquet (2012)	Kumar et al. (2013)	Balbakri & Guzman (2016)
Brand awareness		X		X		X			X				X						X				X					
Brand image/associations		X		X		X	X	X	X		X				X		X	X	X	X	X	X	X	X	X	X	X	
Perceived quality		X							X			X					X	X	X	X	X	X	X	X	X	X	X	X
Brand loyalty		X							X								X	X	X	X	X	X	X	X	X	X	X	X
Brand trust			X																	X	X	X	X	X	X	X	X	X
Brand-image consistency	X											X																
Brand familiarity																							X					
(Brand) feelings							X			X																		
Performance							X			X																		
Brand personality		X																								X		

Table 2.2:--continued.

Concepts	Farquhar (1989)	Aaker (1991)	Blackston (1992)	Keller (1993)	Park & Srinivasan (1994)	Blackston (1995)	Lassar et al. (1995)	Biel (1997)	Gladde et al. (1998)	Keller (2001)	Vázquez et al. (2002)	Netemeyer et al. (2004)	Bauer et al. (2005)	Orth et al. (2005)	Ross (2006)	Anselmson et al. (2007)	Wang et al. (2008)	W. G. Kim et al. (2008)	Atilgan et al. (2009)	E. Y. Kim et al. (2009)	Rios & Riquelme (2010)	Xu & Chan (2010)	Tan et al. (2011)	Chahal & Bala (2012)	Hsu et al. (2012)	Jara & Cliquet (2012)	Kumar et al. (2013)	Baahbaki & Guzman (2016)	
Organizational association												X																	
Perceived value												X																	
Prestigious image																		X											
Price image																										X			
Quality of experience																													
Store service																										X			
Sustainability																													X
Trustworthiness							X																						
Willingness to pay a price premium												X																	
Other brand assets		X																											

Operational definitions of consumer-based brand equity

In addition to conceptualization, another way to define a variable is to give it the operational definition or a set of instructions on how to measure the variable having been conceptually defined (Bernard, 2013). According to Keller (1993), consumer-based brand equity can be operated or measured by following the direct or indirect approaches. *The direct approach* measures brand equity directly by assessing the actual impact of brand knowledge on consumer response to different marketing elements of the firm. Examples of the direct approach are the brand equity measurement based on financial or marketing advantages such as revenue premium (Ailawadi, Lehmann, & Neslin, 2003), price premium (Randall, Ulrich, & Reibstein, 1998), and extendibility of the brand (Randall et al., 1998). *The indirect approach*, on the other hand, assesses consumer-based brand equity by measuring its potential sources, such as consumer's brand knowledge structures in terms of brand awareness, brand image (Keller, 1993) brand identity, meaning, responses and relationships (Keller, 2013). In other words, the indirect approach takes an overall picture of the brand and measure its equity through its demonstrable dimensions. Although these two approaches of measurement should be used complementarily (Keller, 2013), this study discusses only the studies that adopted the indirect method to develop their brand equity scales. As most SMEs, due to the lack of systematic accounting records (Blackburn et al., 2013), cannot use financial outcomes to directly assess their brand equity. This section subsequently summarized the dimensions of operational definitions based on the indirect approach measurement in Table 2.3. Some observations regarding their characteristics are also discussed.

Table 2.3:--continued.

Dimensions	Lassar et al. (1995)	Yoo & Donthu (2001)	Vázquez et al. (2002)	Netemeyer et al. (2004)	Bauer et al. (2005)	Pappu et al. (2005)	Wang et al. (2008)	W.G. Kim et al. (2008)	Atilgan et al. (2009)	E. Y. Kim et al. (2009)	Tong & Hawley (2009)	Aziz & Yasin (2010)	Ha et al. (2010)	Rios & Riquelme (2010)	Chahal & Bala (2012)	Hsu et al. (2012)	Jara & Clignet (2012)	Buil et al. (2013)	Kumar et al. (2013)	Khan et al. (2015)	Baalbaki & Guzmán (2016)	
Emotional value										X												
Brand salience												X										
Brand resonance												X										
Brand judgments												X										
Satisfaction													X									
Management trust																X						
Brand reliability																X						
Social influence																X						X
Brand preference																						X
Sustainability																						X

Table 2.3:--continued.

Dimensions	Lassar et al. (1995)	Yoo & Donthu (2001)	Vázquez et al. (2002)	Netemeyer et al. (2004)	Bauer et al. (2005)	Pappu et al. (2005)	Wang et al. (2008)	W.G. Kim et al. (2008)	Atilgan et al. (2009)	E. Y. Kim et al. (2009)	Tong & Hawley (2009)	Aziz & Yasin (2010)	Ha et al. (2010)	Rios & Riquelme (2010)	Chahal & Bala (2012)	Hsu et al. (2012)	Jara & Cliquet (2012)	Buil et al. (2013)	Kumar et al. (2013)	Khan et al. (2015)	Baalbaki & Guzmán (2016)
Price image																	X				
Brand service																	X				
Store service																	X				
Personalities																	X				

According to Table 2.3, three dimensions of brand equity most operationalized were brand awareness, brand image/ associations, and perceived quality. Comparing to conceptual definitions shown in Table 2.2, there are fewer studies that defined brand equity operationally. Many of them, according to Table 2.2 and Table 2.3, addressed both conceptual and operational meaning by developing and validating scale to measure brand equity for all business types (e.g., Lassar et al., 1995; Netemeyer et al., 2004; Vázquez et al., 2002) and to use in specific contexts (e.g., Atilgan et al., 2009; Bauer et al., 2005; Kumar et al., 2013).

However, several researchers, for example, Blackston (1995), Biel (1997), and Farquhar (1989), proposed only the conceptual definition of brand equity. Even the two most influential conceptualizations of brand equity, Aaker's (1991) and Keller's (1993), were never operationalized a scale for measurement by their researchers.

As a consequence, Some studies empirically measured brand equity based on the existing concepts such as Aaker's (1991) and Keller's (1993). To illustrate, Yoo and Donthu (2001) operationalized brand equity scale drawn on the conceptual definitions of Aaker (1991) and Keller (1993). Their findings showed that brand equity should be operated as a tridimensional structure consisting of brand awareness/associations brand loyalty, and perceived quality. In contrary to Yoo and Donthu (2001), Buil, Martinez, and de Chernatony (2013) found the empirical evidence to support that brand awareness and brand associations should be treated as two separate constructs. This result is similar to what Pappu, Quester, and Cooksey (2005) found in the aspect that brand equity is a multidimensional construct including brand awareness, brand associations, perceived quality and brand loyalty.

The debate on how to measure brand equity derived from the two well-known conceptualizations is still going on. However, little interest goes to the conceptual definition postulated by Keller (2001). Until now, there is only the study of Aziz and Yasin (2010) that attempted to empirically test the six blocks of brand equity building. The result found that except for brand meaning, all dimensions including brand salience, brand performance, brand judgments, brand feelings and brand resonance are the determinants of brand equity in Malaysian banking services.

All studies on brand equity operationalization mentioned above, despite the difference in brand equity construct, agreed to measure brand equity by adopting Likert-type-scales anchoring from strongly agree to disagree. The two-thirds of scale ranges used are five-point scales (e.g., Chahal & Bala, 2012; Jara & Cliquet, 2012; Khan et al., 2015; Tong & Hawley, 2009; Wang et al., 2008). Still, some researchers measured brand equity with seven- (Bauer et al., 2005; Rios & Riquelme, 2010) nine- (Atilgan et al., 2009) and eleven-point scales (Pappu et al., 2005).

More details on the measurement method will be elaborated further in the topic about previous studies on consumer-based brand equity, right after the discussion of interesting issues regarding the conceptual and operational definition of brand equity.

Previous studies on consumer-based brand equity measurement

Research relating to the measurement of brand equity employed several interesting techniques that might be useful for designing the current study. Hence, this section will begin with the summary of the information about prior research in Table 2.4. Later, the researcher will discuss more on details of each aspect regarding model

characteristics, business and brand selection, research methods and data collection techniques, analytical statistics, as well as the other variables examined in the model of consumer-based brand equity.



Table 2.4: Previous studies on the measurement of consumer-based brand equity

Researcher(s)	Model characteristics	Research methods	Business/ brand selection	Analytical statistics	Other variable(s) examined
Lassar et al. (1995)	Second-order factor model based on 5 dimensions: Value Performance Image Feelings Trustworthiness	Qualitative: Interview for item generation Quantitative: Survey with consumers	Manufacture: Television (Sony, RCA, Goldstar) and Watch (Seiko, Bullova, Timex)	Exploratory Factor Analysis Confirmatory Factor Analysis	Dependent variable (Market price)
Yoo & Donthu (2001)	Second-order factor model based on 3 dimensions: Brand loyalty Perceived quality Brand awareness/ associations Competing models: One and four dimensional	Qualitative: Survey (multi-stage study with American and Korean students)	Manufacture: Athletic shoes (Adidas, Asics, L.A Gear, Nike Puma, Reebok) Camera film (Agfa, Fuji, Kodak, Konica) and Television (Samsung, Sony)	Exploratory Factor Analysis Confirmatory Factor Analysis Invariance Test Individual-level Multicultural Factor Analysis	Variables affecting CBBE level (Product category involvement Purchase experience)
Vázquez et al. (2002)	Second-order factor model of CBBE based on 4 dimensions of brand associations: Product functional utility Brand symbolic utility Brand name functional utility Brand name symbolic utility	Qualitative: Interview for brand assessments Quantitative: Survey with consumers	Manufacture: Non-specialised sports shoes (Adidas, Fila, Kelme, J'hayber, Nike, Reebok)	Confirmatory factor analysis	Dependent variables (Price premium Recommendation)

Table 2.4:--continued

Researcher(s)	Model characteristics	Research methods	Business/ brand selection	Analytical statistics	Other variable(s) examined
Netemeyer et al. (2004)	Causal model with relationship between dimensions: Willingness to pay a price premium Perceived quality Perceived value for the cost Brand uniqueness Brand awareness Familiarity Popularity Organizational associations Brand image consistency	Qualitative: Focus group of consumers of various ages and ethnic groups Expert item judging Quantitative: Survey with consumers pooled by students	Manufacture: Cola (Coca-Cola, Pepsi, RC Cola) Toothpaste (Crest, Colgate, Close-up) Athletic shoes (Nike, Reebok, Fila) Jeans (Levi's, Lee, Wrangler)	Confirmatory Factor Analysis	Dependent variable (Brand purchase intention)
Bauer et al. (2005)	Second-order factor model based on 3 dimensions: Brand awareness, Brand attribute, Brand benefits	Quantitative: Survey (Online)	Service: Sports team (German soccer league 18 teams Bundesliga)	Exploratory and Confirmatory factor analyses (including multi-group analysis) Structural Equation Modeling	
Pappu et al. (2005)	Causal model with relationship between dimensions: Brand awareness Brand associations Perceived quality Brand loyalty	Quantitative: Survey with consumers in shopping mall	Manufacture: Car (Toyota, Mitsubishi, Suzuki) Television (Sony, Hitachi, Toshiba)	Structural Equations Modeling	

Table 2.4:--continued.

Researcher(s)	Model characteristics	Research methods	Business/ brand selection	Analytical statistics	Other variable(s) examined
Wang et al. (2008)	Causal model with relationship between dimensions: Corporate ability association Quality perception Brand awareness Brand resonance	Qualitative: Focus group (Word association Card sorting Storytelling) Content analysis Quantitative: Telephone survey	Manufacture: Shampoo (Pantene, Shulei) Television (Sony, Konkia) Hi-Tech product (Dell, Lenovo, IBM)	Structural Equations Modeling	Dependent variables (Brand extensibility Price flexibility Repurchase intention)
W.G. Kim et al. (2008)	Second-order factor model based on 3 dimensions: Brand loyalty Perceived quality Brand awareness/associations Competing model: four dimensional	Quantitative: Survey with travellers in the airports	Service: Mid-price hotel (Holiday Inn, Best Western, Ramada, Quality Inn, Howard Johnson, Four Points)	Confirmatory Factor Analysis Structural Equations Modeling	Dependent variables (Perceived value Revisit intention)
Atilgan et al. (2009)	Second-order factor model based on 4 dimensions: Brand associations Brand trust Perceived quality Brand loyalty	Quantitative: Survey with consumers in shopping malls	Manufacture: Soft drink (Coca-Cola) Service: Fast food restaurant (McDonald's)	Confirmatory Factor Analysis Invariance measurement	

Table 2.4:--continued.

Researcher(s)	Model characteristics	Research methods	Business/ brand selection	Analytical statistics	Other variable(s) examined
E. Y. Kim et al. (2009)	Causal model with relationship between dimensions: Brand awareness Perceived quality Prestigious image Emotional value	Quantitative: Survey with gen Y consumers (College students)	Manufacture: Fashion cloth (Polo Ralph Lauren)	Structural Equations Modeling	Dependent variable (Purchase intention)
Tong & Hawley (2009)	Causal model of 4 dimensions: Brand association Brand loyalty Perceived quality Brand awareness	Quantitative: Survey with consumers aged 18 - 39	Manufacture: Sports shoes (Nike, Adidas, Reebok, Puma)	Structural Equations Modeling	
Aziz & Yasin (2010)	Second-order factor model based on 6 dimensions: Brand salience, Brand performance, Brand judgments, Brand feelings, Brand meaning Brand resonance	Quantitative: Survey with consumers	Service: Various commercial banks in Malaysia	Exploratory Factor Analysis	

Table 2.4:--continued

Researcher(s)	Model characteristics	Research methods	Business/ brand selection	Analytical statistics	Other variable(s) examined
Hsu et al. (2012)	Causal model with relationship between dimensions of Perceived quality, Brand awareness, Brand image, Management trust, Brand reliability, Brand loyalty	Qualitative: Focus group Expert reviews Quantitative: Survey with consumers	Service: Bank (First Bank, Shinhan Bank, Hanmi Bank, CHB, Citi-Bank) Discount store (Lotte, E-mart, Home-Plus (Tesco Lotus), Hanaro Mart)	Structural Equations Modeling	
Jara & Cliquet (2012)	Causal model with relationship between dimensions of Perceived quality, Brand awareness, Price image, Personalities, Brand service, Store service	Qualitative: Interview Quantitative: Survey with consumers in the age of under 30, 30-50, over 50 years	Trade: Retailer (Carrefour, E.Leclerc, Intermarche)	Confirmatory Factor Analysis Structural Equations Modeling	Dependent variables (Brand choice Intention to buy)
Buil et al. (2013)	Causal model with relationship between dimensions of Brand awareness, Brand association, Perceived quality, Brand loyalty	Quantitative: Survey with consumers	Manufacture: Sportswear (Adidas, Nike) Electronics (Sony, Panasonic) Car (BMW, Volkswagen)	Structural Equations Modeling Multigroup Confirmatory Factor Analysis	Dependent variables (Price premium Brand extension Brand preference Purchase intention)

Table 2.4:--continued.

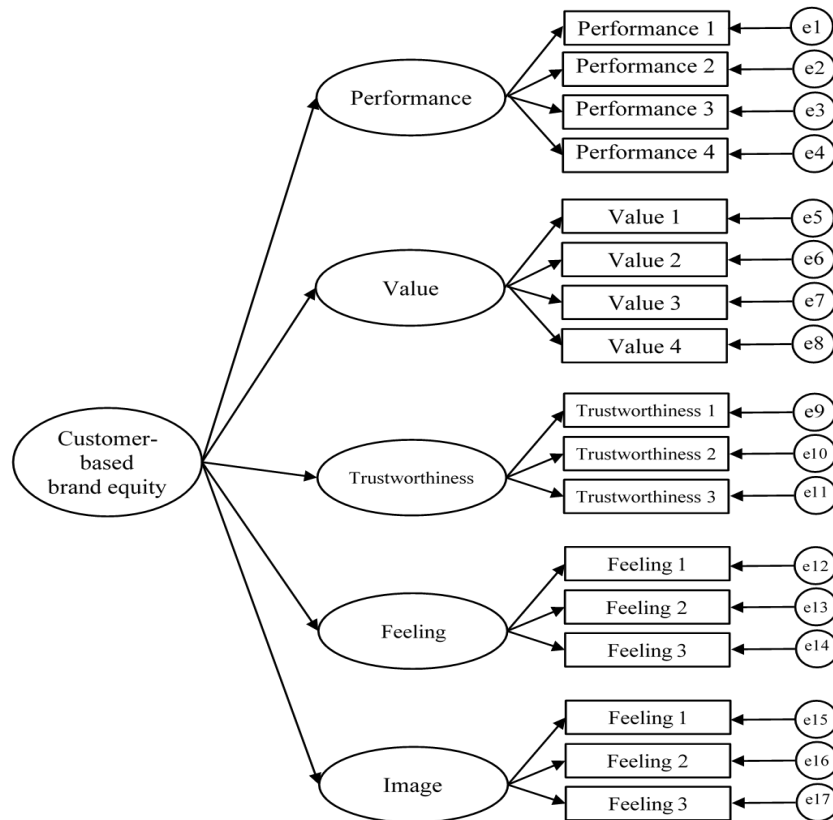
Researcher(s)	Model characteristics	Research methods	Business/ brand selection	Analytical statistics	Other variable(s) examined
Kumar et al. (2013)	Causal model with relationship between dimensions of Brand awareness, Brand associations, Perceived quality, Brand trust, Brand loyalty	Qualitative: Interview with stakeholders Quantitative: Survey with consumers	Service: Hospital (Unidentified)	Structural Equations Modeling	
Khan et al. (2015)	Causal model with relationship between dimensions of Perceived quality, Brand image, Brand loyalty	Quantitative: Survey with consumers in the age of 18-40 years	Manufacture: Fashion clothing (Padini, Zara, Calvin Klein, Gucci)	Exploratory Factor Analysis Multiple Regression Analysis	Dependent variables (Purchase intention)
Baalbaki & Guzmán (2016)	Second-order factor model based on 4 dimensions: Perceived quality, Social influence Brand preference, Sustainability	Qualitative: Interview with students and consumers Quantitative: Survey with students and consumers	Manufacture: Smart phone ((iPhone, BlackBerry, HTC)	Exploratory Factor Analysis Confirmatory Factor Analysis	

Characteristics of consumer-based brand equity model

According to Table 2.4, some agreement emerged in prior studies that brand equity should be treated as a multidimensional variable. However, the existing models of brand equity vary considerably in their components as well as modeling techniques. To date, three kinds of consumer-based brand equity model are distinguished—a second-order factor model, a causal model, and a causal model with relationships between dimensions.

Second-order factor model refers to the structure of measurement that specifies brand equity as a second-order latent variable. In other words, brand equity is a complicated variable reflected by other sub-components or the first-order latent variables (Veloutsou, Christodoulides & de Chernatony, 2013). Based on the conceptual definitions of brand equity proposed in the 1990s, many researchers adopted the second-order factor model to operationalize brand equity (Aziz & Yasin, 2010; Baalbaki & Guzmán, 2016; Lassar et al., 1995; Vázquez et al., 2002; Yoo & Donthu, 2001). As an example, Lassar et al. (1995) developed a customer-based brand equity scale based on the five underlying dimensions of brand equity including performance, value, image, trustworthiness, and feeling (see Figure 2.3).

Figure 2.3: Lassar's (1995) second-order factor model of brand equity

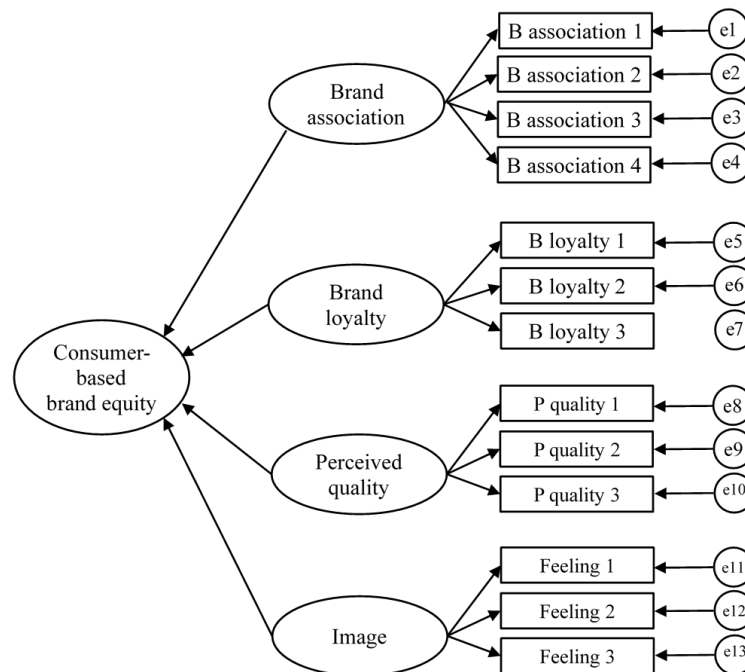


Source: Based on Lassar, W., Mittal, B., & Sharma, A. (1995). Measuring customer-based brand equity. *Journal of Consumer Marketing*, 12(4), 11-19.

While many researchers rely on the second-order factor model, some adopt the *causal model* to measure brand equity (Rios & Riquelme, 2010; Tong & Hawley, 2009). Veloutsou et al. (2013), moreover, pointed out that brand equity construct should be viewed as a formative, or a *causal model*, rather than a reflective measurement because it is nearly impossible for any brand to score highly on all dimensions of brand equity. Due to the different branding and marketing strategies, each brand should vary in the strength of brand equity dimensions. The first-order

latent variables, therefore, should form or cause brand equity, rather than reflect or appear to be caused by brand equity. To illustrate, Tong and Hawley (2009) proposed brand equity model shown in Figure 2.4. This measurement model depicted that brand equity is formed by four causes including brand association, brand loyalty, perceived quality, and brand awareness.

Figure 2.4: Tong and Hawley's (2009) causal model of brand equity

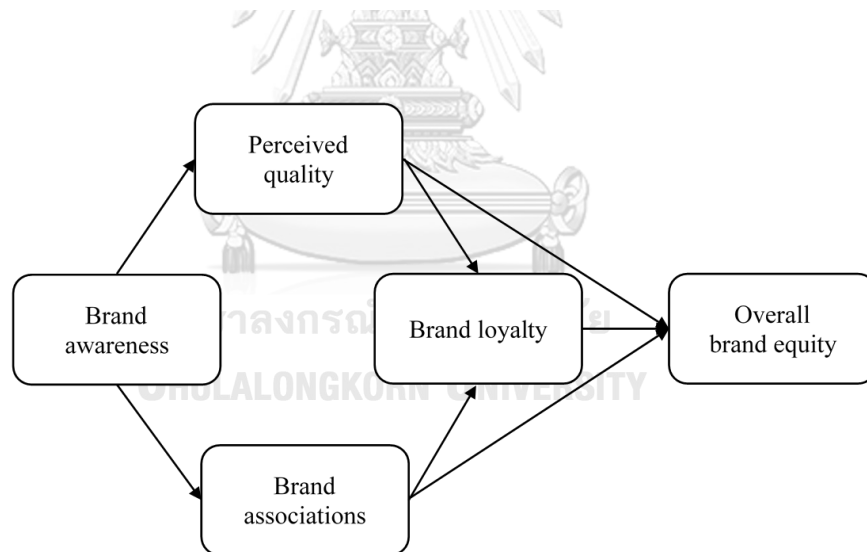


Source: Based on Tong, X., & Hawley, J. M. (2009). Creating brand equity in the Chinese clothing market. *Journal of Fashion Marketing and Management*, 13(4), p. 570.

The causal model of brand equity measurement is further developed to be *the causal model with relationships between dimensions*, as some studies have empirically examined how brand equity dimensions interrelate (Buil et al., 2013; Jara

& Cliquet, 2012; Khan et al., 2015; E. Kim et al., 2009; Wang et al., 2008). This type of measurement model is supported by some suggestions in the literature that brand equity's dimensions could have a potential causal order (Agarwal & Rao, 1996). To be more precise, these dimensions of brand equity possibly relate to each other hierarchically (Keller & Lehmann, 2006). An example of the empirical efforts is that Buil et al. (2013) tested the hierarchical relationships among the four brand equity dimensions including brand awareness, brand associations, perceived quality and brand loyalty (see Figure 2.5).

Figure 2.5: Buil et al.'s (2013) causal model with relationships between dimensions of brand equity



Source: Adapted from Buil, I., Martí'nez, E., & De Chernatony, L. (2013). The influence of brand equity on consumer responses. *Journal of Consumer Marketing*, 30(1), p. 64.

Among the three types of model mentioned earlier, some researchers proposed more than one version of the model. These alternative models were empirically tested to find the one that fits best with the theory. To validate the measurement model of brand equity, some researchers followed the model comparison approach by testing several *competing models* (Chahal & Bala, 2012; Ha et al., 2010; W. G. Kim et al. 2008; Yoo & Donthu, 2001). For instance, Yoo and Donthu (2001) proposed three sets of second-order measurement model consisting of one-, three-, and four-dimensional brand equity models. The findings indicated that the three-factor model (i.e., perceived quality, brand loyalty, and brand awareness/associations) was most consistent with the data.

In contrast to Yoo and Donthu (2001), some studies focus on the relationships, rather than the number of dimensions of brand equity (Chahal & Bala, 2012; Ha et al., 2010). As an example, the study of Chahal and Bala (2012) investigated four alternative models including one causal model and three causal models with various relationships between dimensions of brand associations, perceived quality, satisfaction, and brand loyalty.

Despite many forms of competing models discussed above, no researcher compares the effectiveness of all three kinds of brand equity model including the second-order factor model, causal model, and causal model with relationships between dimensions. This lack may be caused by the fact that the academic debate on the reflective and causal model is relatively new.

Research methods and data collection techniques for measuring brand equity

Based on Table 2.4, almost all researchers on the measurement of consumer-based brand equity adopt both quantitative and qualitative approach to design their

studies. To obtain qualitative data, they often conduct focus group (Hsu et al., 2012; Netemeyer et al., 2004; Wang et al., 2008) or interview (Jara & Cliquet, 2012; Kumar et al., 2013) or both with actual consumers (Chahal & Bala, 2012; Ha et al., 2010) or marketing students (Baalbaki & Guzmán, 2016). The qualitative research is undertaken for several purposes including to explore the nature of brand associations (Wang et al., 2008), to select product categories and brands for the main studies (Netemeyer et al., 2004), and to develop preliminary scales (Hsu et al., 2012).

It should be noted that qualitative techniques such as word association, card sorting, and storytelling are also utilized to probe into consumers' brand perception and evaluation (Wang et al., 2008). At the end of the qualitative data collection process, some researchers conduct qualitative content analysis to sort the information into dimensions of brand equity. Items for each dimension are subsequently generated (Netemeyer et al., 2004). Whereas some studies constantly borrow the existing scales from prior research (Atilgan et al., 2009; Bauer et al., 2005).

The researchers then perform the quantitative research or the heart of studies regarding brand equity measurement. Several surveys are conducted for developing brand equity scale and validating the measurement model. Almost all studies adopted field survey, while some studies utilized technology such as online (Bauer et al., 2005; Rios & Riquelme, 2010) and telephone survey (Wang et al., 2008). Self-administrated questionnaires are often distributed to actual consumers at the sites which consumption took places such as shopping malls (Atilgan et al., 2009; Pappu et al., 2005) and or crowded areas like airports (W. Kim et al., 2008). Interestingly, some studies let the persons who are not researchers, for example, college students (Netemeyer et al., 2004) to hand out the questionnaires to non-student participants.

Business and brand selection in the research on brand equity measurement

Table 2.4 showed that brand stimuli of previous studies are selected from all business sectors. To be more specific, brands of athletic shoes (Nike, Asics, Reebok by Tong and Hawley, 2009), soft drink (Coca-Cola, Pepsi by Netemeyer et al., 2004), and car (BMW, Volkswagen by Buil et al., 2013) represent the manufacturing industry. The brand of fast food restaurant like McDonald's (Atilgan et al., 2009) is chosen to measure brand equity within the service setting. For the trade companies, online retailer brands such as Amazon, eBay, and CDNow (Rios & Riquelme, 2010) are utilized to test the brand equity measurement model.

Although every type of business in the marketplace is selected for the brand equity evaluation, none of the researchers measure the brand equity across all business sectors within the same study--even those claiming to develop universal scales. Previous studies, furthermore, suggested several criteria for brand and product category selection. To be more precise, Wang et al. (2008) chose the reputable and established brands. Some researchers select the brand stimuli based on Interbrand's most valuable global brand ranking list (Atilgan et al. 2009; Buil et al. 2013). Therefore, it is possible to imply that SME brands have never been chosen to assess the brand equity.

Analytical statistics utilized in the studies regarding brand equity evaluation

Owing to its multidimensional nature of brand equity, brand equity measurement model is usually analyzed by Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), as well as Structural Equation Modelling (SEM) (see Table 2.4). To run a second-order factor model brand equity, the studies that develop their own scale such as Lassar et al.'s (1995) began to examine the set of

measurement items relating to each theoretical construct by Exploratory Factor Analysis. After the preliminary investigation, the remaining items were tested the discriminant validity by Confirmatory Factor Analysis. Meanwhile, many studies that adopted scales from prior research (e.g., Vázquez et al., 2002; Netemeyer et al., 2004) computed only Confirmatory Factor Analysis which is sufficient, in this condition, for examining the measurement structure and how well the data set fits the hypothesized (Hair et al., 2009). However, the construct validity was questioned in the case of Aziz and Yasin (2010), and Khan et al. (2015) which operationalized brand equity by using only Exploratory Factor Analysis.

For the causal model as well as the causal model with relationships between dimensions, Structural Equation Modelling is often employed for simultaneously assessing Confirmatory Factor Analysis and path analysis (Hair et al., 1998). However, Khan et al. (2015) analyzed the causal relationship between brand equity dimensions with Multiple Regression Analysis which might not be enough for testing the construct validity of the overall model (Hair et al., 1998).

Invariance measurement is performed by some studies that need to test the stability of the model across the samples, for instance, Buil et al. (2013) used multi-group confirmatory factor analysis to assess the invariance of data collecting from Korean and American participants.

Other variables examined in the research on brand equity measurement

Besides the structure of brand equity, some studies also examine variables related to consumer characteristics which influence the level of brand equity, such as Yoo and Donthu (2001) that concerned several variables regarding consumer behavior including product category involvement and purchase experience.

Moreover, to establish the nomological validity, some researchers examined dependent variables reflecting the branding advantages, such as market price (Lassar et al., 1995), price premium, and brand extension (Buil et al., 2013)

Lastly, some models also test the relationship between brand equity and groups of consumer response factors regarding attitudinal reaction and behavioral intention, such as brand preference (Buil et al., 2013) and brand purchase intention (Buil et al., 2013; E. Kim et al., 2009; Netemeyer et al., 2004).

Summary

To assist the practices of building a great brand, the concept of brand equity emerged in the early 1990s, and it is now widely adopted as a blueprint for brand building. Despite the lack of universal meaning, some consensus exists in the literature that brand equity represents the added value endowed by a brand to a product as a result of prior investments in the marketing activities for that brand management. This added value, according to the financial perspective of brand equity, should represent monetary advantages. However, the consumer perspective assesses brand equity from the consumer responses to a brand's marketing activities that result from that brand's previous investment in marketing programs. This study relies on the consumer-based brand equity since most SMEs have no systematic financial records, and they have more chance to collect the data directly from their customers through face-to-face interaction. To develop SME brand equity scale, the researcher conducted an extensive review regarding conceptual and operational definitions of brand equity. An interesting theoretical gap emerged from the prior literature in the aspect that many conceptual and operational definitions of brand equity are influenced by the two

commonly-adopted conceptualizations of Aaker's (1991) and Keller's (1993). However, there is little empirical evidence to support the conceptual definition postulated by Keller (2001). This study, moreover, thoroughly examines the previous research regarding brand equity measurement. The observation concludes that recent studies use three types of measurement model including second-order factor-, causal-, and causal model with relationships between dimensions of brand equity. Both qualitative and quantitative data are collected from students and actual customers. Famous brands are often selected as stimuli. Analytical statistics are EFA, CFA, MRA, and SEM. Variables such as consumer responses are also tested in the model.

Concepts and theories related to consumer behavior

Brand choice is affected not only by brand name and its attributes but also the individual consumer differences in tastes, preferences, and perceptions (Swaif, Erdem, Louviere, & Dubelaar, 1993). Moreover, consumer value apparently related to consumer-based brand equity network (Tasci, 2016). It is, therefore, necessary for this study, aiming for developing SME consumer brand equity scales, to take the notion of consumer behavior into account. In this section, the topics about definitions, characteristics, and process of consumer behavior will be discussed within the general context and the SME setting. Types and steps of consumer decision making, as well as factors affecting consumer behavior and brand evaluation, will also be reviewed.

Definitions and characteristics of consumer behavior

The term consumer behavior is defined as the acts of consumers in searching for, purchasing, using, evaluating, and disposing of products and services with the

expectation of satisfying their needs (Schiffman & Kanuk, 2007). The American Marketing Association (AMA) (1995), however, broadens the meaning to entail the thoughts, feelings, and environment that individuals experience by defining consumer behavior as the dynamic interaction of affect and cognition, behavior, and the environment by which human beings conduct their lives' exchange aspects.

The definition given by the AMA reflects that the *characteristics of consumer behavior* are dynamic and involves interactions as well as exchanges (Peter & Olson, 2008). *Consumer behavior is dynamic* because needs and wants of consumers constantly change at different times for different consumer groups. The change in consumers' desires results from the change in the thoughts, feelings, and behaviors of individual consumers, targeted groups, and society. For example, people nowadays adopt a new way of information seeking by using the internet to search for details of products and services. This dynamic nature of consumer behavior dramatically changes market trends, shortens the product lifecycle, and makes the companies harder to stay profitable. Thus, it becomes necessary for businesses to continuously create new products as well as new marketing and branding strategies (Peter & Olson, 2008).

Consumer behavior also associates with interaction among individuals' thinking, feelings, actions, and the environment. To satisfy consumers' needs and wants as well as to create more brand value, marketers need to understand how these interactions affect current and potential customers (Peter & Olson, 2008). As an example, one major change in Thai society is the drastic increase in the numbers of internet and smartphone users from 26,140,473 in 2013 to 43,873,732 persons in 2016 (National Electronics and Computer Technology Center [NECTEC], 2017).

Consequently, some retail companies, such as Big C supermarket, respond to this changing consumer lifestyle by launching the online shopping service as well as the brand's mobile application. It can be concluded from this example that marketers should understand what products and brands mean to consumers and what influences purchase and consumption (Peter & Olson, 2008).

Another characteristic of consumer behavior is that it involves exchanges between people in the society. This exchange occurs when individuals known as consumers give others or marketers something valuable such as money and receive products and services in return (Peter & Olson, 2008).

In conclusion, consumer behavior means all consumer actions regarding purchase, consumption, and disposal of products and services, including consumers' cognitive and affective responses as well as the environment that influences the exchange activities. Thus, the nature of consumer behavior is dynamic, involves interaction, and relates to exchange.

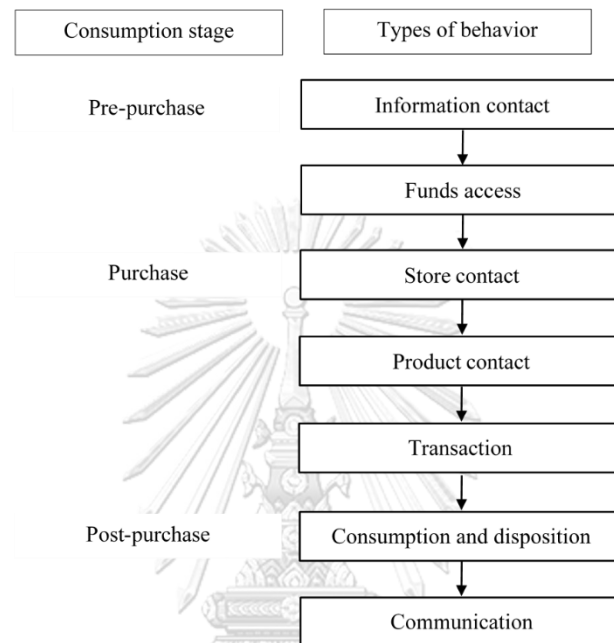
For more insights on thoughts, feelings, and actions performed by individuals, the next section will focus on the process of consumption and the activities done by consumers at each stage.

Process of consumption and consumer activities

According to Figure 2.6, consumer behavior can be analyzed as a sequence of actions including *pre-purchase, purchase, and post-purchase stages*. Although consumers might not logically follow every step of the behavior sequence and not every purchase requires the whole range of activities to be performed, this model is

useful for understanding the overall pattern of consumption process (Peter & Olson, 2008).

Figure 2.6: Process of consumption and consumer activities



Source: Adapted from Peter, J. P., & Olson, J. C. (2008). *Consumer behavior:*

Marketing strategy perspectives. New York, NY: McGraw-Hill/Irwin, p. 196.

Normally, an early step of consumption or the *pre-purchase* stage starts with the activities regarding information acquisition - *information contact and communication*. Because consumers either intentionally or unintentionally receive the information about products and brands. For example, observing or being exposed to TV commercials or advertisements on newspapers, magazines, and billboards. Consumers not only obtain the information provided by marketers, but also search and evaluate the product or brand information by themselves such as surfing the

companies and other websites; and talking to salespersons, their families, and friends (Kardes, Cline, & Cronley, 2011; Peter & Olson, 2008). After gathering enough information, the next essential activity is *fund access*. Consumers might use various payment methods including paying in cash; writing a check, and using credit or debit cards. They sometimes draw on bank loans and financing (Peter & Olson, 2008).

During the stage of *purchase*, most consumers perform three main activities including store contact, product contact, and transaction. Although online shopping becomes more and more popular, most purchases occur in the stores. Thus, *store contact* refers to the consumers' actions that consist of locating, traveling to, and entering the shops. Once potential customers are in the outlet, they first locate the products, services, or brands and then physically obtain the goods, for example, put them into a shopping cart. Finally, the buyers take the product to the exchange point such as the checkout counter. These behaviors are labeled as the *product contact* activities. After that, *transaction* occurs when consumers exchange their money for products and services.

The last stage called the *post-purchase* contains three basic behaviors: (1) consumption; (2) disposition; and (3) communication. While *consumption* should be a very straightforward activity, it is not because various products and services differ vastly in their natures (Peter & Olson, 2008). For example, the product such as an ice cream cone requires immediate consumption, whereas an airline ticket should be used later in the future. Some products, like birthday cakes or wedding dresses, are consumed as a part of a special occasion. Moreover, some products can be entirely used up before the disposal such as a battery or a movie ticket, while chewing gum cannot be swallowed whole (Kardes et al., 2011). The next behavior, the *disposition*,

is related to the activities that consumers get rid of products or packages or both after the consumption. The disposal methods include discarding products, recycling, reuse, and resale. The final behavior of the consumption process is *communication*.

Although consumers can communicate with the company or other consumers about the products, services, or brands at any time, the communication occurring after consumption is the most vital. The post-purchase conversation appears to be highly important because consumers who have purchased and used a product likely to know well about it and be more influential in telling others to use or not to use it (Peter & Olson, 2008).

The process of consumption mentioned above tends to focus on the overt behaviors or external actions that are observable. Hence, the chain of internal events like the consumer decision-making process, which is associated with the cognitive and affective domain, will be discussed in the following section.

Types and steps of consumer decision making

How and why consumers decide to behave as they do is explained by several perspectives such as the economic, passive, cognitive, and emotional view. In the *economic* sense, consumers tend to behave rationally in any purchase decision. Specifically, individuals will be aware of all product choices available then rank each alternative based on its advantages, and eventually choose the best one. In contrary to the economic view, the *passive* perspective believes that consumers are impulsive and irrational as they are yield to their interests and marketing promotions. The third view or the *cognitive* standpoint postulates that consumers are problem solvers who aim to search for products and services to fulfill their needs. Thus, they receptive to or

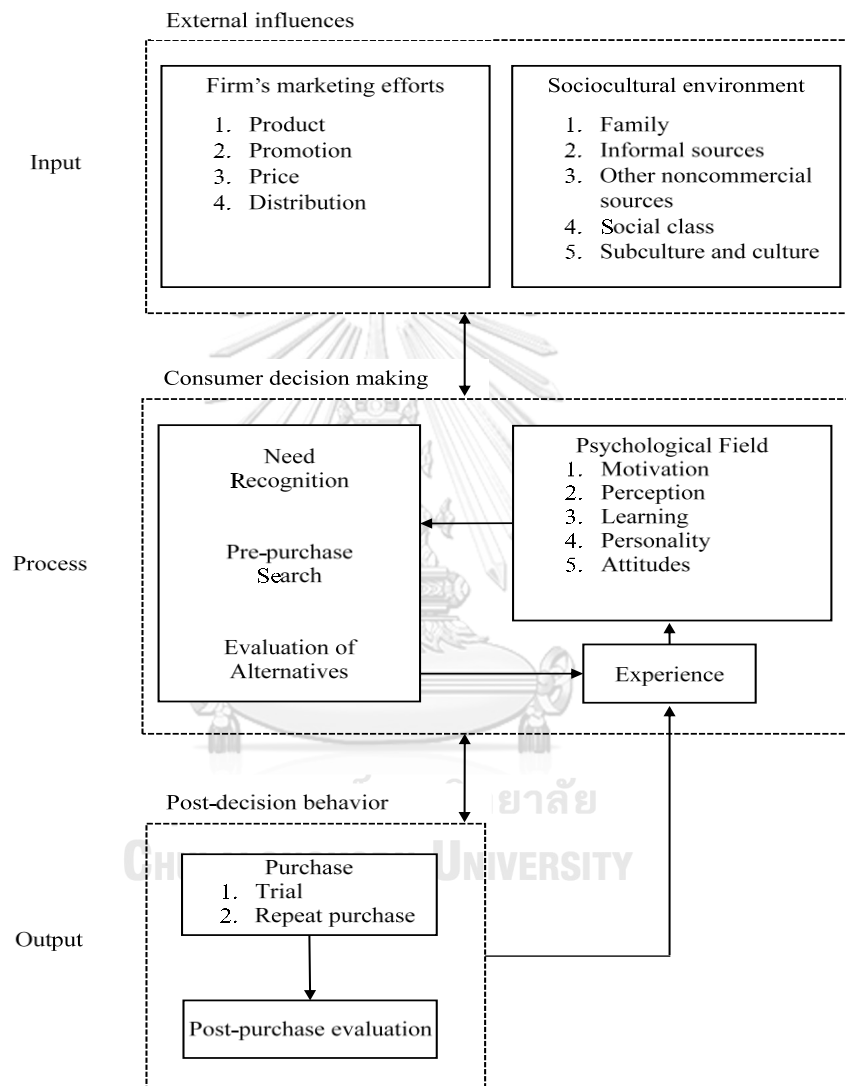
actively seek and evaluate information regarding brands and products. However, the final perspective called the *emotional* view, instead of the search for information, emphasizes more on consumers' feeling which is believed to be associated with consumer purchase decision (Schiffman & Kanuk, 2007).

The nature of consumer decision making varies not only in the underlying motive but also in the effort taken. Ranging from a very high to very low problem-solving effort, consumer decision making can be divided into three types. The *extensive decision making* requires a substantial effort from consumers to search for, identify available alternatives, and learn the criteria to evaluate them (Peter & Olson, 2008). Consumers incline to follow this approach of decision making when they are unfamiliar with the product category, such as automobile and accommodation, due to the infrequent purchase (Kardes et al., 2011). The second type called *limited decision making* needs moderate to low problem-solving effort and requires less amount of search behavior when compared to the extensive decision making (Peter & Olsen, 2008). Fewer choices and lower motivation also cause consumers to employ heuristic cues when purchasing some products, such as snacks and soft drinks, that they have already established their preferences (Kardes et al., 2011). Finally, the *routinized choice* requires least effort because this behavior is habitual and automatically carried out, for example, buying a bottle of Coke from a vending machine. The purchase decision that is highly familiar to consumers or involves low-perceived risk might lead to this type of consumer decision (Kardes et al., 2011; Peter & Olson, 2008).

Consumer decision making often occurs sequentially. Besides the process of overt consumer behavior discussed earlier, this section presents a model of consumer

decision making that involves consumers' internal mechanism regarding cognitive and emotional purchase decision.

Figure 2.7: Model of consumer-decision making process



Source: Adapted from Schiffman, L. G., & Kanuk, L. L. (2007). *Consumer behavior*

(9th ed.). Upper Saddle River, NJ: Pearson Prentice Hall, p. 513.

The overview model, portrayed in Figure 2.7, consists of three major parts which are input, process, and output (Schiffman & Kanuk, 2007). The *input* of this consumer-decision making model refers to the external sources that influence an individual's product-related values, attitudes, and behaviors. Two main input factors are: (1) marketing mix and communication activities, such as advertising, direct marketing, and personal selling; and (2) sociocultural environment, for example, opinions from family and friends or the non-commercial sources, such as articles in consumer reports and customer reviews on the internet (Schiffman & Kanuk, 2007).

The part of *process* appearing in the model is related to how consumers make their purchase decision. Three acts including need recognition, prepurchase search, and evaluation of alternatives are often orderly performed. Need recognition occurs first when consumers realize that they face a problem. If consumers perceive that the emerging need can be fulfilled with products or services, they will begin their prepurchase search from their long-term memory and may rely on the external source in case of lacking experience. After that, consumers start the evaluation of alternatives by making a list of available brands and setting the criteria for evaluating those brand choices (Schiffman & Kanuk, 2007).

The *output* of the model concerns two activities: (1) purchase behavior which can be categorized into three types including trial, repeat, and long-term commitment purchases; and (2) postpurchase evaluation which depends on consumers' expectation and possibly yields neutral, positive, or negative feelings toward the brand that has been bought (Schiffman & Kanuk, 2007).

Factors affecting consumer behaviors and brand evaluation

From the consumer's perspective, the most important characteristic of brand equity seems to be that it is based on the individual's perceptions (Keller, 1993). The customer's perception of a brand and its products and services is about subjective evaluation since consumers' values are different from one person to another (Holbrook, 2005). In other words, consumer values determine their brand evaluation as well as behaviors. To identify the variables that may affect the structure of SME consumer-based brand equity, this section, therefore, discusses factors that might have an effect on consumer behaviors and their brand evaluation consisting of demographic, psychological, sociocultural variables as well as the individual's difference in the degree of product involvement and brand engagement.

Demographic variables

Demographic characteristics refer to measurable statistics of a population such as age, sex, marital status, income, occupation, and education (Schiffman & Kanuk, 2007). These variables have been widely used for market segmentation. Prior literature thus considered the relationship between brand evaluation and some demographic factors which are age, gender, and, income. To develop a valid and reliable measure of consumer-based brand equity, researchers often include participants varying in their ages. For example, Netemeyer et al. (2004) conducted two focus groups with people in different ages with two purposes: (1) to examine whether their generated definitions of consumer-based brand equity were congruent with the public thoughts; and (2) to choose product categories and brand stimuli. Besides collecting the qualitative data from individuals of various ages, some studies tested the model of brand equity by using age as one of the criteria for quota sampling

(Buil et al., 2013). To illustrate, Jara and Cliquet (2012) measured retail brand equity from the sample categorized into three groups including under 30, 30-50, and over 50 years old since consumers in different ages could vary in their perceptions.

Researchers, moreover, examined the construct of brand equity from the perspective of consumers in the specific age range. Recently, Sasmita and Suki (2015) investigated the effects of brand equity's dimensions within the context of consumers aged between 18-25 years. E. Y. Kim et al. (2009) also developed brand equity model for generation Y consumers or people born from 1977 to 1994.

Another demographic variable that influences consumers' brand evaluation is gender. Lieven and Hildebrand (2016) empirically found that men valued masculine brands higher than women, whereas female consumers evaluated the value of feminine brands higher than males. Prior research also showed the difference between genders in consumers' evaluation of cross-gender brand extension. Precisely, Jung and Lee (2006) indicated that cross-gender brand extensions were more acceptable to women than men.

Lastly, researchers have currently noticed the effect of income on consumers' brand evaluation. Cotes-Torres, Munoz-Gallego, and Gonzalez-Benito (2015) pointed out that households in high and medium-high social class were unlikely to choose store brands compared with other social classes, as they had higher purchasing power and different consumer values of the wealthier as well. Regarding the level of brand loyalty, there also exists the difference among people varying in their incomes. Reisenwitz and Gupta (2015) investigated consumers who purchased a product warranty in the healthcare setting and concluded that customers with higher incomes were more loyal to the stores than those with lower incomes.

Psychographic variables

Despite the noticeable effect of demographic variables on brand evaluation, some researchers argued that psychographic factors were more suitable for predicting consumers' evaluation of a brand. Ulrich (2013) examined the effect of consumers' attitudes towards gender and biological sex on consumers' evaluation of cross-gender brand extensions. The study indicated that consumers with more liberal attitude were more receptive to the cross-gender brand extension than consumers with more traditional gender attitude. However, consumer's biological sex had no significant impact on consumers' brand evaluation (Ulrich, 2013). Similarly, Abhishek (2014) agreed that psychographic variables, such as customer needs, attitude towards price, and perceived product importance, were able to provide the better explanation for consumer purchase behavior within the context of private brands. Besides consumer attitude and need, value and lifestyle are psychographic variables that influence consumers' brand evaluation. Lin (2002) differentiated brand preference among consumers by using the combination of two scales called List of Values (LOV) and the most widely-used typology segmentation known as the Values and Lifestyles System (VALS2). The results indicated that the value and lifestyle variables were more proper measurements of consumer brand preference differentiations relative to demographic variables (Lin, 2002). Moreover, Orth, McDaniel, Shellhammer, and Lopetcharat (2004) also came to the same conclusion that lifestyle variables were better than demographic factors in predicting consumer brand preference.

Sociocultural variables

Society and culture have also been acknowledged as factors that influence individual's brand evaluation. For example, parents can transfer their consumption behaviors and brand selection to children (Moore, Wilkie, & Lutz, 2002).

In the domain of brand equity, Bravo, Fraj, and Martínez (2007) revealed how intergenerational socialization influenced brand equity. Their qualitative study showed that the high-awareness brand is the one that has frequently been purchased in the family. Some brand associations in consumers' mind stem from the family conversation about brand attributes. Children also perceive the brand quality from their experiences with the products consumed in their family and these young consumers often express their brand loyalty by choosing the same brands as used in the family when they have to buy some products for the first time. Moreover, the effect of intergenerational communication on brand equity was empirically tested. Recently, Cai, Zhao, and He (2015) found that intergenerational conversation and recommendation influenced affective brand associations and perceived quality. These two variables, in turn, built brand trust which led to brand loyalty. Then, overall brand equity occurred eventually.

Besides social influences, culture also plays a role in our brand evaluation. Thus, some researchers collected the qualitative data, such as conducting focus groups, from participants varying in the ethnic background (Netemeyer et al., 2004). Furthermore, the cultural influence on brand equity was currently emphasized by Krautz's (2017) study as its empirical findings showed that people in the collectivistic culture evaluated brand equity based more on collective brand perception when compared to persons from the individualistic society.

Consumer-product involvement

Besides variables regarding individual's characteristics mentioned earlier, consumers' evaluation is affected by consumer-product involvement or the level of product interest as well as the importance of a product to consumers (Guthrie & Kim, 2009). According to Houston and Rothschild (1978), product involvement is classified into three types which are situational, enduring, and felt involvement. Situational involvement represents the state that consumers are temporarily aroused by current environmental stimuli, for example, perceived risk, price and product durability. Once the situation is over, the level of consumers' interest drops down immediately. On the other hand, the enduring involvement refers to the more stable and long-term interest in a product. The enduring involvement is based on consumers' values such as pleasure and self-image as well as product experience. The combined effects of situational and enduring involvement lead to the felt involvement which describes the individual's overall feelings that result from the situation and product.

The effect of consumers' product involvement on brand evaluation has been discussed widely among researchers. Lockshin and Spawton (2001) developed branding strategies for wine tourism businesses by highlighting the influence of the high and low level of consumer-product involvement on five dimensions of brand equity including brand awareness, brand association, perceived quality, brand loyalty, and other brand assets. Moreover, Guthrie and Kim (2009) provided empirical evidence that young female consumers varying in their involvement with cosmetic products expressed the different level of brand attitude and perceived the personalities of selected brands in various ways. The impact of consumer-brand involvement on consumers' brand evaluation was also reported by Maiksteniene and Auruskeviciene

(2008) as they empirically found that consumers with differing involvement in purchase decision differently evaluated manufacturer and retailer brand in the same product category.

Consumer-brand engagement

Recent research on branding and consumer behavior has begun to explore the concept of consumer engagement with a brand. Consumer brand engagement, according to Hollebeek (2011), refers to some consumers' cognitive, emotional, and behavioral efforts for a brand. To be more specific, the cognitive dimension of brand engagement occurs first when consumers get familiar with a brand. The cognitive engagement later arouses some particular feelings which could be positive or negative. These emotions finally turn a passive consumer into an active participant.

Thus, brand engagement is believed to be a source of brand value. The more consumers are engaged, the greater brand value is created (Higgins & Scholer, 2009). Kuvykaite and Piligrimiene (2014) further explained that consumers' engagement could bring the higher value or equity to a brand because the brand engaged consumers are willing to provide the useful information for a brand and also help that brand create products and services that meet individuals' needs. When a brand can correspond better to consumers' needs, it generates more favorable associations in consumers' perceptions. Once consumers have positive thoughts and feelings towards a brand, they are even more cognitively and emotionally engaged to that brand. The higher level of cognitive and affective brand engagement eventually stimulates brand loyalty and the behavioral engagement such as positive word-of-mouth. Hence, consumer-brand engagement has potential to increase brand equity, and it should be

included into a model of brand equity to reflect the changes in the relations and structures of brand equity dimensions (Kuvykaite & Piligrimiene, 2014).

Moreover, the influence of consumer-brand engagement on the brand equity creation was empirically proved. After conceptualizing and validating a statistical model, Mathur (2017) indicated that customer engagement and brand perception on social media were key determinants of brand equity creation.

Consumer behavior within the setting of SMEs

Besides common activities previously discussed in the sections regarding the process of consumption and consumer decision making, consumers perform specific behaviors when they contact small and medium businesses. These actions include (1) identifying specialized needs, (2) co-producing products and services, and (3) co-creating brand value. Most SMEs' customers prefer products with the high quality in both materials and manufacturing process (Levy & Powell, 1998). They, moreover, realize the potent of SMEs in satisfying their unique preferences unmet by large companies in the marketplace. Thus, customers tend to *identify their specialized needs* when purchasing the products or services from small and medium-sized firms.

According to the theory of alternative customer needs postulated by Chaston (1999), consumers' specific needs within the SMEs setting can be categorized into four types including:

1. *Conservative-transactional oriented customer needs*; – To fulfill this kind of need, SMEs should provide customers the standardized products with the superior price and quality to that of competitors.

2. *Conservative-relationship oriented customer needs*; – The products and services needed by this group of clients must be in the same standard of quality as those from other companies, and moreover; successfully solve clients' specific problems.
3. *Entrepreneurial-transactional oriented customer needs* – SMEs can meet the needs of customers in this situation by offering the outstanding and innovative products when comparing to others in the same industrial sector.
4. *Entrepreneurial-relationship oriented customer needs* – To meet the needs of this consumer group, small and medium-sized firms should deliver the products or services that are superior in performance relative to those of other competitors, together with the professional assistance to let customers achieve even more innovative products.

The strongest influence on SMEs' success was the ability to fulfill customer needs (Klobas & Bielli, 2011). Since customers often identify specific needs, some SME owners simply let their clients *co-produce products and services* (Thrassou & Vrontis, 2006). In this case, SME entrepreneurs are specialists with knowledge and expertise. Thus, they can customize the features of products or services. Co-production not only fulfills customers' distinct needs but also results in good networking relationship between organization and customers (Resnick et al., 2016).

As SMEs' customers usually actively participate in the production process, they incline to *co-create the brand value* by supporting SME brands in many ways. For example, consumers show their positive feelings toward an SME brand via clicking the like button on the brand's Facebook fan page (Wallace, Buil, & de Chernatony, 2016). This behavioral engagement with a brand expresses customers'

brand preference as well as the willingness to receive that brand's information (Nimsuwan & Polnigongit, 2013). Another form of value creation by customers is brand advocacy. SME consumers sometimes become the brand advocates when they spread the positive word of mouth about a brand to others. To illustrate, loyal consumers, especially the fans of restaurant brands, usually create a Facebook page for the SMEs (Nakara et al., 2012).

According to the discussion above, consumer behaviors within the SME context appear to be closely related to customers' product involvement as customers can be a significant partner in the product development. Furthermore, the concept of brand engagement as well as brand advocacy should be considered as SME customers tend to participate actively in brand communication activities and also willing to promote their favorite brands without being paid.

Summary

Consumer behavior refers to the thoughts, feelings, environments that mutually influence the acts of consumers in searching for, purchasing, using, evaluating, and disposing of products and services. Individual and environmental circumstances change regularly. Hence the characteristics consumer behavior is dynamic, involves interaction, and relates to exchange. Moreover, consumer behavior can be analyzed as a sequence of actions including pre-purchase, purchase, and post-purchase stages. This process involves each stage's overt activities which are information contact and communication and fund access in the prepurchase step, followed by store contact and product contact during the purchase stage. Finally,

individuals consume, dispose of, and communicate about products in the post-purchase step.

Besides performing observable behaviors, consumers internally evaluate products and brands. Their decision-makings may be extensive, limited, or routinized and often involve inputs from marketing and noncommercial communications, the actions of need recognition, prepurchase search, and alternative evaluation in the process, as well as the output which appears in the form of neutral, positive, or negative brand feelings. As mentioned earlier that consumer behaviors are influenced by individual and environmental conditions, prior literature noticed several factors affecting our consumption behaviors and brand evaluation. Demographic, psychographic, sociocultural variables, consumers' product involvement, and brand engagement can explain why and how consumers perceived brand value. The last part of this section contributes to consumer behaviors that specifically occur in the SME context. These actions include (1) identifying specialized needs, (2) co-producing products and services, and (3) co-creating brand value.

Conceptual framework for SME consumer-based brand equity models

To begin the development and validation of the brand equity model within the SME setting, the researcher extensively reviews the relevant literature regarding concepts and theories of small and medium-sized enterprise, consumer-based brand equity, as well as consumer behavior. However, prior studies regarding the assessment of consumer-based brand equity for SMEs are scarce. Owing to the lack of empirical evidence, this study, therefore, first explores the nature of SME brand equity by tentatively proposing the working measurement models. According to

Figure 2.8, the overall model comprises of three main parts: (1) Competing models of brand equity measurement, (2) Moderating variables, and (3) Dependent variables.

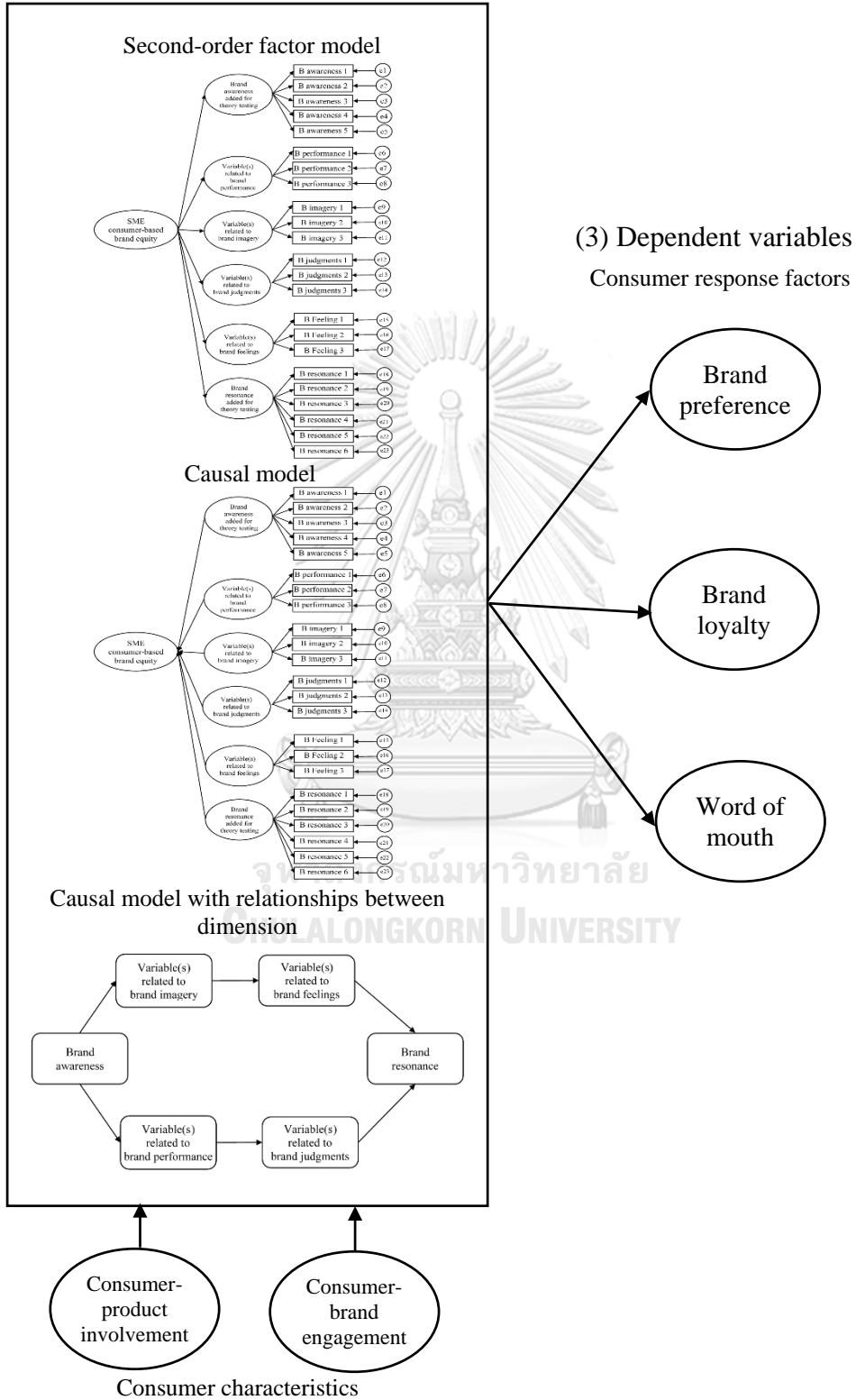
More details of each part will be presented here, respectively.

Competing models of SME brand equity measurement

The literature review conducted in this study shows an interesting theoretical gap in the aspect that many measurement scales of brand equity were developed from the two familiar concepts proposed by Aaker (1991) and Keller (1993). However, little empirical evidence was found to support Keller's (2001) brand resonance model (Aziz & Yasin, 2010). As a consequence, the conceptual and operational definitions of SME brand equity developed here are customized to tap every corner of consumers' SME brand evaluation in the way that can provide empirical evidence for Keller's (2001) concept of brand equity pyramid which comprises of six parts, ranging from the base to top, named *brand salience*, *brand performance*, *brand imagery*, *brand judgments*, *brand feelings*, and *brand resonance*.

Figure 2.8: Overview of conceptual framework

(1) Competing models of brand equity measurement

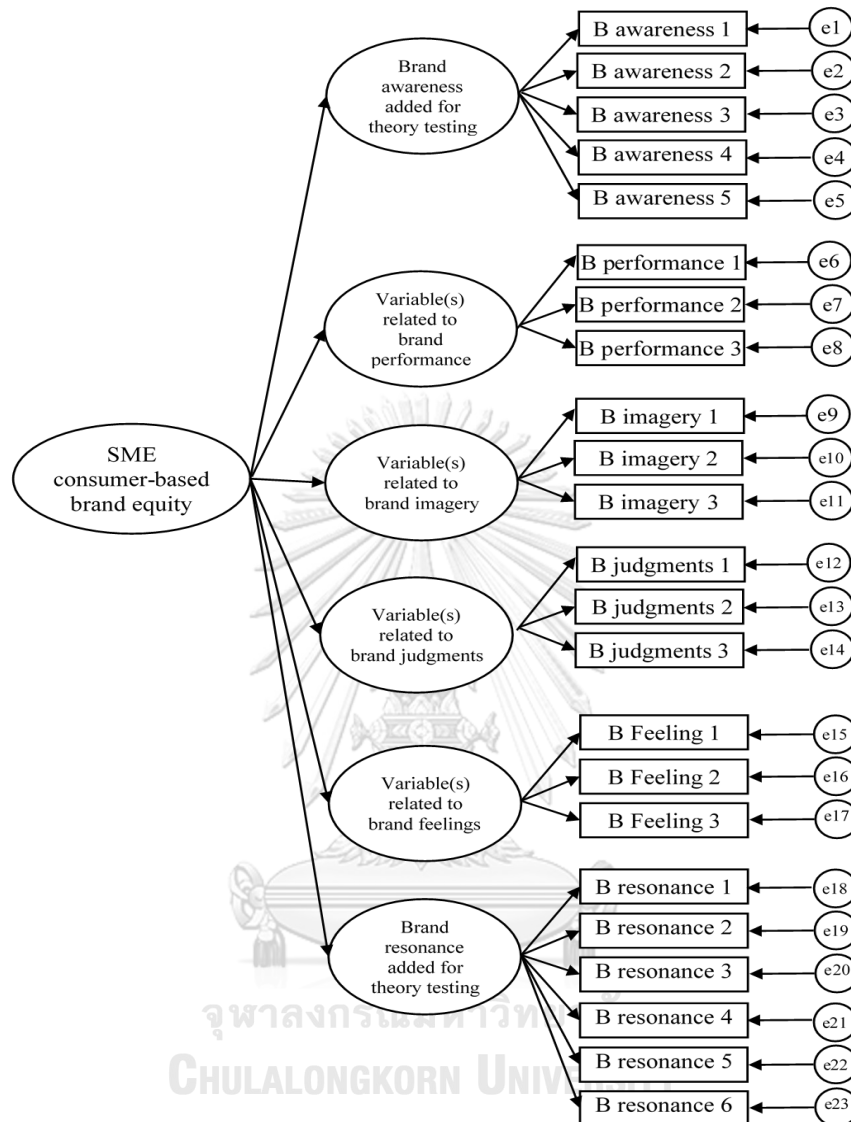


(2) Moderating variables

Some agreement emerged in prior studies that brand equity should be treated as a multidimensional variable. However, the existing models of brand equity vary considerably in their components as well as modeling techniques. To date, three kinds of consumer-based brand equity model are distinguished—a second-order factor model, a causal model, and a causal model with relationships between dimensions. Despite many forms of competing models discussed above, no researcher compares the effectiveness of all three kinds of brand equity model including the second-order factor model, causal model, and causal model with relationships between dimensions. Therefore, this study fulfills the lack of research regarding brand equity model comparison by proposing competing measurement models which arrange the dimensions of SME brand equity in three different ways including a second-order factor model, a causal model, and a causal model with relationships between dimensions.

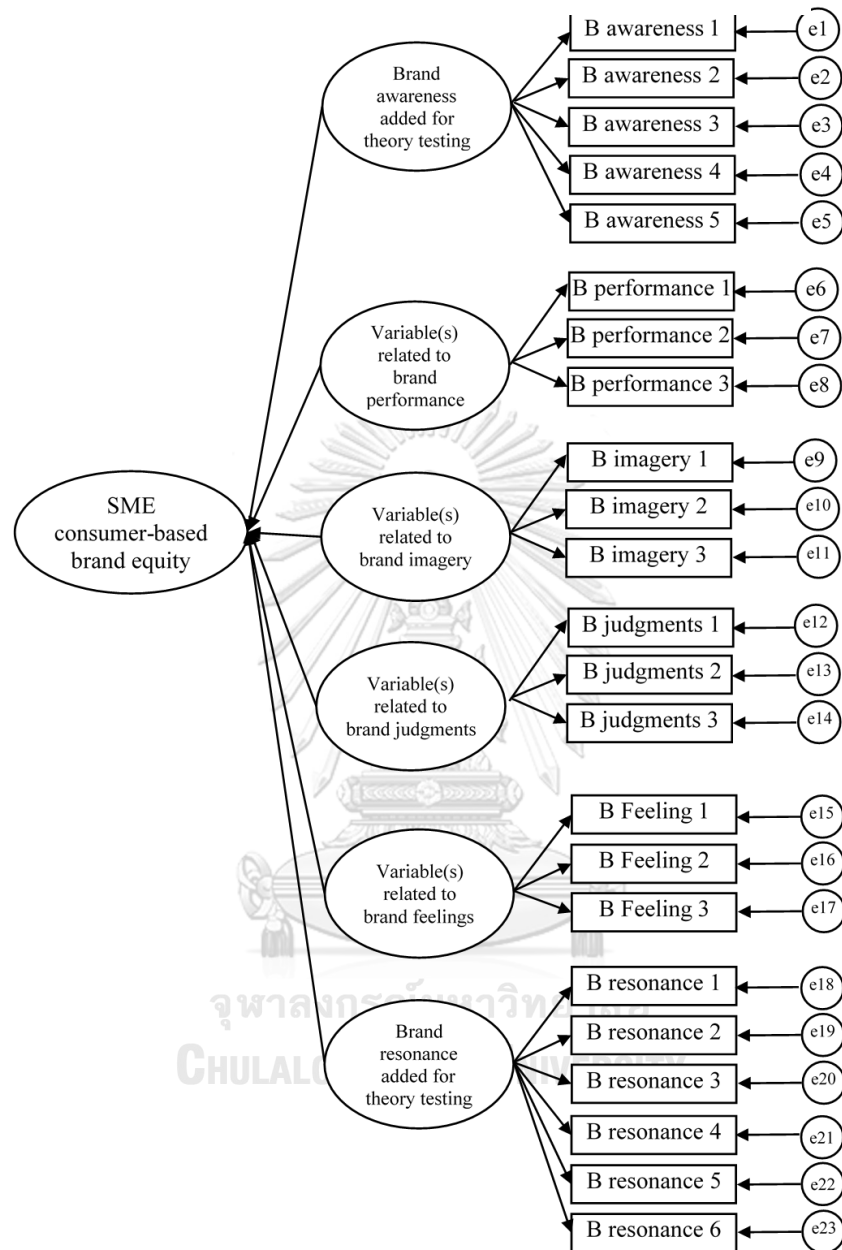
The first alternative model of SME brand equity is the *second-order factor model* which refers to the structure of measurement that treats brand equity as a second-order latent variable reflected by six first-order latent variables depicted in Figure 2.9.

Figure 2.9: Second-order factor model of SME brand equity



The second type of model proposed here is the *causal model* portrayed in Figure 2.10. Although this model also comprises of brand equity and its sub-dimensions, the difference lies in the aspect that the six first-order latent variables form or cause brand equity, rather than reflect or appear to be caused by brand equity.

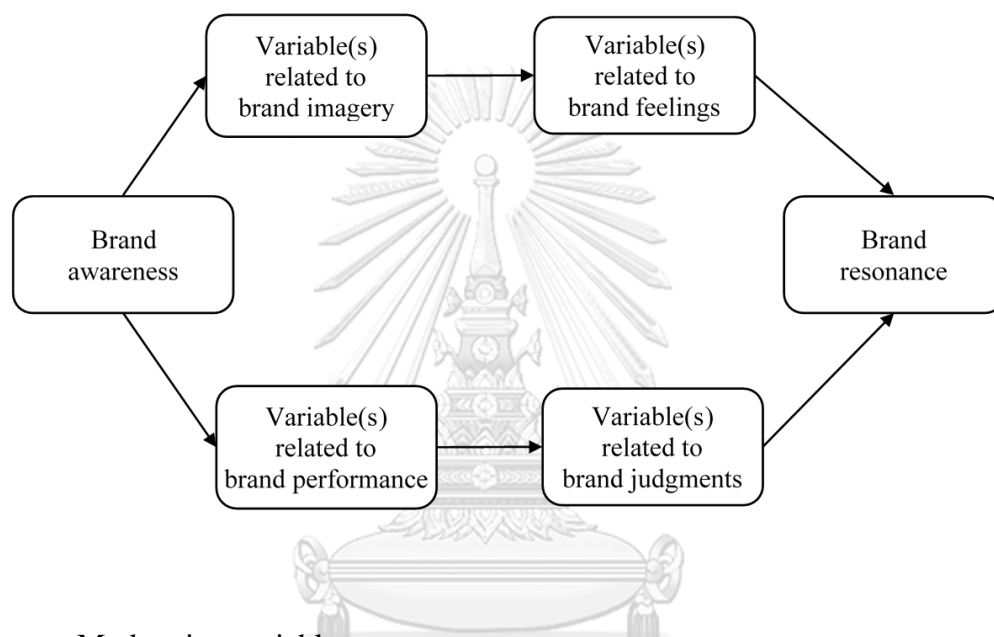
Figure 2.10: Causal model of SME brand equity



The last model developed in this study is the *causal model with relationships between dimensions*. As shown in Figure 2.11, this type of measurement model proposes the causal links between brand equity's six dimensions. Specifically, all blocks of Keller's (2001) brand equity pyramid possibly relate to each other

hierarchically in the way that brand awareness influences brand performance as well as brand imagery. These two variables, in turn, form brand judgments and brand feelings which eventually develop brand resonance.

Figure 2.11: Causal model with relationships between dimensions of SME brand equity



Moderating variables

Although variables used for market segmentation, such as demographic, psychographic, and sociocultural factors, have a noticeable effect on consumers' brand evaluation, this study decides to collect qualitative and quantitative data from participants varying in the characteristics above but not to import these variables into the SME brand equity model.

According to previous research on measuring brand equity, the scale generalizability was achieved by interviewing people differing in their ethnic background (Netemeyer et al., 2004) as well as cluster sampling based on age (Buil et

al., 2013; Jara & Cliquet, 2012; Netemeyer et al., 2004) and gender (Buil et al., 2013). Therefore, this study adopts the same practice as those successful research projects.

Moreover, each brand, despite being in the same product category, often targets customers in different segments in terms of their demographic, psychographic, and sociographic profiles. So these consumer characteristics should not be fixed in this study's general model of SME brand equity, and it is more proper to choose common attributes that explain the nature of every brand's customers to be the moderating variables.

The most important reason is that consumer behaviors within the SME setting seem to be closely related to customers' product involvement and brand engagement. As consumers are often important co-producers of SME products and services (Thrassou et al., 2006), and they also voluntarily promote their preferred SME brands for free (Nakara et al., 2012).

Taking every aspect into account, the researcher selects two moderators which are: (1) *Consumer-product involvement* or the consumers' degree of product interest and perceived product importance (Guthrie & Kim, 2009) that may last for a long time or occasionally be triggered by situations (Houston & Rothschild, 1978); and (2) *Consumer-brand engagement* which is defined as consumers' cognitive, emotional, and behavioral efforts for a brand (Hollebeek, 2011). For example, consumers who are familiar with a brand is believed to possess some level of cognitive brand engagement. After that, they develop emotional engagement or some feelings toward a brand and eventually express their behavioral engagement by actively participating that brand's activities.

Dependent variables

This study includes some consumer response factors in the SME brand equity model to examine several theoretical concepts that often postulate the influence of brand equity on consumer behaviors. Three variables which are brand preference, brand loyalty, and word of mouth are selected as dependent variables in the current brand equity according to many reasons. *Brand preference* has long been counted as consumers' response resulting from brand equity (Buil et al., 2013). Moreover, it is necessary for small firms which have numerous direct and indirect competitors since brand preference is the extent to which consumers have a bias for a particular brand (Ismail & Spinelli, 2012) when comparing to others in their consideration set (Hellier, Geursen, Carr, & Rickard, 2003).

Another dependent variable is *brand loyalty* which occurs when consumers feel strongly committed to a brand and keep purchasing it over time despite changes in price or competitors' marketing effort (Oliver, 1999). Obviously, regular customers bring in the recurring revenue. Some studies also suggested brand loyalty as a criterion for SME performance measurement (Osakwe, 2016). Thus, brand loyalty possibly contributes to the sustainability of SMEs.

The most vital consumer response for SMEs is *word of mouth* or the positive brand information that consumers tell others (Castellanos-Verdugo, Oviedo-Garcia, & Roldan, 2009). SMEs rely heavily on word of mouth because they have modest budgets for marketing communication. Besides expanding SMEs customer base through referrals and recommendations, word of mouth also helps build up the credibility (Stokes, 2000) and brand awareness (Abimbola, 2001; Berthon et al., 2008; Jamal, 2005; Krake, 2005; Wong & Merrilees, 2005) for small businesses. Hence,

word of mouth is definitely chosen as one of the dependent variables in the SME brand equity model.



Chapter 3

Methodology

This study aims to develop a valid, reliable, and generalizable measurement model of SME brand equity as well as to examine its relationship with consumer response factors. For achieving these purposes, the researcher employs the scale-constructing procedures that are closely parallel to the traditional guidelines recommended by Churchill (1979). A research program consisting of three interrelated steps was carried out.

Step 1 was to generate items that tap the constructs of SME brand equity. Based on an analysis of documents, 40 semi-structured interviews with 18-67-year-old consumers, and two focus group discussions, an initial pool of items were created.

Step 2 was to define dimensions of SME brand equity, along with the development and validation of the competing measurement models. Two surveys were conducted to respectively explore and confirm the dimensions of SME brand equity. Later, series of confirmatory factor analyses and structural equation modeling analyses were performed to develop and validate three competing models consisting of a second-order factor model, a causal model, and a causal model with relationships between dimensions.

Step 3 was to test the measurement invariance among different consumer groups and across business sectors as well as to examine the relationship between SME brand equity and consumer response variables. The most popular brand of each business sector or a total of three brands from SMEs engaged in manufacturing, service, and trade was measured by the best competing model. Three questionnaires

differing in SME brand were administered to three independent groups of respondents. The invariance of the model as well as its relationships with consumer response variables was subsequently assessed. Figure 3.1 illustrates the overview of the research process, and more details of each step are presented afterward.

Figure 3.1: Overview of research process

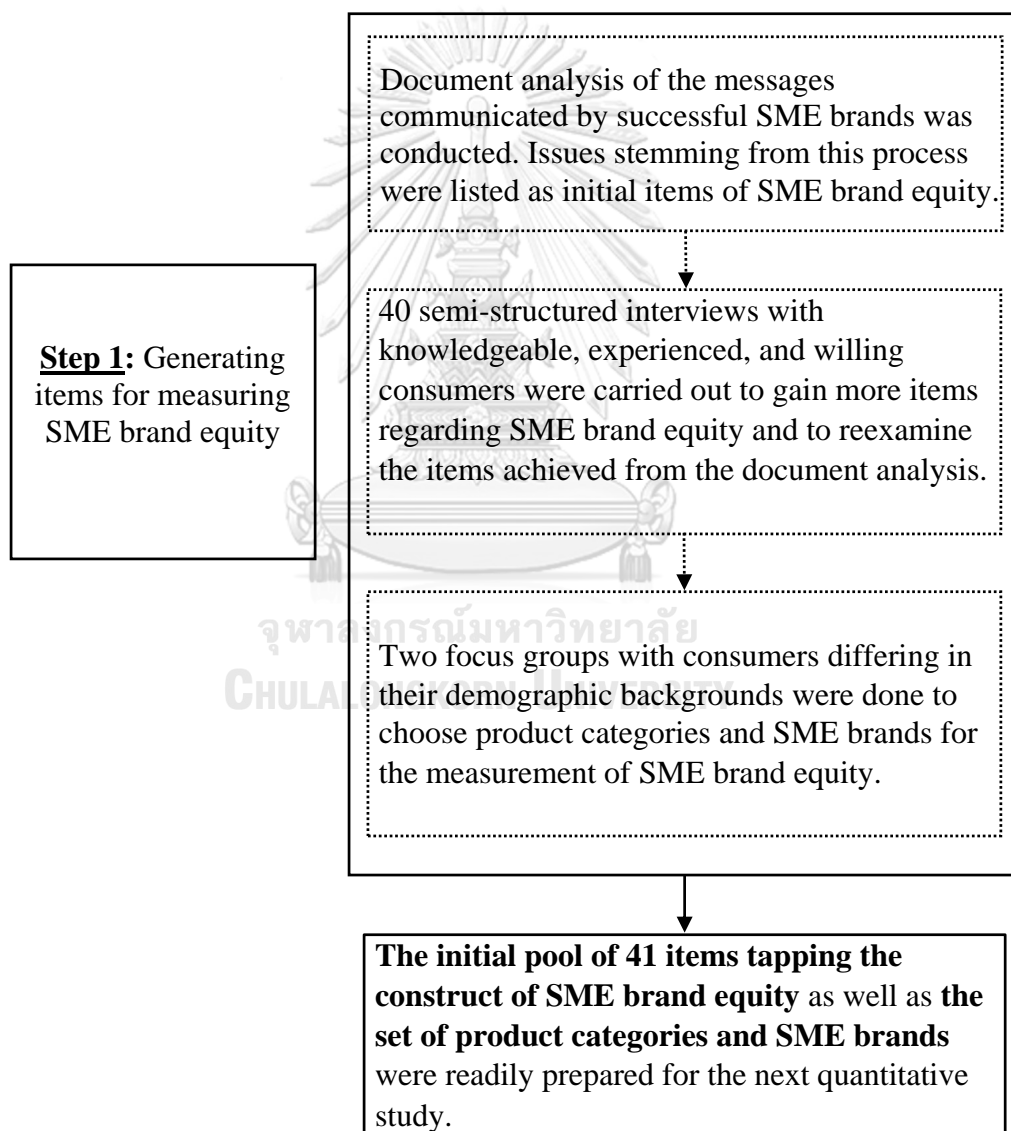


Figure 3.1: –continued.

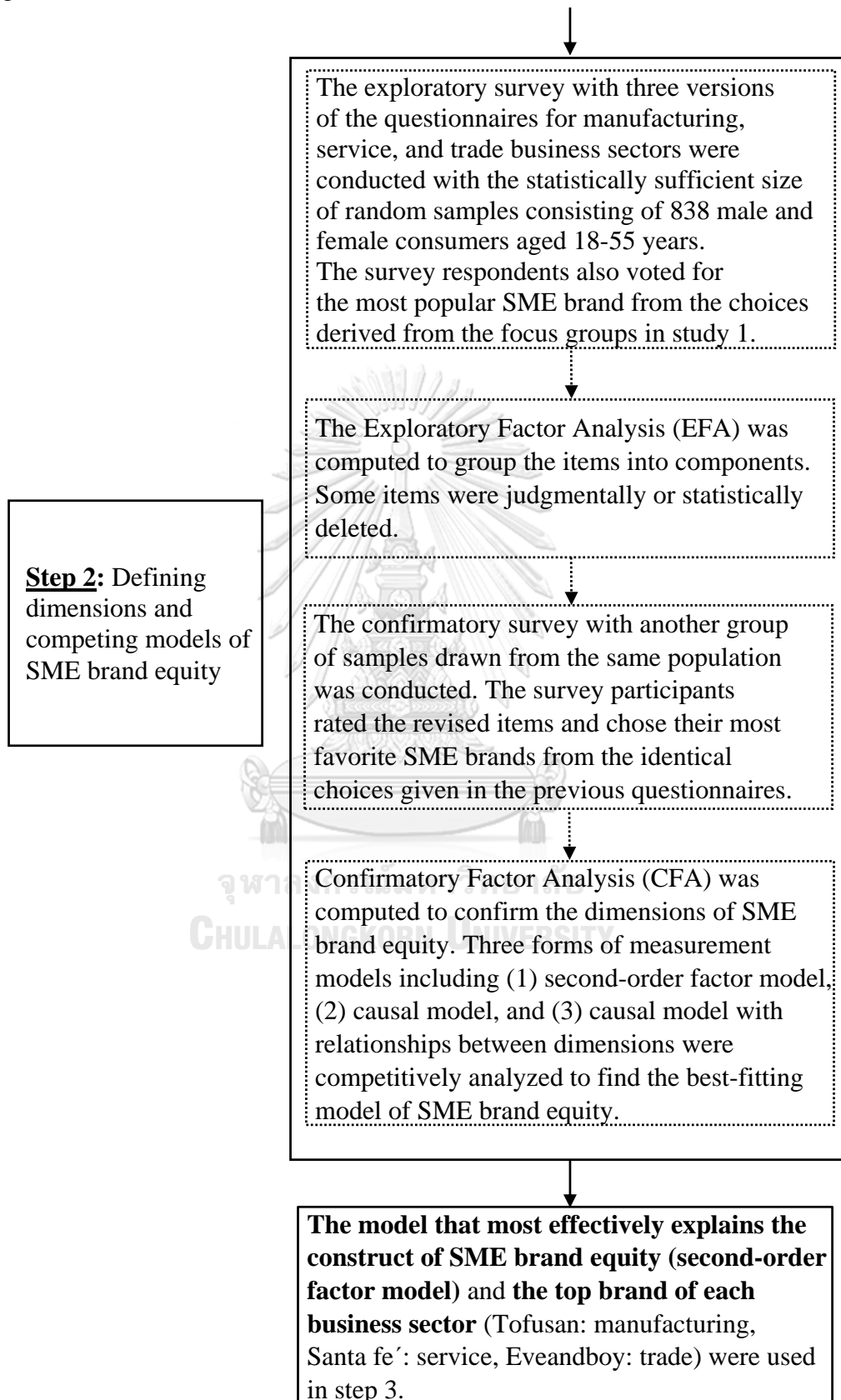
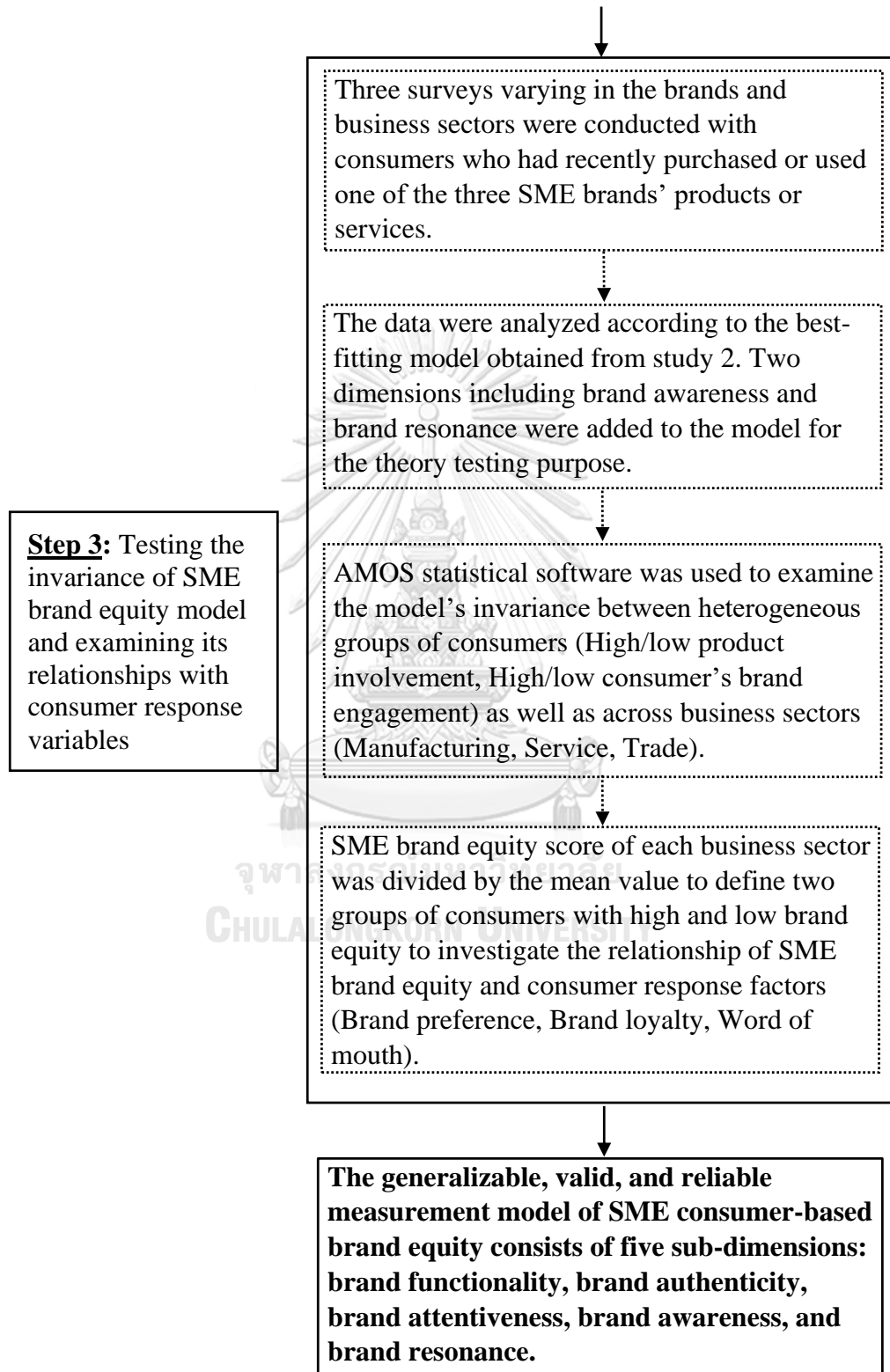


Figure 3.1: –continued.



Step 1: Generating items for measuring SME brand equity

To create a pool of initial items that tap the constructs of SME brand equity, the researcher used different sources and methods of research to obtain data from various standpoints as well as to accomplish data-source and method triangulations (Baxter & Babbie, 2003). Specifically, qualitative data from documents and actual consumers varying in their background were collected by three techniques including document analysis, semi-structured interview, and focus group. The details of each data gathering method are presented here respectively.

1.1 Document analysis of SME brand communications

For understanding consumers' SME brand evaluation, it is necessary to start from tracking the brand values conveyed by SME marketers to their targets. Hence, documents regarding brand communication of 40 SMEs that meet the following criteria were analyzed.

Criteria used to select SME brands for document analysis

- (1) SME brands chosen must be business-to-consumer (B2C) companies in manufacturer, service, or trade sectors and have 50 – 200 employees with total assets that are 50 - 200 million THB (OSMEP, 2011), and
- (2) SMEs selected have to be businesses that succeed in brand building. Since small and medium-sized businesses have no accessible market share data, this study defines successful SME brands as the firms chosen by the governmental organizations to be the outstanding examples of branding. Alternatively, the companies receive the awards that include branding into their judging criteria, for example, SMEs National Award from Office of SMEs Promotion (OSMEP).

Materials for document analysis

Marketing communication data of the brands satisfying the criteria mentioned earlier were gathered and analyzed. Materials for document analysis included

- (1) Messages regarding SME brands communicated through several channels, such as business websites and social networking platforms, for example, Instagram, Twitter, and Facebook, because these media are widely used by SMEs to communicate their brand personality, brand position (Opoku et al., 2007), brand identity (Nimsuwan & Polnigongit, 2013), and brand engagement with customers (Renton et al., 2015);
- (2) The branding details presented by SME brand owners as well as marketing experts via public media, such as newspaper and magazine articles or TV and radio programs (Centeno & Hart, 2012);
- (3) Consumer feedbacks, such as customer reviews appeared on Facebook fan pages and internet forums, as SME consumers often actively show their brand feelings and word of mouth on the internet (Nakara et al., 2012; Wallace et al., 2016).

Process of data collection and analysis

The researcher used the brand names as primary keywords to search for the relevant details of each SME brand appeared on the internet and the databases, while offline data were obtained from Union Catalog of Thai Academics Libraries (UCTAL). After that, the data were analyzed according to Strauss and Corbin's (1998) open coding process divided into three steps:

- (1) *Conceptualizing the data* by finding the different and similar brand values proposed by SME brands;

(2) *Defining categories* by grouping the similar concepts of brand values into the same categories; and

(3) *Developing the categories* into the coding frames for analyzing all documents

Besides the data-driven categories derived from the document analysis, this study added brand awareness and brand resonance to the coding frame to develop the conceptual and operational definitions of SME brand equity in the way that can provide empirical evidence for Keller's (2001) concept of brand equity pyramid. In particular, five items of brand awareness (Oh, 2000) and six items of brand resonance (Wang et al. 2008) were items theoretically added to the coding frame (See Appendix G), with the intention of examining Keller's (2001) brand equity pyramid. The findings from the document analysis were a part of question guidelines for the semi-structured interviews conducted afterward.

Validity and reliability testing

The data-driven coding frame was tried out and revised to the final version by two coders to achieve the content validity and intercoder reliability.

1.2 Semi-structured interview with consumers

Individual consumers are the vital information sources for the generation of items measuring consumer-based brand equity for SMEs. Among several data collection techniques, the interview method is appropriate for capturing consumers' views, ideas (Fontana & Frey, 2000), as well as their experience (Wengraf, 2001). Moreover, personal interviews are preferred for elicitation of brand associations (Supphellen, 2000). Hence, this study conducted interviews with actual consumers based on several open-ended questions to learn about consumers' perspectives on

SME brand evaluation.

Criteria adopted for interviewee selection

To be able to delve deeply into the thoughts of participants, the researcher conducted personal interviews with knowledgeable and willing participants who know at least 5 of 40 SME brands used in the document analysis. Moreover, researchers noticed the difference in brand perception of people varying in their gender (Jung & Lee, 2006; Lieven & Hildebrand, 2016) and ages (Buil et al., 2013; Jara & Cliquet, 2012; Netemeyer et al., 2004). Therefore, the data of this study were collected from 40 (20 males and 20 females) interviewees that were divided equally into four groups of generations: Baby boomers (aged 53 – 67 years), Generation X (38 – 52 years old), Generation Y (23 – 37 years old), and Generation Z (22 years old and under) (McCrinkle & Wolfinger, 2014).

Interview question guidelines

To enhance the participants' ability to generate and organize their thoughts, the questions used in the interviews were ranged from simple to more complex topics of consumers' evaluations on SME brand purchase and consumption experience. To understand SME brand equity in the perception of consumers, the researcher adopted Supphellen's (2000) guidelines for in-depth elicitation of brand associations to prepared questions for the interview. The questions asked were:

- (1) Please indicate your most favorite SME brands of any sector including manufacturer, service, and trade.
- (2) In your opinion, what qualities/ characteristics first come to your mind when you think of the best SME brands? Would you please provide some specific examples?

(3) From the list of brand values derived from the document analysis, which ones are important to you? Why?

(4) Do you have any suggestions for SMEs to create more brand values?

Process of data collection and analysis

To ensure that the selected consumers had a substantial amount of knowledge about small and medium-sized enterprises, the personal interviews of this study were systematically carried out according to the following steps.

(1) After being informed the purposes of this study, interviewees learned about the definitions and characteristics of SMEs. To facilitate the participants' understanding about SMEs, the researcher also presented small and medium-sized firms' remarkable attributes (OSMEP, 2011) which can be summarized as follows:

- Most SMEs' products are simple and can be made using basic technologies.
- SMEs are usually able to offer tailor-made products and services. For example, allowing customers to create their own custom cell phone cases.
- Many SMEs have few or no branch offices.
- SME brands' advertisements rarely appear on traditional media, such as televisions and newspapers, but are often shown on the internet or in-store displays.
- SME owners usually present their brands or demonstrate the use of products and services by themselves.
- Most SME brands gain their awareness from face-to-face or electronic

word-of-mouth recommendations (OSMEP, 2011).

- (2) In addition to statements regarding SME definitions and characteristics, examples of SME brands were given. Moreover, participants were allowed to ask any questions about small and medium-sized companies.
- (3) After that, semi-structured interviews were conducted. Based on the question guidelines presented above, participants were asked to provide information on their SME brand consumption experience as well as brand evaluation criteria.
- (4) When the interview was finished, each selected consumer was thanked for the cooperation and received a small gift from the researcher.

All recorded interviews were later transcribed. The coding scheme developed from the document analysis of SME brand communications were compared and contrasted with the interview data gathered from actual consumers. Finally, primary items of consumer-based brand equity for SMEs were achieved.

1.3 Consumer focus groups

Focus groups are particularly suitable for the study that aims to know individuals' reactions to product or brand stimuli as well as to obtain useful feedbacks for new concepts (Greenbaum, 1993). Hence, focus groups were conducted here to choose product categories and SME brands for the measurement of SME brand equity.

Criteria used to select focus-group participants

This study conducted consumer focus groups according to Fern's (2001) guidelines. For uncovering shared thoughts for theory applications, within-group homogeneity and between-group heterogeneity are desirable. Moreover, a focus group

should be composed of 8-12 individuals. Therefore, two focus groups were used in this study. Each group consisted of four males and four females, or eight consumers in total, and members of the same group were demographically and socioculturally homogenous. Heterogeneity was achieved through between-group differences. The two focus groups equally contained participants varying in their age. One was comprised of baby boomers (aged 53 – 67 years) and Gen-Xers (aged 38 – 52 years), the other included Gen-Y (aged 23 – 37 years) and Gen-Z (aged 22 years and under) participants (McCrinkle & Wolfinger, 2014).

Question guidelines for focus groups

As the researcher is interested in uncovering common thoughts of consumers about SME brand selection, the more structured approach of focus group interviewing is more suitable (Fern, 2001; Morgan, 2002). Consequently, it is necessary for both focus groups to use a similar set of questions presented as follows:

- (1) What is your most favorite SME brand? Would you please share your best experience of that brand?
- (2) From the given lists of product categories in each business sectors, what kind of products and services do you often buy from small and medium-sized businesses?
- (3) Here are sets of SME brands in the product categories that you have just chosen. Would you please select the top three most famous brands of each product type? Which brand(s) do you frequently purchase?

Process of data collection and analysis

The current study adopts the more structured approach of the focus group. This method tends to rely on a moderator who sets the agenda and directs the

discussion. Participants have to direct their comments to and through the moderator (Baxter & Babbie, 2003). A focus group protocol, therefore, is proposed here to clarify the data collection process (Baxter & Babbie, 2003; Fern, 2001).

- (1) The researcher working as the focus group moderator began the sessions, which were held at the Faculty of Communication Arts, Chulalongkorn University, by providing a welcome and an overview of the discussion's purposes and process.
- (2) Some refreshments were served to the participants. Then, they were asked to introduce themselves in a round-robin manner.
- (3) Before starting the discussion, the moderator explained definitions, characteristics, remarkable attributes, and examples of SME brands to ensure the participants' understanding of small and medium-sized businesses. Questions regarding SME brands are welcome.
- (4) After that, the moderator started the discussion by asking questions listed in the guideline mentioned earlier. All participants are allowed to answer each question with a specific amount of time. The moderator wrapped up all comments before raising the next question.
- (5) When the discussion is over, each focus group member was thanked. A small gift from the researcher was also given.

Data about product and brand stimuli obtained from the focus group interviews were added to the questionnaire designed for the survey in step 2.

Step 2: Defining dimensions and competing models of SME brand equity

For defining dimensions of SME brand equity, along with the development and validation of the competing models, two surveys were conducted to respectively explore and confirm the dimensions of SME brand equity. Later, a series of confirmatory factor analyses and structural equation modeling analyses were performed to develop and validate three competing models consisting of a second-order factor model, a causal model, and a causal model with relationships between dimensions. The details of data collection method as well as the statistical analysis of each sub-study are presented here in sequence.

2.1 Exploratory survey of SME brand equity dimensions

Due to the lack of theories regarding SME brand equity, a survey to explore the nature of this variables' dimensions is a prerequisite. First, tentative items of SME brand equity obtained from the qualitative studies were used to develop a questionnaire which was structured as follows.

Questionnaire designed for the exploratory survey

This questionnaire was primarily developed for gathering data on consumers' SME brand selection and evaluation of items measuring SME brand equity. For achieving the representativeness of all three business sectors, the questionnaire was customized into three versions specifically for manufacturing, service, and trade SMEs. Each respondent received one of three forms of the questionnaire which consisted of two parts: survey instructions and questions (See the questionnaire in Appendices A, B, and C).

Part 1: Instructions of the survey

The instruction part contains information on research purposes, remarkable attributes of SMEs having been shown to participants of interviews and focus groups, plus the definition of each business sector.

Part 2: Sets of questions

The survey questions were divided into three sections which are questions regarding (1) item evaluation, (2) SME brand selection, and (3) demographic profiles.

The section concerning item evaluation is set to be answered first due to the complexity of questions. List of SME brand equity items derived from document analysis, consumer interviews, and focus groups were shown here. The respondents were instructed to rate the importance of each item on five-point Likert-type scales, with anchors of 1 least important and 5 most important.

After that, the survey participants proceeded to choose their most favorite brand from three choices. The choice “none of the above” was also added to ensure that the participants honestly selected their favorite SME brands.

Then, the questions about demographic background came last to prevent the respondents from losing the information on SME characteristics that they had learned from the beginning part of the questionnaire.

Sample selection

The random sample of this study is drawn from male and female consumers aged 18 – 55 years who have purchased or used products or services of SME brands.

Owing to the statistical requirement for running Exploratory Factor Analysis, a minimum ratio of subjects to variables should range between 5-10: 1 to achieve the stability of the factor structure (Hair, Black, Babin, & Anderson, 2014). Since this study obtained 41 items from the qualitative research, the sample size of this survey was determined to be at least 10 respondents per an item or at least 410 participants.

The multi-stage sampling method used here consisted of the purposive and random sampling. Since this study aims to obtain the data regarding consumers' evaluation on the significance of each initial SME brand equity items, the researcher purposively distributed the questionnaire to individuals who are familiar to and have experience in SME brand purchase and consumption. Then, the random sampling was conducted by handing the questionnaire to every other customer of SME brands joining the event SME One Fest 2018 organized by the office of SMEs Promotion (OSMEP).

Process of data collection and analysis

Before collecting data, a pre-test survey were carried-out with eight consumers whose characteristics are similar to the sample. The amount of time taken for completing a questionnaire as well as suggestions of all pre-screener were noted for improving the questionnaire design. Later, the survey were conducted in the event SME One Fest 2018 during September 6th – 9th, 2018 at Queen Sirikit National Convention Center.

Three versions of the self-administered questionnaire for the manufacturing, service, and trade SMEs were randomly handed out in the equal amount to eligible individuals who agreed to participate until reaching a sufficient number of subjects.

The process of data analysis began with running the descriptive statistics, such as frequency, percentage, mean, and standard deviation to present the overview of demographic variables and all items measured.

Later, the exploration of the underlying constructs of SME brand equity was carried out through the Exploratory Factor Analysis (EFA) (Churchill, 1979) starting from checking data for any outlier values and severe violations of statistical assumptions. Normality tests were performed by using a variety of descriptive statistics, such as computing the skewness value of each item (Hair et al., 2014).

After the data preparation, item-to-total correlations were computed. The correlation matrix obtained were examined whether it showed some systematic covariation among the variables (Dziuban & Shirkey, 1974) by two statistics, including Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity (BS) (Hair et al., 2014). The appropriate value for factor analysis was at least 0.5 of KMO and a non-significant BS (Dziuban & Shirkey, 1974).

Then, an exploratory factor analysis using Principal Component Analysis (PCA) method with varimax rotation was computed. The criteria for determining the number of factors are an eigenvalue greater than 1 and a cumulative percentage of variance explained greater than 60 percent (Nunnally, 1978).

For item deletion of each factor, a combination of statistical heuristics and content validity judgment were used (Haynes, Nelson, & Blaine, 1999). If an item has too low ($< .50$) or too high factor loadings ($> .95$) plus the very high or low correlation with other items, it will be considered for deletion (Bagozzi & Yi, 1988). Items with low loadings and low item-to-total correlations may not measure the same construct (Nunnally & Bernstein, 1994), and items with too high loadings and too

high item-to-total correlations tend to be redundant because they are very similar to other items.

Furthermore, the internal consistency was examined. Cronbach alpha for each factor should be above .75 (Nunnally & Bernstein, 1994). All exploratory factors of SME brand equity were reexamined in the following survey.

2.2 Confirmatory survey of SME brand equity dimensions and the development of competing models

After having completed exploratory factor analysis, another set of data from a second sample was collected to test the hypothetical construct of SME brand equity. Series of Confirmatory Factor Analyses (CFA) and Structural Equation Modeling (SEM) were performed to assess the validity, reliability, and factor congruence of SME brand equity construct as well as to validate three competing models including a second-order factor model, a causal model, and a causal model with relationships between dimensions. Since confirmatory factor analysis requires data of a new sample drawn from the same population of the exploratory study, research techniques used in this survey were almost identical to those having been mentioned earlier. Some different aspects regarding data collection and analysis were described below.

Questionnaire revised for the confirmatory survey

For the establishment of comparability, the questionnaire used for the confirmatory survey was same as the one used in the exploratory stage.

Sample selection

Since the sample of this confirmatory survey should be chosen from the same population of the exploratory study done earlier, characteristics of the respondents and

sampling method mentioned previously was used again to ensure the comparability of the data set used for the exploratory and confirmatory factor analysis.

Process of data collection and analysis

Data were gathered in the same way having been done in the earlier survey. The process of data analysis began with running the descriptive statistics for demographic factors and items of SME brand equity.

For CFA and SEM, the analysis procedure starts from data preparation which included two types of activities: (1) evaluating the distributional assumptions of the estimation method to be used; and (2) analyzing and managing missing data.

Then, the variance-covariance matrix with maximum likelihood estimation was used for the model computation undertaken by AMOS statistical software. According to the psychometric literature, not only equivalent models but alternative models should also be tested whenever possible to identify models which might fit equally or even better (Hoyle & Panter, 1995). This study, therefore, examined three competing models consisting of a second-order factor model, a causal model, and a causal model with relationships between dimensions as proposed earlier.

These models' goodness-of-fit was evaluated through the absolute fit indices which are Likelihood-ratio chi-square (P -value) and the root-mean-square-error of approximation (RMSEA; Steiger & Lind, 1980). Moreover, since this study compared three different models, the comparative fit index (CFI; Bentler, 1990) was also examined.

Step 3: Testing the invariance of SME brand equity model and examining its relationships with consumer response variables

This study aims to: (1) test the SME brand equity model's measurement invariance across business sectors and groups of consumers, and (2) examine the relationship between SME brand equity and consumer response variables. The best competing model were used to measure Tofusan (pasteurized soymilk), Santa fe' (steakhouse), and Eveandboy (beauty store) which was the most popular brand of the manufacturing, service, and trade business sector, respectively. Variables including brand preference, brand loyalty, and word of mouth were chosen to investigate the relationship between SME brand equity and consumer responses. Product involvement and brand engagement were also examined here, as they, according to the literature, can moderate consumers' brand evaluation. For fulfilling objectives mentioned above, three surveys of three SME brands were conducted. The specific details of data collection and analysis are presented below.

Questionnaires used for measuring brand equity of selected SME brands

From the surveys carried out in study 2, each business sector's most-chosen brand or a total of three brands is identified. These selected brands were not in the same product category. Moreover, long list of questions could result in the respondents' fatigue. As such, three questionnaires differing in SME brand were created. Each consumer was asked to complete only one version of three forms that consist of the following parts (see the questionnaire in Appendix D).

Part 1: Survey instruction

For ensuring the privacy of participants and increasing response rate, the instruction part clarified research purposes, uses of survey data, and the researcher's contact information.

Part 2: Questions

All questions were grouped into three sections including (1) consumer characteristics, (2) SME brand equity and consumer response variables, and (3) demographic background.

First of all, consumers were asked to provide the information on their own characteristics in the aspects of product involvement and engagement with one of the three SME brands. Then, the respondents continued to evaluate the equity of the brand they had chosen followed by rating their responses to that brand. The demographic questions were set to the last part to allow the survey participants to concentrate more on other complex items.

Most scales used in this questionnaire were developed for this research project but some of them were chosen from the existing studies. Twelve items derived from the exploratory and confirmatory factor analysis were listed on the questionnaire to measure the core dimensions of SME brand equity. In particular, *brand functionality* was measured by five items ($\alpha = .89$) including “The brand's products/ services are safe. (item 16)” “The brand offers quality product/service. (item 17)” “The brand's products and services are actually useful. (item 20)” “The brand's marketing claims are accurate. (item 21)” “The brand maintains the quality of its product/service. (item 22)”. *Brand authenticity* was assessed by three items ($\alpha = .73$) which are “The brand is famous for its product/service. (item 8)” “The brand is the original of the particular

product/ service. (item 9)” “The brand gives you an experience you never had before. (item 27)”. *Brand attentiveness* was evaluated from four items ($\alpha = .84$) including “The brand keeps your privacy. (item 32)” “The brand has post-purchase service. (item 33)” “The brand gives you the best offer. (item 34)” “The brand has many communication channels. (item 35)”

For testing Keller’s (2001) concept of brand equity, brand awareness and brand resonance were added to measure SME brand equity besides the core dimensions empirically derived from consumer surveys in study 2. *Brand awareness* was measured by the set of 5 items ($\alpha = .90$) adapted from Oh’s (2000) questions including “Brand...is familiar.” “Brand...is well known.” “Brand...is visible.” “Brand...is heard a lot.” “Brand...is famous.” *Brand resonance* was adapted from Wang et al.’s (2008) scale ($\alpha = .93$) consisting of 6 items which are “I would like to buy brand...” “I consider myself to be loyal to brand...” “I am willing to recommend brand... to my friends.” “I am used to brand...” “Brand...would be my first choice.” “I will not buy other brands if brand...is available at the store.”

Other measures based on prior research are consumers’ characteristics and brand responses. The details of scales used are provided as follows.

Consumer characteristics

Moderating variables examined here are consumers’ product involvement and brand engagement. These individual characteristics have been noted by many researchers for their effects on consumer brand evaluation. Thus, valid and reliable scales of the two moderators are selected from previous work. *Product involvement* was measured with the 3 items adapted from Mittal (1995) ($\alpha = .86$). All questions include “I would care a great deal when selecting to buy one from many types and

brands of product...available in the market.” “It is important to me to make a right choice of product...” “I am concerned about the outcome of my choice when making my selection of product...”

Brand engagement measure was adapted from Sprott et al.’s (2009) scale ($\alpha = .92$) containing 8 items which are “I have a special bond with brand...” “I consider brand... to be a part of myself.” “I often feel a personal connection between brand...and me.” “Part of me is defined by brand...” “I feel as if I have a close personal connection with brand...” “I can identify with brand...” “There are links between brand...and how I view myself.” “Brand...are an important indication of who I am.”

Consumer response variables

To understand the relationship of brand equity and consumers’ brand responses, the researcher chose three variables that are suitable for the SME setting. Quality scales of all consumer responses including brand preference, brand loyalty, and word of mouth were obtained from past studies. *Brand preference* was assessed from 5 items adapted from Chang and Liu (2009) ($\alpha = .86$). All questions are “I think brand ... is superior to other competing brands.” “I prefer brand ...”

“When considering purchasing ..., I would consider brand ... first.” “I am not interested in trying other brands.” “I will not replace brand ... with other brands.”

Brand loyalty was evaluated by Yoo and Donthu’s (2001) scale ($\alpha = .86$) that consists of 3 items: “I consider myself to be loyal to brand ...” “Brand...would be my first choice.” “I will not buy other brands if brand ...is available at the store.” *Word of mouth* was measured with Ismail and Spinelli’s (2012) 4 items ($\alpha = .90$) that include “I encourage friends and family to buy brand ...” “I recommend brand ...whenever

anyone seeks my advice.” “If the brand has been mentioned in a conversation, I would recommend brand ...” “I have actually recommended brand ...to my friends or family or both.” All item responses were on a 5-point Likert scale, ranging from 1 for ‘strongly disagree’ to 5 for ‘strongly agree.’

Sample selection

For the effectiveness of brand equity measurement, the researcher determined a specific time frame of consumers’ brand experience (Aaker, 1996). Individuals eligible for the surveys are those who have recently purchased or used one of the three SME brands’ products or services at least once within a month (Tofusan), two months (Santa fe’), and three months (Eveandboy).

In case consumers have experienced more than one brand, they are asked to evaluate the brand that is the most familiar to them. Such criteria are set to maximize the accuracy of data obtained.

Numbers of participants for the three SME brands were equally determined by Soper’s (2017) priori sample size calculator to obtain estimates of an adequate sample size for conducting confirmatory factor analysis and structural equation modeling. A statistically required sample size for the measurement model consisted of 9 latent variables, 35 observed variables, 0.3 anticipated effect size, 0.8 desired statistical power level, and .05 probability level was 184 respondents for each brand or 552 samples in total.

Process of data collection and analysis

First and foremost, a quick interview with each potential participant was conducted to screen for individuals who have recently experienced one of the three SME brands. Then, a self-administered questionnaire of a specific brand was given to

consumers who was willing to provide their information until gaining a sufficient number of subjects for each SME brand.

The process of data analysis started from running the descriptive statistics, such as frequency, percentage, mean, and standard deviation to present the overview of demographic variables, consumer characteristics, SME brand equity, and consumer response variables. After that, the measurement invariance of SME brand equity model was examined. The best-fitting model of SME brand equity obtained from study 2 was combined with two dimensions including brand awareness and brand resonance for the theory testing purpose. The model, then, was checked by AMOS statistical software for its invariance of factor patterns, factor loadings, and pattern of causal structure between heterogeneous groups of consumers as well as across business sectors.

Among individuals with different characteristics, the measurement invariance was performed in an overall manner. Mean was used as a cut-off value to split all consumers into two groups which are the respondents who score high and those who score low on product involvement, brand engagement, and SME brand equity.

For the examination of measurement invariance across business sectors, the SME brand equity model was checked whether its factor loadings, factor patterns, and pattern of the causal structure are invariant between manufacturing, service, and trade settings. In both cases of invariance evaluation, multi-group confirmatory factor analysis or multi-group structural equation modeling was computed, depending on the type of the fittest model derived from study 2. The focus of the validation attempts is on the acceptability of the SME brand equity model among consumers differing in their characteristics and across business sectors.

The relationship of SME brand equity and three consumer response variables was examined in the context of three business sectors including manufacturing, service, and trade SMEs. The data for each industry were 184 customers assessing the SME brand equity of a selected brand. Tofusan, Santa fe', and Eveandboy were chosen for the manufacturing, service, and trade sector, respectively.

The structural equation modeling (SEM) was analyzed via the IBM SPSS AMOS 22. The quality model should have a significant Likelihood-ratio chi-square (*P*-value), less than .06 Root-mean-square error of approximation (RMSEA), and at least .95 Comparative fit index (CFI) (McCoach et al., 2013).



Chapter 4

Results of step 1

The results of this study were divided into two chapters. Chapter 4 reported the findings derived from the qualitative research of the step 1. Chapter 5 explained the quantitative results of step 2 and 3.

With the purposes of developing a valid, reliable, and generalizable measurement model of SME brand equity and examining its relationship with consumer response factors, this study was conducted in three interrelated step. The first step aims to create a pool of initial items that tap the constructs of SME brand equity. Qualitative data from documents and actual consumers varying in their background were collected by three techniques including document analysis, semi-structured interview, and focus group. The results of each data gathering method in step 1 are presented here respectively.

Document analysis of SME brand communications

To get a first glimpse of the measurement scale of SME brand equity, the step 1 of this study started from the analysis of documents regarding SME brands' marketing communication messages as well as consumers' opinions towards SME brands.

For the analysis method, as the materials mentioned above mostly need some degree of interpretation to assign the meaning (Bernard, 2013), it is inappropriate for this study to use the quantitative content analysis focusing on specific words that contain the manifest meaning (Berelson, 1952; Kracauer, 1952).

Therefore, the approach of qualitative content analysis (QCA) was followed here because this method allows researchers to concentrate on the latent meaning of the messages and their contexts (Schreier, 2012). Moreover, QCA's coding frames are always partly data-driven (Schreier, 2012), so this method is a useful tool for this study to explore and capture the specific aspects of SME brand equity that have not existed in the branding literature.

Units of analysis

The units of analysis here were the brand communication messages and customer feedback of 40 SME brands which are business-to-consumer (B2C) companies in manufacturer, service, or trade sectors according to the business data warehouse of Department of Business Development (DBD) (2018). They also have 50 – 200 employees with total assets that are 50 - 200 million THB (OSMEP, 2011). Moreover, all of them are the successful SME brands that received the SMEs National Award from Office of SMEs Promotion (OSMEP) from 2009 to 2016. (See Table 4.1)

The researcher used the brand names as primary keywords to search for the relevant details of each SME brand appeared on the internet and the databases while offline data were obtained from Union Catalog of Thai Academics Libraries (UCTAL). The data gathered from the 40 selected SME brands consisted of 929 documents that could be grouped, according to its main idea, into three types which include

- (1) Messages regarding SMEs' brand components, such as unique brand attributes and brand values published on SMEs' corporate websites and their Facebook brand pages;
- (2) The branding details in SME brand owners' interviews and the analysis of marketing experts published in newspapers (Daily News, Komchadluek, Bangkokbiznews, Manager, Matichon, Post Today, Prachachart, Thairath, Thansettakij, and The Nation) as well as magazines (Forbes Thailand, K SME Inspired, Positioning Magazine, Phuket Local, Sentangsedtee, and SME Cheechongruay);
- (3) Feedback from customers appearing on each Facebook brand page's customer review section, e-commerce platforms (www.agoda.com, www.hotel.com, and www.tripadvisor.com), internet forums (www.pantip.com, www.jeban.com, and www.wongnai.com), contents generated by online influencers and typical consumers, as well as existing studies on consumers' perception of a specific SME brand (Sae Heng, 2011; Sangchanchai, 2016; Thongchon et al., 2016) as shown in Table 4.1.

Table 4.1: Profiles of selected SME brands and their brand communication messages

Business profile of selected SME brands	Brand communication messages								
	Brand component		Branding details			Customer feedbacks			
	Web site	FB page	News paper	Mag	FB review	E-com merce	Internet forum	Blog	Prior study
Manufacturing sector									
Small-sized brand									
1. Albedo (Leather bag)	-	51	4	1	-	-	-	-	-
2. Amorn Phuket Pearl (Jewelry)	1	142	1	1	33	-	-	-	-

Table 4.1: --continued

Business profile of selected SME brands	Brand communication messages								
	Brand component		Branding details			Customer feedbacks			
	Web site	FB page	News paper	Mag	FB review	E-com merce	Internet forum	Blog	Prior study
3. Baanbenjawan (Fragrance, Cosmetics)	-	-	1	1	-	-	-	-	-
4. Baanmakam (Snacks)	-	-	3	2	-	-	-	-	-
5. Buabhat (Handicraft)	1	-	1	1	-	-	-	-	-
6. Cheewawithee (Natural product)	1	-	3	-	-	-	-	-	-
7. Chern Chim (Snacks)	1	-	1	-	-	-	-	-	-
8. Daddy Dough (Pastries)	1	-	1	2	63	-	-	-	-
9. Expert Gems (Jewelry)	1	-	3	1	-	-	-	-	-
10. Fasttechno (Wooden furniture)	-	-	4	1	-	-	-	1	-
11. Flowerfood (Snacks)	1	-	2	1	6	-	-	-	-
12. Hawaii Thai (Furniture)	1	-	2	1	-	-	-	1	-
13. Khaokho Talayphu (Natural product)	1	-	-	-	51	-	1	-	-
14. Khaola-or Bhesat (Herbal medicine)	1	-	1	-	-	-	-	-	-
15. Kiosk (Metal furniture)	-	33	2	-	-	-	1	-	-
16. May Bead (Jewelry)	1	-	-	-	14	-	-	1	-
17. Moddang rice (Rice bran oil)	1	-	2	-	-	-	-	-	-
18. N and B Pizza Crepe (Snacks and bevarages)	1	-	1	1	72	-	-	-	-
19. Pankamhom (Thai dessert)	1	-	1	-	21	-	24	-	-
20. Pornthip Phuket (Instant food)	1	-	2	2	7	-	-	1	-
21. Rungchareon (Seasonings)	-	-	1	1	-	-	-	-	-
22. The Waffle (Pastries)	1	-	1	2	17	-	-	-	1

Table 4.1: --continued

Business profile of selected SME brands	Brand communication messages								
	Brand component		Branding details			Customer feedbacks			
	Web site	FB page	News paper	Mag	FB Review	E-com merce	Internet forum	Blog	Prior study
23. Waydhanar (Thai snacks)	-	-	1	1	-	-	1	2	-
24. Wel-B (Dried fruit)	1	-	1	-	17	-	-	1	-
Medium-sized brand									
25. Chaosua (Meat processing)	1	-	1	-	36	-	-	-	-
26. Gogi (Seasonings)	1	-	-	3	-	-	-	-	-
27. Tofusan (Cereal beverage)	1	27	-	-	-	-	-	-	1
28. Tropicana oil (Coconut oil)	1	-	1	-	19	-	-	1	-
Service sector									
Small-sized brand									
29. Globish (Language school)	1	36	1	-	-	-	-	-	-
30. UPD Broker (Insurance broker)	1	-	1	2	-	-	-	-	-
31. Wangdum Mountain Camp (Hotel and resort)	1	-	2	-	22	-	-	2	-
Medium-sized brand									
32. Baan Amphawa (Resort and spa)	1	-	-	-	21	31	-	-	-
33. Noomsao Tour (Travel agency)	1	-	6	-	40	-	1	-	1
34. Royal Diamond (Hotel)	-	23	-	1	-	100	1	2	-
Trade sector									
Small-sized brand									
35. Blezz (Tiles)	-	-	-	-	33	-	-	1	-
36. Dairy Farm (Dairy product selling)	1	-	-	-	-	-	-	-	-
37. Frameless Design (Sanitary ware)	1	-	2	-	13	-	-	-	-
38. Ruenmai Baimon (Silk)	1	-	1	-	16	-	-	-	-
39. Udon Auto Glass (Car accessories)	1	-	2	-	43	-	-	-	-
40. Warrix (Clothes)	-	-	1	2	91	-	-	-	-
Total	30	119	56	15	533	131	29	13	3

Units of coding

As the document analysis of this study was conducted by two independent coders, each unit of analysis was segmented into several units of coding by the formal criterion to save time and to increase the ease of working (Schreier, 2012). In particular, a document was divided into sentences based on Thai grammar rule, so the end and the beginning of each segment were pretty obvious. Then, the sentences irrelevant to the branding of selected SMEs were eliminated. Finally, the units of coding used for the qualitative content analysis consisted of 1,564 sentences in total. (See Table 4.2)

The building and evaluating of the coding frame

After the preparation of the units of coding, the coding frame was built according to the qualitative content analysis approach (Schreier, 2012). Here the researcher developed the coding frame by data-driven strategies. The subcategories or the items that tapped aspects of SME brand equity were listed by exploring the sentences regarding brand communications of selected SME brands. Due to a large number of materials, our data-driven coding frame was developed from 40% of the content systematically randomized from every chosen brand.

The open coding strategy adapted from grounded theory (Strauss & Corbin, 1998) was used to build the coding frame throughout the tryout and the revision process. In other word, the coding frame was created from the data that were thematically grouped into categories or the initial items of SME brand equity.

To facilitate the coding process, the researcher provided the conceptual definition and the example for each category. For instance, the item “the brand is unique” means that the brand possesses the quality that is different from other brands.

The example of quotes categorized into this item is “we have a secret recipe for the flour used for making doughnuts”. All 38 items qualitatively derived from the document analysis were listed with their definitions and examples to enhance the understanding between coders and to enrich the findings (see Appendix G).

The data-driven coding frame was tried out and revised to the final version (See Appendix G) by two coders to achieve the content validity and intercoder reliability. Intercoder reliability for the trial and main coding periods were 62% and 70%, respectively.

Besides the data-driven categories derived from the document analysis, this study added items regarding brand awareness and brand resonance to the coding frame to develop the conceptual and operational definitions of SME brand equity in the way that can provide empirical evidence for Keller’s (2001) brand equity pyramid. Five items of brand awareness (Oh, 2000) and six items of brand resonance (Wang et al. 2008) were items theoretically added to the coding frame (see Appendix G) for examining Keller’s (2001) concept of brand equity pyramid.

Items derived from the document analysis of selected SMEs’ branding messages

The qualitative content analysis yielded a set of subcategories comprised of 38 items describing the qualities that an SME with a high level of brand equity should possess. (see Table 4.2). Five items most frequently appeared in the documents included “The brand offers quality product/service” (152 times or 9.72%), “The brand determines reasonable pricing” (134 times or 8.57%), “The brand’s products/ services are safe” (99 times or 6.33%), “The brand is unique” (95 times or 6.07%), and “The brand expresses its willingness to help” (92 times or 5.88%). Five items least

frequently found in the documents were “The brand has post-purchase services, such as return and refund” (7 times or 0.45%), “The brand responds positively to your special request” (7 times or 0.45%), “The brand is the original of the particular product/service” (5 times or 0.32%), “The brand uses customer feedback to improve its business” (5 times or 0.32%), and “You can easily communicate with the brand” (5 times or 0.32%).

In the aspect of items regarding brand awareness and brand resonance theoretically added to the coding frame, the document analysis yielded only one item that was similar to an item of brand awareness. In particular, item 4 “the brand is famous for its product/service” and item “Brand...is famous” of brand awareness both mentioned the fame of the brand. However, item 4 highlighted the brand’s fame originating from its product/service while the item measuring brand awareness focused on the brand fame in a broad sense. As such, brand awareness and brand resonance were not qualitatively derived from the document analysis, and had to be put into the SME brand equity measurement model only after the initial steps of SME brand equity scale development.

Table 4.2: Initial items of SME brand equity

Item	Frequency	Percent
1. The brand is unique. มีเอกลักษณ์ที่แตกต่างจากแบรนด์อื่น ๆ	95	6.07
2. The brand is the expert in its field. มีความเชี่ยวชาญในการผลิตสินค้า/บริการประเภทนั้น	65	4.16
3. The brand met certain quality standards. ผ่านการรับรองคุณภาพจากหน่วยงานที่น่าเชื่อถือ	58	3.71
4. The brand is famous for its product/service. โด่งดังในการผลิตสินค้า/บริการประเภทนั้น	14	0.90
5. The brand builds its product/service meticulously. สร้างสรรค์สินค้า/บริการอย่างดี เข้าถึงรายละเอียดของลูกค้า	23	1.47
6. The brand is involved in its local community. ช่วยสนับสนุนผู้คนในท้องถิ่น	35	2.24

Table 4.2: --continued

	Item	Frequency	Percent
7.	The brand has a fresh appearance. มีความทันสมัย	35	2.24
8.	The brand fits into your lifestyle. สอดคล้องกับการใช้ชีวิต (ไลฟ์สไตล์) ของคุณ	28	1.79
9.	The brand creatively produces new product/service. มีสินค้า/บริการ ที่แปลกใหม่	60	3.84
10.	The brand offers a wide variety of the particular product/service. มีสินค้า/บริการ ให้เลือกหลากหลาย	79	5.05
11.	The brand's products/ services are safe. สินค้า/บริการ มีความปลอดภัย	99	6.33
12.	The brand does not harm the environment. ไม่ทำลายสิ่งแวดล้อม	10	0.64
13.	The brand determines reasonable pricing. สินค้า/บริการ มีคุณภาพเหมาะสมกับราคา	134	8.57
14.	The brand provides helpful information on buying product/service. แนะนำข้อมูลที่เป็นประโยชน์ในการเลือกซื้อสินค้า/บริการ	28	1.79
15.	The brand makes you happy. ทำให้คุณรู้สึกมีความสุขเมื่อใช้แบรนด์นี้	33	2.11
16.	The brand offers quality product/service. สินค้า/บริการมีคุณภาพดี	152	9.72
17.	The brand's products/services are worth buying. สินค้า/บริการ ทำให้คุณรู้สึกคุ้มค่า	49	3.13
18.	The brand continuously improves itself. มีการพัฒนาอย่างต่อเนื่อง	86	5.50
19.	The brand has product/service that impresses you. มีสินค้า/บริการ ที่คุณถูกใจ	46	2.94
20.	The brand's products and services are actually useful. สินค้า/บริการ มีประโยชน์ใช้งานได้จริง	46	2.94
21.	The brand has something that cannot be found elsewhere. มีสิ่งที่แบรนด์อื่น ๆ ยังไม่มี	19	1.21
22.	The brand gives you an experience you never had before. ทำให้คุณได้ประสบการณ์แปลกใหม่อย่างที่ไม่เคยได้รับมาก่อน	28	1.79
23.	The brand exceeds your expectations. ทำให้คุณพอใจเกินความคาดหมาย	12	0.77
24.	The brand is friendly. ให้ความรู้สึกเป็นกันเอง	60	3.84
25.	The brand expresses its willingness to help. ให้ความช่วยเหลือคุณอย่างเต็มใจ	92	5.88
26.	The brand answers your questions frankly. ให้ข้อมูลเกี่ยวกับสินค้า/บริการตามความเป็นจริง	12	0.77
27.	The brand keeps your privacy. รักษาความเป็นส่วนตัวของคุณ	86	5.50
28.	The brand has post-purchase services, such as return and refund. มีบริการหลังการขาย เช่น ให้เปลี่ยนสินค้าหรือคืนเงิน	7	0.45
29.	The brand responds positively to your special request. คุณสามารถปรับเปลี่ยนรูปแบบของสินค้า/การบริการได้ตามคำสั่งซื้อ	7	0.45

Table 4.2: --continued

Item	Frequency	Percent
30. The brand matches your taste. ตรงกับรสนิยมของคุณ	5	0.32
31. The brand's marketing claims are accurate. มีสินค้า/บริการ ที่ตรงตามคำโฆษณา	16	1.02
32. The brand maintains the quality of its product/service. รักษามาตรฐานของสินค้า/บริการ	36	2.30
33. The brand gives you the best offer. ให้สิทธิพิเศษคุณได้มากกว่าแบรนด์อื่น ๆ	14	0.90
34. It is convenient to purchase products/services of the brand. สินค้า/บริการ หาซื้อได้ง่าย	19	1.21
35. The brand is the original of the particular product/service. เป็นต้นตำรับของสินค้า/บริการชนิดนั้น	5	0.32
36. The brand uses customer feedback to improve its business. นำความคิดเห็นของลูกค้ามาปรับปรุงพัฒนา	5	0.32
37. The brand takes social responsibility to its heart. มีความรับผิดชอบต่อสังคม	10	0.64
38. You can easily communicate with the brand. มีช่องทางให้คุณติดต่อสื่อสารได้อย่างสะดวก	5	0.32
Total	1,564	100.00

Semi-structured interviews of four generations of consumers

This study conducted interviews with actual consumers based on several open-ended questions to learn about consumers' perspectives on SME brand evaluation. 40 knowledgeable and willing participants who know at least 5 of 40 SME brands used in the document analysis are eligible to take part in the semi-structured interview. All 40 interviewees (20 males and 20 females) were divided equally into of the four generations: Baby boomers (53 – 67 years old), Generation X (38 – 52 years old), Generation Y (23 – 37 years old), and Generation Z (18 - 22 years old) (McCrinkle & Wolfinger, 2014). The interview participants' profiles were presented in Table 4.3.

Table 4.3: Profiles of the four generations of interviewees

Name	Age	Occupation
<u>Group 1: Baby boomers</u>		
Male		
1. Chaiyaporn Sakulmaswong	54	Business owner
2. Narong Abhaipolchan	57	Government official
3. Pook Thepathum	56	Freelancer
4. Suksart Wongsatjanan	58	Value investor
5. Veeravit Vivadhanavanich	69	Government official
Female		
6. Arunsri Leeratpong	60	Housewife
7. Duanghathai Chokpitakkul	59	Business owner
8. Kingkaew Chantrachoo	58	Business owner
9. Marie Elise	59	Business owner
10. Paichittree Suthanan	58	Business owner
<u>Group 2: Generation X</u>		
Male		
1. Bhurapha Panthumakomol	38	Musician
2. Itthipol Waranusupakul	45	Academic lecturer
3. Khanchai Athikiat	43	Academic lecturer
4. Suchart Boonmuang	47	University staff
5. Waroth Kayunrawat	40	Academic lecturer
Female		
6. Aim-on Srisuwan	51	University staff
7. Ruthaiwan Chokthaweepanich	39	State enterprise staff
8. Sunanta Sakulmaswong	46	Business owner
9. Supicha Tantithanakorn	40	Business owner
10. Warat Kesornraj	41	Company employee
<u>Group 3: Generation Y</u>		
Male		
1. Kunakorn Karbkham	30	Business owner
2. Samak Puensongkram	29	Business owner
3. Thammasit Vongsetsakul	36	Academic lecturer
4. Thitipong Chantrachoo	23	Bank clerk
5. Wacharasak Sudlha	25	PhD student
Female		
6. Chenisa Vimtraimate	31	State enterprise staff
7. Jurairat Kongthan	27	Company employee
8. Nipapan Srivipat	24	Nurse
9. Parinada Kaewthong	27	Government official
10. Pimploy Poohgunngam	23	Singer
<u>Group 4: Generation Z</u>		
Male		
1. Bhuphamek Poohgunngam	18	Student
2. Nontharit Maniam	21	Student
3. Nachaphol Imchan	18	Student
4. Sukrit Chotechanalapin	18	Student
5. Kullapat Srikong	18	Student

Table 4.3: -- continued

Name	Age	Occupation
<u>Group 4: Generation Z</u>		
Female		
6. Chuleekorn (Pseudonym)	30	Student
7. Laksika Phanwitthayasak	29	Student
8. Prakaimas Khemnoo	36	Student
9. Saranya Chanathiranart	23	Student
10. Suchada Suksrimuang	25	Student

The interview results were presented in the overall manner due to the protection of participants' privacy and confidentiality. The answers were categorized into two parts. The first part was the *lists of SME brands familiar to the four generations of participants*. As recognizing is easier than recalling a brand, each participant first reported SME brands that they knew from the list of 40 awarded SMEs. According to Table 4.4, three awarded brands most known across four generations were the manufacturing brands called Chaosua, Gogi, and Tofusan. Three brands' total frequency of recognition were 26, 26, and 22, respectively. In the domain of service and trade sector, none of the awarded SMEs was known in all four generations.

Then, the interviewees were asked to recall some of their favorite SME brands that were not in the list of awarded SMEs. Table 4.5 showed that five brands were recalled by at least two of interviewees differing in their generation. Four brands belong to the service sector (Canton suki [Sukiyaki], Jeffer [Steakhouse], King kong [Grill restaurant], Shabu Nangnai [Shabu Shabu]), and one brand was in the trade business (Raan Je Leng [Beauty store]).

Data regarding the well-known and favorite SME brands of each generation were collected to check the participants' understanding about SME brands and to get

some choices of product categories and SME brands later used for the brand selection.

Table 4.4: Awarded SME brands that were recognized by each generation of consumers

Business profile of awarded SME brands used in the document analysis	Frequency of consumers familiar to the brand				Total
	Baby boomer	Gen-X	Gen-Y	Gen Z	
Manufacturing sector					
Small-sized brand					
1. Albedo (Leather bag)	1	4	1	-	6
2. Amorn Phuket Pearl (Jewelry)	-	1	-	1	2
3. Baanbenjawan (Fragrance, Cosmetics)	1	-	-	1	2
4. Baanmakam (Snacks)	2	6	5	7	20
5. Buabhat (Handicraft)	1	-	-	-	1
6. Cheewawithee (Natural product)	1	3	1	1	6
7. Chern Chim (Snacks)	-	1	-	-	1
8. Daddy Dough (Pastries)	1	5	3	-	9
9. Expert Gems (Jewelry)	-	2	-	-	2
10. Fasttechno (Wooden furniture)	1	1	-	-	2
11. Flowerfood (Snacks)	2	4	3	3	12
12. Hawaii Thai (Furniture)	2	-	-	-	2
13. Khaokho Talayphu (Natural product)	1	1	2	2	6
14. Khaola-or Bhesat (Herbal medicine)	6	5	2	-	13
15. Kiosk (Metal furniture)	1	3	2	-	6
16. May Bead (Jewelry)	-	-	-	-	0
17. Moddang rice (Rice bran oil)	-	-	-	-	0
18. N & B Pizza Crepe (Snacks)	1	3	2	4	10
19. Pankamhom (Thai dessert)	1	1	1	-	3
20. Pornthip Phuket (Instant food)	-	1	1	1	3
21. Rungchareon (Seasonings)	-	3	-	-	3
22. The Waffle (Pastries)	1	4	1	1	7

Table 4.4: --continued

Business profile of awarded SME brands used in the document analysis	Frequency of consumers familiar to the brand				Total
	Baby boomer	Gen-X	Gen-Y	Gen Z	
23. Waydhanar (Thai snacks)	-	-	-	-	0
24. Wel-B (Dried fruit)	2	3	2	4	11
Medium-sized brand					
25. Chaosua (Meat processing)	10	5	4	7	26
26. Gogi (Seasonings)	9	4	5	8	26
27. Tofusan (Cereal beverage)	7	5	4	6	22
28. Tropicana oil (Coconut oil)	1	2	2	-	5
Service sector					
Small-sized brand					
29. Globish (Language school)	-	-	-	1	1
30. UPD Broker (Insurance broker)	1	-	-	-	1
31. Wangdum Mountain Camp (Hotel and resort)	-	-	-	1	1
Medium-sized brand					
32. Baan Amphawa (Resort and spa)	2	5	-	3	10
33. Noomsao Tour (Travel agency)	5	6	2	-	13
34. Royal Diamond (Hotel)	1	-	-	-	1
Trade sector					
Small-sized brand					
35. Blezz (Tiles)	-	-	-	-	0
36. Dairy Farm (Dairy product selling)	2	7	-	6	13
37. Frameless Design (Sanitary ware)	1	-	-	-	1
38. Ruenmai Baimon (Silk)	1	1	-	-	2
39. Udon Auto Glass (Car accessories)	-	-	-	-	0
40. Warrix (Clothes)	1	2	-	2	5

Table 4.5: Favorite SME brands recalled by each generation of consumers

Favorite SME brands reported by consumers	Frequency of consumers familiar to the brand				Total
	Baby boomer	Gen-X	Gen-Y	Gen Z	
<u>Manufacturing sector</u>					
1. Chaonang (Cosmetics)	1	-	-	-	1
2. Daddy and the muscle (Clothes)	-	-	1	-	1
3. Hund (Clothes)	-	-	1	-	1
4. Jamio Shoes (Rubber shoes)	-	-	1	-	1
5. Jone 500 (Clothes)	-	-	1	-	1
6. Kod Yued (Clothes)	-	-	-	1	1
7. Kok liang soap (Herbal soap)	1	-	-	-	1
8. Looqbook (Cosmetics)	-	-	1	-	1
9. Naraya (Fabric bag)	-	-	1	-	1
10. Seacret (Cosmetics)	-	1	-	-	1
11. Sivanna (Cosmetics)	-	-	-	1	1
12. Thai Denmark (Dairy product)	-	-	1	-	1
13. Thewin (Leather goods)	1	-	-	-	1
14. Warp (Clothes)	-	-	-	1	1
<u>Service sector</u>					
15. Bake a wish (Bakery)	-	-	-	1	1
16. Cake tonkok (Bakery)	-	1	-	-	1
17. Canton suki (Sukiyaki)	1	1	1	-	3
18. Cha tra mue (Beverage)	-	1	-	-	1
19. Fin Sushi (Japanese restaurant)	-	-	-	1	1
20. Jeffer (Steakhouse)	-	-	1	1	2
21. Jood Sam Jood (Desserts)	-	-	-	1	1
22. King kong (Grill restaurant)	1	-	2	-	3
23. Krua Je Dang (Seafood restaurant)	1	-	-	-	1

Table 4.5: --continued

Favorite SME brands reported by consumers	Frequency of consumers familiar to the brand				Total
	Baby boomer	Gen-X	Gen-Y	Gen Z	
24. Mae Sri Ruen (Thai restaurant)	-	1	-	-	1
25. Maneememore (Shabu Shabu)	-	-	1	-	1
26. Neversaycutz (Barber shop)	-	1	-	-	1
27. Nine limit (Barber shop)	-	1	-	-	1
28. Nooyoo (Ear piercing)	-	1	-	-	1
29. Ob Aroi (Seafood restaurant)	2	-	-	-	2
30. Salad factory (Salad restaurant)	-	1	-	-	1
31. Shabu Nangnai (Shabu Shabu)	1	2	-	-	3
32. White day Patisseries (Desserts)	-	-	1	-	1
33. You and I (Shabu Shabu)	-	-	1	-	1
Trade sector					
34. Mongkolpradit (Sporting goods store)	1	-	-	-	1
35. Raan Je Leng (Beauty store)	1	-	1	-	2

The second part of the interview results is the opinions of consumer participants about qualities/characteristics of the best SME brands. The researcher thematically analyzed and grouped the answers of each generation using the coding frame of the document analysis. New issues emerging from the interviews were treated as new items and were added into the pool of existing items.

The four-generation interviewees mentioned 25 characteristics of the strong SME brands. 22 of them are existing items derived from the document analysis. Interestingly, three new items emerged from the baby boomer, Gen-X, and Gen-Y interviewees (The brand's story is interesting. [New item 1]; The brand maintains its uniqueness. [New item 2]; The brand shows you that it really cares. [New item 3]).

The interviews of four-generation participants varied in the most-mentioned issues. The baby boomers highlighted the issue that the best SME brands should offer quality products/services (Item 16) (see Table 4.6). Gen-X interviewees emphasized the attribute regarding how well the brand maintains the quality of its product/ service (Item 32) (see Table 4.7). Gen-Y participants equally mentioned three aspects about the brand uniqueness (Item 1), reasonable pricing (Item 13), and perceived quality (Item 16) (see Table 4.8). Lastly, the issue regarding the brand's fresh appearance (Item 7) was the only one that was mentioned twice among Gen-Z consumers participating in the interviews (see Table 4.9). In line with the document analysis results, brand awareness and brand resonance items were not noticed by consumer participants focusing merely on the brand evaluation. Therefore, these two components had to be put into the model only after the initial steps of SME brand equity scale development.

Table 4.6: Characteristics of the best SME brands in the opinion of baby boomer participants

Items derived from document analysis	Interview quote
1. The brand is famous for its product/service. (Item 4)	- I know the brand because it was a famous one among Badminton players.
2. The brand has a fresh appearance. (Item 7)	- The shop looked modern.
3. The brand does not harm the environment. (Item 12)	- I like this brand because its shoes were made from the natural rubber. It is very eco-friendly.
4. The brand provides helpful information on buying product/service. (Item 14)	- SME owners should introduce their products themselves. If customers know the details, they probably become more interested in the brand.
5. The brand offers quality product/service. (Item 16)	- Je Dang's food was served in a very large portion. Caper fish is large and fresh. - Quality is the heart of SMEs. - Chaonang cosmetics is a quality Thai brand. - They made the all kinds of meatballs themselves so the food is very fresh and tastes very good.

Table 4.6: --continued

Items derived from document analysis	Interview quote
6. The brand's products/ services are worth buying. (Item 17)	- I save a lot of money. The food here is cheaper than many places'. - The price is reasonable.
7. The brand gives you the best offer. (Item 33)	- I like Kingkong because it has a great deal when compared to other places. For example, come 4 pay 3.
8. It is convenient to Purchase products/ services of the brand. (Item 34)	- Some SME brands' product are very easy to buy, as they were sold in 7-11 convenient stores. - I like dining at Ob Aroi because this restaurant is not too far from my home.
9. You can easily communicate with the brand. (Item 38)	- I can check the brand's website for the updated promotion. The webpage is beautiful and user-friendly. The customers can order via both online and offline channels.
New item obtained from the interview	Interview quote
10. The brand's story is interesting. (New item 1)	- I like the brand that has the background story. I think the brand narratives make products and services more appealing.

Table 4.7: Characteristics of the best SME brands in the opinion of Gen-X participants

Items derived from document analysis	Interview quote
1. The brand is famous for its product/service. (Item 4)	- I knew the brand from a television show, Krabee mue nueng. This tv program introduced famous and top-selling SME brands. - My favorite SME brand is Kok Liang. One day while riding on the bus to Chulalongkorn university, I saw the shop located at Hua Chang bridge. I got off the bus immediately to check it out. I found that this brand was very famous for its herbal soap.
2. The brand offers a wide variety of the particular product/service. (Item 10)	- They offer a wide variety of food. The menu consists of Thai, international, even northeastern Thai food.
3. The brand's products/ services are safe. (Item 11)	- I feel safe when piercing my ears here. The equipment is very hygienic.
4. The brand provides helpful information on buying product/service. (Item 14)	- When I have a haircut here, the barber teaches me how to set my hair with the styles I wish. - I can ask the barber for the opinion if I don't know which style to choose for my new haircut.
5. The brand's products/ services are worth buying. (Item 17)	- Tewn shops are located in the shopping malls but the price is not so high. - The food is okay and the price is reasonable. - It was expensive, but it is worth the price.
6. The brand has product/service that impresses you. (Item 19)	- I like strong-flavor food. The food here was quite sour and spicy. - That's why I love this restaurant so much.
7. The brand has post-purchase services, such as return and refund. (Item 28)	- In case of defective goods, an SME brand should allow customers to return the product and get a refund. - This brand has a life-time guarantee.
8. The brand matches your taste. (Item 30)	- This brand's dresses fit me well. It looks like a tailor-made one.

Table 4.7: --continued

Items derived from document analysis	Interview quote
9. The brand maintains the quality of its product/service. (Item 32)	<ul style="list-style-type: none"> - One of the major problems of Thai SMEs is the quality control. - It is unacceptable if a small business grows rapidly with poor product quality and reduced customer service. - The shop refused to make the crunchy banana for me because at that time bananas did not taste good as they used to. - I go to eat there very often. The food tastes good as it used to be.
10. It is convenient to purchase products/services of the brand. (Item 34)	<ul style="list-style-type: none"> - The restaurant has many branches. It is so convenient to find one.
11. The brand is the original of the particular product/service. (Item 35)	<ul style="list-style-type: none"> - Some small restaurants have their signature dishes. I always order the signature food of each place. - I like the brand that presents its true nature by creatively develop something new. - I used to have Tonkok's cake quite often. This brand was the first that made orange and chocolate cake with soft ganache.
New item obtained from the interview	Interview quote
12. The brand's story is interesting. (New item 1)	<ul style="list-style-type: none"> - The food was so good that I wanted to know more about the brand. I googled and found that this small restaurant was run by a cabin crew. The owner grew the veggie by herself. The business background was very cool.
13. The brand maintains its uniqueness. (New item 2)	<ul style="list-style-type: none"> - I used to like an ice cream shop very much. It had some unique flavors, such as custard apple, tamarind, and salacca. Sadly, it did not make the custard apple ice cream anymore. I wanted the small shops to keep their uniqueness.
14. The brand shows you that it really cares. (New item 3)	<ul style="list-style-type: none"> - I ordered some car accessories from an online shop. The owner called me to apologize because the items were out of stock. Moreover, she sent me a small gift. I was so impressed by her professionalism and assistance.

Table 4.8: Characteristics of the best SME brands in the opinion of Gen-Y participants

Items derived from document analysis	Interview quote
1. The brand is unique. (Item 1)	<ul style="list-style-type: none"> - The product uniqueness is quite important. Kingkong has peeled and deveined shrimps which is different from other BBQ restaurants serving whole shrimps. - The brand has its own style which is very interesting. - I like the design of the brand's clothes. The brand has the unique style.
2. The brand offers a wide variety of the particular product/service. (Item 10)	<ul style="list-style-type: none"> - This restaurant has everything I like in its menu. - The food here is such a wide variety
3. The brand's products/services are safe. (Item 11)	<ul style="list-style-type: none"> - The product should be safe. It must not contain any harmful ingredients.
4. The brand determines reasonable pricing. (Item 13)	<ul style="list-style-type: none"> - It is not about the amount of money. If I paid a lot and got what I pay for, it's worth it. - The high or low price depends on whether you get what you pay. - I think the product lives up to its price.

Table 4.8: --continued

Items derived from document analysis	Interview quote
5. The brand offers quality product/service. (Item 16)	- SME brands should highlight its quality. - The dessert here is heavenly delicious! - SMEs should not sell low quality stuffs.
6. The brand has product/service that impresses you. (Item 19)	- They have many pretty bikinis that I like. - All my family members like dining here.
7. The brand's products and services are actually useful. (Item 20)	- The product should work well. It should have functional benefits.
8. The brand has something that cannot be found elsewhere. (Item 21)	- I like yogurt with sugar palm so much. It is my first time trying the dairy product mixed with local Thai fruit. This is the experience I can't get from other big brands.
9. The brand gives you an experience you never had before. (Item 22)	- Although it's a buffet restaurant, you can bring a glass of any beverage back. This is an experience I cannot find elsewhere.
10. The brand matches your taste. (Item 30)	- This brand's personality is very close to mine. - The style of the brand is so me.
11. The brand maintains the quality of its product/service. (Item 32)	- I would be so disappointed if I go eat there again and find out that the taste of food is not the same as before. - I have been to this restaurant several times. The taste of the Sukiyaki soup and other ingredients remains the same.
12. It is convenient to purchase products/services of the brand. (Item 34)	- The shop is near my home, so it was very easy to get there. - The restaurant has enough parking lots. It is very convenient.
13. You can easily communicate with the brand. (Item 38)	- The shop has both offline and online stores. You can even talk to the owner via Instagram. - The small businesses should have both online and offline distribution channels. They should keep updating the product information and quickly respond to customers' messages.
New item obtained from the interview	Interview quote
14. The brand shows you that it really cares. (New item 3)	- I had been waiting about 20 minutes for my dish. It was okay because I was not in a hurry. However, the staffs apologized me for having kept me waiting for so long. They even gave me a special discount.

Table 4.9: Characteristics of the best SME brands in the opinion of Gen-Z participants

Items derived from document analysis	Interview quote
1. The brand is famous for its product/service. (Item 4)	- The brand is the best among the rest choux cream shops.
2. The brand has a fresh appearance. (Item 7)	- The brand was trendy. Almost everyone uses it. - The brand has to stay modern. It should keep up with the society's trends.
3. The brand offers a wide variety of the particular product/service. (Item 10)	- The shop has four books of the food menu which are food, drinks, snacks, and desserts.
4. The brand offers quality product/service. (Item 16)	- The food is so good. Salmon is very fresh.

Table 4.9: --continued

Items derived from document analysis	Interview quote
1. The brand is famous for its product/service. (Item 4)	- The brand is the best among the rest choux cream shops.
2. The brand has a fresh appearance. (Item 7)	- The brand was trendy. Almost everyone uses it. - The brand has to stay modern. It should keep up with the society's trends.
3. The brand offers a wide variety of the particular product/service. (Item 10)	- The shop has four books of the food menu which are food, drinks, snacks, and desserts.
4. The brand offers quality product/service. (Item 16)	- The food is so good. Salmon is very fresh.
5. The brand's products/services are worth buying. (Item 17)	- The brand always serves huge portion size with a reasonable price.
6. The brand has post-purchase services, such as return and refund. (Item 28)	- One of my friends bought a pair of denim jeans and faded it nicely. The brand bought it back in the double price.
7. The brand's marketing claims are accurate. (Item 31)	- The products should look similar to the picture in the advertisements.
8. The brand gives you the best offer. (Item 33)	- The brand should have discounts and lots of special deals.
9. The brand is the original of the particular product/service. (Item 35)	- SMEs should be inventive and should not copy other brands' products.

Based on the interview results presented earlier, this study obtained *initial items of SME brand equity, product categories, and brands selected for the further analysis*. In particular, three new items derived from the consumer interviews were added into the pool of items obtained earlier from the document analysis. All 41 initial items of SME brand equity were rearranged. Items about similar issues were listed together to facilitate the readers (see Table 4.10).

Product categories and brands representing each business sector were also chosen for the upcoming focus group. In the case of manufacturing business, three awarded brands most known across four generations were selected (Chaosua, Gogi, and Tofusan). As these brands have many kinds of product, this study chose the product categories that were mentioned often by interviewees. Rice cracker with flossy pork, instant crispy flour, and pasteurized soymilk were selected for the brand

Chaosua, Gogi, and Tofusan, respectively. In the domain of service and trade sector, none of the awarded SMEs was known in all four generations. This study, therefore, chose the brands and product categories from the lists of favorite brands reported by consumer participants. The brands selected should be recalled by at least two of interviewees differing in their generation. Finally, four brands belonging to four product categories were selected for the service sector (Canton suki [Sukiyaki], Jeffer [Steakhouse], King Kong [Grill restaurant], Shabu Nangnai [Shabu Shabu]), and a brand was chosen for the trade business (Raan Je Leng [Beauty store]) These brands and product categories acted as a guideline for the brand selection later done in the focus group.

Table 4.10: Final version of initial items obtained from the qualitative research

No.	Variable
1	The brand is unique. มีเอกลักษณ์ที่แตกต่างจากแบรนด์อื่น ๆ
2	The brand has a fresh appearance. มีความทันสมัย
3	The brand fits into your lifestyle. สอดคล้องกับลักษณะการใช้ชีวิต (ไลฟ์สไตล์) ของคุณ
4	The brand matches your taste. ตรงกับรสนิยมของคุณ
5	The brand is friendly. ให้ความรู้สึกเป็นกันเอง
6	It is convenient to purchase products/services of the brand. หาซื้อได้ง่าย
7	The brand met certain quality standards. ผ่านการรับรองคุณภาพจากหน่วยงานที่น่าเชื่อถือ
8	The brand is famous for its product/service. โด่งดังในการผลิต ให้บริการ จำหน่ายสินค้าประเภทนั้น
9	The brand is the original of the particular product/service. เป็นต้นตำรับของการผลิต ให้บริการ จำหน่ายสินค้านั้น
10	The brand maintains its uniqueness. คงจุดเด่นของแบรนด์ไว้ได้อย่างสม่ำเสมอ
11	The brand's story is interesting. มีประวัติความเป็นมาที่น่าสนใจ

Table 4.10: --continued

No.	Variable
12	The brand crafts its products/ services with cares of customers' every detail. จัดการผลิต ให้บริการ จำหน่ายสินค้าอย่างดี เข้าถึงรายละเอียดของลูกค้า
13	The brand is the expert in its field. มีความเชี่ยวชาญในการผลิต ให้บริการ จำหน่ายสินค้าประเภทนั้น
14	The brand creatively produces new product/service. มีสินค้า บริการที่แปลกใหม่
15	The brand offers a wide variety of the particular product/service. มีสินค้า บริการให้เลือกหลากหลาย
16	The brand's products/ services are safe. มีสินค้า บริการที่ปลอดภัย
17	The brand offers quality product/service. มีสินค้า บริการที่คุณภาพดี
18	The brand determines reasonable pricing. มีสินค้า บริการที่คุณภาพเหมาะสมกับราคา
19	The brand has product/service that impresses you. มีสินค้า บริการที่คุณภูมิใจ
20	The brand's products and services are actually useful. มีสินค้า บริการที่มีประโยชน์ใช้งานได้จริง
21	The brand's marketing claims are accurate. มีสินค้า บริการที่ตรงตามคำโฆษณา
22	The brand maintains the quality of its product/service. รักษามาตรฐานของการจำหน่ายสินค้า บริการ
23	The brand provides helpful information on buying product/service. แนะนำข้อมูลที่เป็นประโยชน์ในการเลือกซื้อสินค้า บริการ
24	The brand makes you happy. ทำให้คุณรู้สึกมีความสุขเมื่อใช้แบรนด์นี้
25	The brand continuously improves itself. มีการพัฒนาอย่างต่อเนื่อง
26	The brand has something that cannot be found elsewhere. มีสิ่งที่ไม่เหมือนใคร ใด ๆ
27	The brand gives you an experience you never had before. ทำให้คุณได้ประสบการณ์แปลกใหม่ที่ไม่เคยได้รับมาก่อน
28	The brand exceeds your expectations. ทำให้คุณพอใจเกินความคาดหมาย
29	The brand expresses its willingness to help. ให้ความช่วยเหลือคุณอย่างเต็มที่
30	The brand answers your questions frankly. ให้ข้อมูลเกี่ยวกับสินค้า บริการตามความเป็นจริง
31	The brand responds positively to your special request. สามารถปรับเปลี่ยนรูปแบบของสินค้า บริการได้ตามคำสั่งซื้อ
32	The brand keeps your privacy. รักษาความลับและไม่เผยแพร่ข้อมูลส่วนตัวของลูกค้า
33	The brand has post-purchase service. มีบริการหลังการขาย เช่น ให้เปลี่ยนสินค้าหรือคืนเงิน
34	The brand gives you the best offer. ให้สิทธิพิเศษคุณได้มากกว่าแบรนด์อื่น ๆ
35	The brand has many communication channels. มีช่องทางให้คุณติดต่อสื่อสารได้อย่างสะดวก
36	The brand uses customer feedback to improve its business. นำความคิดเห็นของลูกค้ามาปรับปรุงพัฒนา

Table 4.10: --continued

No.	Variable
37	The brand shows you that it really cares. ใส่ใจความต้องการของผู้บริโภค
38	The brand is involved in its local community. ช่วยสนับสนุนคนในท้องถิ่น
39	The brand does not harm the environment. ไม่ทำลายสิ่งแวดล้อม
40	The brand takes social responsibility to its heart. มีความรับผิดชอบต่อสังคม
41	The brand helps improve the society. ช่วยเหลือและทำประโยชน์ให้สังคม

Focus groups of four generations of consumers

Two focus groups were conducted to choose product categories and brands for measuring SME brand equity because this method is suitable for knowing individuals' reactions to product or brand stimuli (Greenbaum, 1993). Eligible focus group participants are customers who had both purchase and consumption experience of the eight specific product and service categories including (1) pasteurized soymilk, (2) rice cracker with flossy pork, (3) crispy flour, (4) steakhouse, (5) grill restaurant, (6) Shabu Shabu, (7) Sukiyaki, and (8) beauty store.

Each focus group equally contained eight members varying in their gender and age. One consisted of four baby boomers (53 – 67 years old) and four Gen -Xers (38 – 52 years old), the other included four Gen-Y(23 – 37 years old) and four Gen-Z (18- 22 years old) participants (see Table 4.11)

Table 4.11: Profiles of the four generations of focus group participants

Name	Age	Occupation
<u>Group 1: Baby boomers and Generation X</u>		
Male		
1. Chaisan Narksang	52	Teacher
2. Chumpol Ruengwiwatcharas	54	Company employee
3. Prasit Lamyai	65	Retired
4. Ruekdee Wisalarthakij	42	Government official
Female		
6. Maneeyanan Limsawat	49	Companee employee
7. Nathiprada Lamyai	62	Teacher
8. Nichapha Pornchaimethikul	49	Housewife
9. Patnaree Phongpho	65	Retired
<u>Group 2: Generation Y and Generation Z</u>		
Male		
1. Chatsara Ruetthisart	22	Student
2. Jarin Punyasoni	24	Artist
3. Satayu Deelertkulchai	22	Student
4. Thitidej Treesukonwong	23	Student
Female		
5. Nanthicha Patthamayothin	20	Student
6. Pimprapha Chalermwongwiwat	29	Musician
7. Saowakont Sirisakulwat	31	Bank employee
8. Suthasinee Chanthanon	21	Student

After the introduction of the discussion's purposes and process, members of the two focus groups were given the lists of three business sectors' product categories obtained from the interviews done earlier and were asked to rank products and services they often buy from SMEs from most to least. The products/services ranked first were given a higher score. The product category received the highest total sum score of two focus groups was selected for the following brand selection. The results were presented anonymously due to the protection of participants' privacy.

In the domain of manufacturing business, the product that was most frequently purchased among the four generation participants is pasteurized soymilk. When being asked to indicate the suitable time frame of pasteurized soymilk purchase to use as a criterion for recruiting survey respondents, two focus groups' participants agreed that

individuals eligible for the survey should buy pasteurized soymilk at least once in the latest month (see Table 4.12).

In the service setting, steakhouse was most visited by the two focus groups. According to the focus group participants' opinion, steak is not the everyday food. Therefore, survey samples should be consumers dining in the steakhouse at least once in the last two months (see Table 4.13).

Table 4.12: Product category selection for the manufacturing business sector

Participant	Product ranking (Most [1]-least [3] purchased)		
	Pasteurized soymilk	Crispy flour	Rice cracker
Group 1: Baby boomers and Gen X			
1. Participant A	1	2	3
2. Participant B	1	2	3
3. Participant C	1	2	3
4. Participant D	1	3	2
5. Participant E	1	3	2
6. Participant F	1	2	3
7. Participant G	1	2	3
8. Participant H	1	3	2
Group 2: Gen Y and Gen Z			
1. Participant A	1	3	2
2. Participant B	1	3	2
3. Participant C	1	3	2
4. Participant D	1	3	2
5. Participant E	1	3	2
6. Participant F	1	2	3
7. Participant G	3	2	1
8. Participant H	1	3	2
Total weighted score	46	23	27

Note:

The 1st rank was given 3 points.

The 2nd rank was given 2 points.

The 3rd rank was given 1 points.

Table 4.13: Product category selection for the service business sector

Participant	Service ranking (Most [1]-least [4] purchased)			
	Steakhouse	Grill restaurant	Shabu Shabu	Sukiyaki
Group 1: Baby boomers and Gen X				
1. Participant A	1	3	4	2
2. Participant B	4	1	3	2
3. Participant C	2	3	4	1
4. Participant D	1	4	2	3
5. Participant E	1	4	3	2
6. Participant F	4	3	2	1
7. Participant G	2	1	4	3
8. Participant H	4	2	1	3
Group 2: Gen Y and Gen Z				
1. Participant A	3	4	2	1
2. Participant B	2	4	1	3
3. Participant C	1	2	3	4
4. Participant D	4	2	3	1
5. Participant E	1	2	3	4
6. Participant F	2	3	4	1
7. Participant G	3	2	1	4
8. Participant H	3	2	4	1
Total weighted score	42	38	36	41
Note: The 1 st rank was given 4 points. The 2 nd rank was given 3 points. The 3 rd rank was given 2 points. The 4 th rank was given 1 points.				

For the trade sector, beauty store is the only one category. The participants have the same thought that personal care and beauty products are normally used up within at least three months. As such, individuals assessing SME brand equity of a beauty store brand should visit the shop at least once within the last three months.

After the selection of product/service category, two focus groups' participants moved on to choose their three most favorite brand from a set of five brands belonging to each product type. These brand choices were prepared in advance by the researcher to facilitate the focus group participants. To ensure that all selected brands were SME brands in the same product and service categories, the researcher chose

them from the marketing analysis reports and the business data warehouse of Department of Business Development, Ministry of Commerce.

Focus group participants were asked to rank the brand from most to least favorite. The brand ranked first were given a higher score. Three SME brands got the highest total sum score in each product category would be listed in the brand selection section of the survey conducted later.

According to the focus groups results, three brands selected for the manufacturing sector were the pasteurized soymilk branded Tofusan, Nurse, and Fongfong (see Table 4.14). Three SMEs chosen for the service industry were the steakhouse brands including Jeffer, Santa fe', and Eat Am Are (see Table 4.15). Lastly, three beauty stores called Raan Je Leng, Eveandboy, and Beautrium were selected to represent the retail business (see Table 4.16).

Table 4.14: Pasteurized soymilk brand selection for the manufacturing sector

Participant	Pasteurized soymilk brand (Most [1]-least [3] favorite)				
	Nurse	Tofusan	Shinpo	Fongfong	Ohayo
<u>Group 1: Baby boomers and Gen X</u>					
1. Participant A	3	2	-	1	-
2. Participant B	1	3	-	2	-
3. Participant C	3	2	-	1	-
4. Participant D	1	3	-	2	-
5. Participant E	1	2	-	3	-
6. Participant F	3	2	-	-	-
7. Participant G	1	-	-	2	-
8. Participant H	1	-	-	2	-
<u>Group 2: Gen Y and Gen Z</u>					
1. Participant A	2	1	1	3	-
2. Participant B	3	1	3	2	-
3. Participant C	1	2	3	3	-
4. Participant D	2	1	-	3	-
5. Participant E	-	1	-	2	-
6. Participant F	-	2	1	-	-
7. Participant G	-	1	2	-	-
8. Participant H	-	2	3	1	-

Table 4.14: --continued

Participant	Pasteurized soymilk brand (Most [1]-least [3] favorite)				
	Nurse	Tofusan	Shinpo	Fongfong	Ohayo
Total weighted score	26	31	11	25	0
Note: The 1 st rank was given 5 points. The 2 nd rank was given 4 points. The 3 rd rank was given 3 points. The 4 th rank was given 2 points. The 5 th rank was given 1 points.					

Table 4.15: Steakhouse brand selection for the service sector

Participant	Steakhouse brand (Most [1]-least [3] favorite)				
	Jeffer	Hungrynerd	Eat Am Are	Santa fe'	Kobe Steakhouse
<u>Group 1: Baby boomers and Gen X</u>					
1. Participant A	1	-	-	2	-
2. Participant B	-	-	2	1	-
3. Participant C	-	-	2	1	3
4. Participant D	2	-	3	1	-
5. Participant E	1	-	3	2	-
6. Participant F	1	-	-	2	-
7. Participant G	-	-	2	1	-
8. Participant H	-	-	-	1	-
<u>Group 2: Gen Y and Gen Z</u>					
1. Participant A	2	1	-	-	-
2. Participant B	1	3	-	2	-
3. Participant C	2	-	1	3	-
4. Participant D	3	-	-	2	1
5. Participant E	3	2	-	1	-
6. Participant F	-	-	-	1	-
7. Participant G	1	-	2	3	-
8. Participant H	-	-	-	1	-
Total weighted score	23	6	13	36	4
Note: The 1 st rank was given 5 points. The 2 nd rank was given 4 points. The 3 rd rank was given 3 points. The 4 th rank was given 2 points. The 5 th rank was given 1 points.					

Table 4.16: Beauty store brand for the trade sector

Participant	Beauty store brand (Most [1]-least [3] favorite)				
	Eveandboy	Raan Je Leng	Beauty 24	Lashes	Beautrium
<u>Group 1: Baby boomers and Gen X</u>					
1. Participant A	-	1	-	-	-
2. Participant B	-	1	-	-	-
3. Participant C	-	1	-	-	-
4. Participant D	2	1	3	-	-
5. Participant E	-	1	-	-	-
6. Participant F	1	2	-	-	-
7. Participant G	1	3	-	-	2
8. Participant H	1	3	-	-	2
<u>Group 2: Gen Y and Gen Z</u>					
1. Participant A	1	2	-	-	3
2. Participant B	1	-	-	-	2
3. Participant C	1	2	-	-	-
4. Participant D	1	-	-	-	-
5. Participant E	1	-	-	-	-
6. Participant F	1	-	-	-	-
7. Participant G	2	3	1	-	-
8. Participant H	1	3	-	-	2
Total weighted score	34	33	4		9
Note: The 1 st rank was given 5 points. The 2 nd rank was given 4 points. The 3 rd rank was given 3 points. The 4 th rank was given 2 points. The 5 th rank was given 1 points.					

Chapter 5

Results of step 2 and 3

For achieving a valid, reliable, and generalizable SME brand equity measurement model and for studying the relationship between SME brand equity and consumer response factors, the quantitative research was performed in the second and the third steps of this study. The second step involved defining dimensions and competing models of SME brand equity. The third step was about testing the invariance of SME brand equity model and examining its relationships with consumer response variables. The results of these two steps are reported here in six parts as follows. Respectively, part two to part four represented the findings of step 2, and part five to part six described the results of step 3.

- Part 1 Demographic profiles of samples used in the study
- Part 2 Exploration of the underlying constructs of SME brand equity
- Part 3 Confirmation of the underlying constructs of SME brand equity
- Part 4 Competing measurement models of SME brand equity
- Part 5 Measurement invariance of SME brand equity model
- Part 6 Relationship of SME brand equity and consumer response factors

Part 1 Demographic profiles of samples used in the study

Two main surveys were conducted in this study. Each survey includes three questionnaires. The first survey collected the data that showed the importance of SME brand equity items obtained from the qualitative research. Three questionnaires were delivered separately to three groups of general consumers assessed the significance of items for the three different SME business contexts (manufacturing, service, and trade) to develop the measurement model of SME brand equity.

The demographic profiles of the typical consumers in the first survey were similar across groups. Precisely, a bit more than half of each consumer group rating for manufacturing, service, and trade SME sectors were women. Forty percent of the participants were members of Generation Y with the age of 23 – 27 years. The highest education of sixty percent of samples was the bachelor's degree. The highest frequency of monthly income reported was the range between 10,000 – 20,000 and 20,001 – 30,000 THB. The first two occupations of the sample were company employee and business owners.

Moreover, these three groups of general consumers in the first survey rated their favorite brands in three categories representing three SME business sectors (pasteurized soymilk for manufacturing, steakhouses for service, beauty stores for trade). The brands mostly chosen were Tofusan soymilk, Santa fe' steakhouse, and Eveandboy beauty store (see Table 5.1).

According to the favorite brands selected by the participants of the first survey, the second survey collected the data from customers of the three specific brands of three SME sectors (Tofusan for manufacturing, Santa fe' for service,

Eveandboy for trade) to test the SME brand equity measurement model. The demographic characteristics of each brand's customers were shown in Table 5.2.

In the aspect of participant gender, the proportion of male and female customers were quite equal in the case of Tofusan and Santa fe'. However, Eveandboy customers were mostly women (71.7%).

The young adult was the majority of three brands' customers. Tofusan, Santa fe', and Eveandboy customers were mostly in the Generation Z and Generation Y who aged 18 – 22 years and 23 – 37 years, respectively.

The highest education of customers of three brands was at the same level. More than half of the participants who were customers of Tofusan, Santa fe', and Eveandboy completed their bachelor's programs.

The monthly income of the customers of three selected SMEs was similarly ranged between less than 10,000 and 20,001 – 30,000 THB. The majority of them earned approximately 10,000 – 20,000 THB per month.

The occupations of customers of Tofusan, Santa fe', and Eveandboy were diverse. The percentage of Santa fe' customers in each career was quite similar. Interestingly, one-third of customers of Tofusan and Eveandboy were students. The two-thirds left were the combination of entrepreneur, freelancer, and company employee in the quite equal parts.

Table 5.1: Demographic characteristics and brand selection of general consumers assessing items for developing SME brand equity measurement model

Demographic characteristics	Manufacturing		Service		Trade	
	Freq.	%	Freq.	%	Freq.	%
1. Gender						
1) Male	120	41.5	107	39.1	111	40.4
2) Female	169	58.5	167	60.9	164	59.6
Total	289	100.0	274	100.0	275	100.0
2. Age						
1) 18 – 22 years	39	13.5	27	9.9	34	12.4
2) 23 – 27 years	136	47.1	125	45.6	119	43.3
3) 28 – 32 years	41	14.2	44	16.1	38	13.8
4) 33 – 37 years	28	9.7	34	12.4	36	13.1
5) 38 – 42 years	20	6.9	18	6.6	19	6.9
6) 43 – 47 years	7	2.4	9	3.3	10	3.6
7) 48 – 52 years	11	3.8	12	4.3	10	3.6
8) 53 – 55 years	7	2.4	5	1.8	9	3.3
Total	289	100.0	274	100.0	275	100.0
3. Education						
1) Lower than a Bachelor's degree	73	25.3	51	18.6	57	20.7
2) Bachelor's degree	174	60.2	179	65.3	172	62.5
3) Lower than a Bachelor's degree	42	14.5	44	16.1	46	16.8
Total	289	100.0	274	100.0	275	100.0
4. Monthly income (THB)						
1) Less than 10,000	56	19.3	46	16.8	47	17.1
2) 10,000 – 20,000	95	32.9	81	29.6	78	28.4
3) 20,001 – 30,000	78	27.0	77	28.1	81	29.5
4) 30,001 – 40,000	17	5.9	26	9.5	25	9.0
5) 40,001 – 50,000	17	5.9	14	5.1	15	5.5
6) more than 50,000	26	9.0	30	10.9	29	10.5
Total	289	100.0	274	100.0	275	100.0
5. Occupation						
1) Student	52	18.0	50	18.2	48	17.4
2) Civil servant	21	7.3	21	7.7	20	7.2
3) Company employee	85	29.4	82	29.9	84	30.5
4) Business owner	64	22.1	62	22.6	68	24.8
5) Freelancer	56	19.4	49	17.9	46	16.8
6) Others	11	3.8	10	3.7	9	3.3
Total N = 838	289	100.0	274	100.0	275	100.0

Table 5.1: --Continued

Favorite brand	Manufacturing		Service		Trade	
	Freq.	%	Freq.	%	Freq.	%
1. Manufacturing SMEs (Pasteurized soymilk)						
1) Nurse	39	13.5				
2) Tofusan	134	46.4				
3) Fong Fong	22	7.6				
4) None of the above	94	32.5				
Total	289	100.0				
2. Service SMEs (Steakhouse)						
1) Jeffer			35	12.8		
2) Santa fe'			100	36.5		
3) Eat am are			73	26.6		
4) None of the above			66	24.1		
Total			274	100.0		
3. Trade SMEs (Beauty store)						
1) Eveandboy					119	43.3
2) Jeleng					44	16.0
3) Beautrium					15	5.5
4) None of the above					97	35.2
Total					275	100.0
Total N = 838	289	100.0	274	100.0	275	100.0

Table 5.2: Demographic characteristics of customers of selected SME brands

Demographic characteristics	Tofusan (Manufacturing)		Santa fe' (Service)		Eveandboy (Trade)	
	Freq.	%	Freq.	%	Freq.	%
1. Gender						
1) Male	74	40.2	83	45.1	52	28.3
2) Female	110	59.8	101	54.9	132	71.7
Total	184	100.0	184	100.0	184	100.0
2. Age						
1) 18 – 22 years	64	34.8	33	17.9	54	29.3
2) 23 – 27 years	38	20.7	73	39.7	55	29.9
3) 28 – 32 years	21	11.4	23	12.5	24	13.0
4) 33 – 37 years	18	9.8	28	15.2	32	17.4
5) 38 – 42 years	15	8.2	14	7.6	4	2.2
6) 43 – 47 years	7	3.8	6	3.3	8	4.3
7) 48 – 52 years	7	3.8	2	1.1	2	1.2
8) 53 – 55 years	14	7.5	5	2.7	5	2.7
Total	184	100.0	184	100.0	184	100.0
3. Education						
1) Lower than a Bachelor's degree	72	39.2	65	35.3	72	39.1
2) Bachelor's degree	102	55.4	112	60.9	107	58.2
3) Lower than a Bachelor's degree	10	5.4	7	3.8	5	2.7
Total	184	100.0	184	100.0	184	100.0
4. Monthly income (THB)						
1) Less than 10,000	63	34.2	42	22.8	61	33.2
2) 10,000 – 20,000	70	38.0	87	47.3	66	35.9
3) 20,001 – 30,000	31	16.8	34	18.5	37	20.1
4) 30,001 – 40,000	16	8.8	14	7.6	14	7.6
5) 40,001 – 50,000	3	1.7	4	2.2	4	2.2
6) more than 50,000	1	0.5	3	1.6	2	1.0
Total	184	100.0	184	100.0	184	100.0
5. Occupation						
1) Student	61	33.2	38	20.7	68	37.0
2) Civil servant	20	10.9	28	15.2	10	5.5
3) Company employee	26	14.1	36	19.6	24	13.0
4) Business owner	37	20.1	30	16.3	35	19.0
5) Freelancer	34	18.5	43	23.3	35	19.0
6) Others	6	3.2	9	4.9	12	6.5
Total N = 552	184	100.0	184	100.0	184	100.0

Part 2 Exploration of the underlying constructs of SME brand equity

The exploration of the underlying constructs of SME brand equity was conducted through the exploratory factor analysis (EFA) (Churchill, 1979). Randomly selected by SPSS program, the data contained 419 cases from 838 general consumers who assessed the importance of SME brand equity items in the context of manufacturing, service, and trade sectors. The principal component analysis (PCA) method with varimax rotation was used for the exploratory factor analysis.

Normality tests were performed with a variety of descriptive statistics (Hair et al., 2014). The findings showed that the mean value of total 41 items was rather high ($M = 3.83$ to 4.57). The distribution of all items was negatively skewed ($Sk = -.310$ to -1.498). The negative skewness showed that the majority of participants rated the significance of each item with a higher point than the average score. This statistical value means most consumers agreed that all items obtained from the qualitative research were very important for SME brand equity. The kurtosis value of this study was mostly positive. Precisely, 31 of 41 items of the study had positive kurtosis. This positive value showed that consumers shared the same opinion on those items of SME brand equity, and rated the items with a quite similar score. Moreover, 38 of 41 items of the study had the coefficient of variation (CV) value ranged narrowly between 17 and 23. The narrow range of CV depicted that consumers participating in the survey shared a fairly similar view on SME brand equity (see Table 5.3).

After the data preparation, item-to-total correlations were computed to check whether the correlation matrix obtained had some systematic covariation among the variables. Two statistics including Kaiser-Meyer-Olkin (KMO) measure of sampling

adequacy and Bartlett's test of sphericity (BS) (Hair et al., 2014) were adopted as criteria.

The appropriate value for factor analysis is at least 0.5 of KMO and a significant BS (Dziuban & Shirkey, 1974). The findings here showed the significant approximate chi-square of Bartlett's Test of Sphericity at 10355.242 ($df = 820$, $p = .000$). Furthermore, Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .956. The KMO value obtained was greater than 0.5 and very near 1. This value was ideal for conducting the exploratory factor analysis (Tabachnick & Fidell, 2001). In sum, the data of this study had enough systematic covariate among the variables, and were suitable for conducting the exploratory factor analysis (see Table 5.4).

Then, an exploratory factor analysis using the Principal Component Analysis (PCA) method with varimax rotation were computed. The number of factors was determined by three criteria: (1) the eigenvalue of the factor should be greater than 1; (2) a cumulative percentage of variance explained should be greater than 60 percent (Nunnally, 1978); and (3) each factor should have at least three observed variables.

For item deletion of each factor, items with too low ($< .50$) or too high factor loadings ($> .95$) would be deleted (Bagozzi & Yi, 1988) because items with low loadings may not measure the same construct (Nunnally & Bernstein, 1994).

According to all criteria mentioned, the fifth component (Item 15 The brand offers a wide variety of the particular product/service, Item 14 The brand creatively produces new product/service), the seventh component (Item 4 The brand matches your taste, Item 3 The brand fits into your lifestyle), and eight items were deleted (Item 36 The brand uses customer feedback to improve its business, Item 37 The brand meets your need, Item 23 The brand provides helpful information on buying product/service,

Item 25 The brand continuously improves itself, Item 24 The brand makes you happy, Item 28 The brand exceeds your expectations, Item 5 The brand is friendly, and Item 6 It is convenient to purchase products/services of the brand). Qualified component and items were shown in italic character (see Table 5.5).

Furthermore, the internal consistency was examined. Cronbach's alpha coefficient for each factor should be above .75 (George & Mallery, 2011; Nunnally & Bernstein, 1994). Table 5.6 depicted four qualified components with the Cronbach's alpha coefficient ranging from .824 to .933. The sixth component would be deleted according to its too low internal reliability ($\alpha = .670$).

In the aspect of the discriminant power of each item, corrected item-total correlation with other items within the same and across components was computed. The item with too low corrected item-to-total correlation may not measure the same construct (Nunnally & Bernstein, 1994). Items with too high corrected item-to-total correlations tend to be redundant because they are very similar to other items. According to McCoach et al. (2013), the suitable value of corrected item-total correlation for developing psychometric scales should range between .30 and .60. This study's items had normal to slightly high corrected item-to-total correlations with other items across components (.457-.730) (see Table 5.7) and within the same component (.582-.785) (see Table 5.8). These correlation values mean that each SME brand equity item obtained from the exploratory factor analysis is not only not too close to other items, but also probably belongs to its component. All exploratory factors of SME brand equity obtained (see Table 5.9) were reexamined through the confirmatory analysis whose results were presented in the following part.

Table 5.3: Descriptive statistics of all items obtained from the qualitative research

Variable	Min	Max	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>CV</i>
Item 1 The brand is unique.	1	5	4.27	.741	-.630	-.251	.17
Item 2 The brand has a fresh appearance.	1	5	4.21	.789	-.895	.984	.19
Item 3 The brand fits into your lifestyle.	2	5	4.25	.757	-.576	-.609	.18
Item 4 The brand matches your taste.	1	5	4.09	.891	-.602	-.486	.22
Item 5 The brand is friendly.	1	5	4.17	.872	-.863	.328	.21
Item 6 It is convenient to purchase products/services of the brand.	1	5	4.23	.883	-1.030	.707	.21
Item 7 The brand met certain quality standards.	1	5	4.33	.757	-.941	.527	.17
Item 8 The brand is famous for its product/service.	1	5	3.98	.880	-.513	-.207	.22
Item 9 The brand is the original of the particular product/service.	1	5	3.83	1.013	-.710	.220	.26
Item 10 The brand maintains its uniqueness.	2	5	4.38	.729	-.979	.460	.17
Item 11 The brand's story is interesting.	1	5	3.90	1.026	-.840	.351	.26
Item 12 The brand crafts its products/ services with cares of customers' every detail.	1	5	3.90	1.026	-.840	-.225	.26
Item 13 The brand is the expert in its field.	2	5	4.38	.727	-.848	1.306	.17
Item 14 The brand creatively produces new product/service.	1	5	4.36	.774	-	1.158	.18
Item 15 The brand offers a wide variety of the particular product/service.	1	5	4.13	.804	-.649	.731	.19
Item 16 The brand's products/ services are safe.	1	5	4.15	.820	-.803	.406	.20
Item 17 The brand offers quality product/service.	2	5	4.55	.677	-	1.237	.15
Item 18 The brand determines reasonable pricing.	2	5	4.57	.672	-	1.498	.15
Item 19 The brand has product/service that impresses you.	1	5	4.44	.778	-	1.372	.18
Item 20 The brand's products and services are actually useful.	1	5	4.41	.772	-	1.194	.18
Item 21 The brand's marketing claims are accurate.	2	5	4.38	.765	-.996	.165	.17
Item 22 The brand maintains the quality of its product/service.	2	5	4.43	.730	-.985	-.044	.16
Item 23 The brand provides helpful information on buying product/service.	2	5	4.31	.778	-.842	-.083	.18
Item 24 The brand makes you happy.	1	5	4.32	.799	-.917	.162	.18
Item 25 The brand continuously improves itself.	1	5	4.31	.772	-.937	.530	.18
Item 26 The brand has something that cannot be found elsewhere.	1	5	4.05	.887	-.723	.118	.22
Item 27 The brand gives you an experience you never had before.	1	5	4.08	.877	-.694	.144	.21
Item 28 The brand exceeds your expectations.	2	5	4.06	.791	-.310	-.810	.19
Item 29 The brand expresses its willingness to help.	2	5	4.29	.765	-.773	-.154	.18
Item 30 The brand answers your questions frankly.	2	5	4.41	.734	-.956	.013	.17

Table 5.3: -- continued

Variable	Min	Max	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>CV</i>
Item 31 The brand responds positively to your special request.	1	5	4.08	.894	-.952	.981	.22
Item 32 The brand keeps your privacy.	1	5	4.08	.894	-.952	1.898	.22
Item 33 The brand has post-purchase service.	1	5	4.44	.817	-1.461	.941	.18
Item 34 The brand gives you the best offer.	1	5	4.29	.872	-1.161	.424	.20
Item 35 The brand has many communication channels.	1	5	4.07	.920	-.836	1.433	.23
Item 36 The brand uses customer feedback to improve its business.	1	5	4.40	.750	-1.191	1.397	.17
Item 37 The brand meets your need.	1	5	4.42	.758	-1.268	.194	.17
Item 38 The brand is involved in its local community.	2	5	4.45	.738	-1.086	.500	.17
Item 39 The brand does not harm the environment.	1	5	4.28	.898	-1.108	1.373	.21
Item 40 The brand takes social responsibility to its heart.	1	5	4.41	.814	-1.324	1.188	.18
Item 41 The brand helps improve the society.	1	5	4.43	.765	-1.252	.810	.17

N = 419

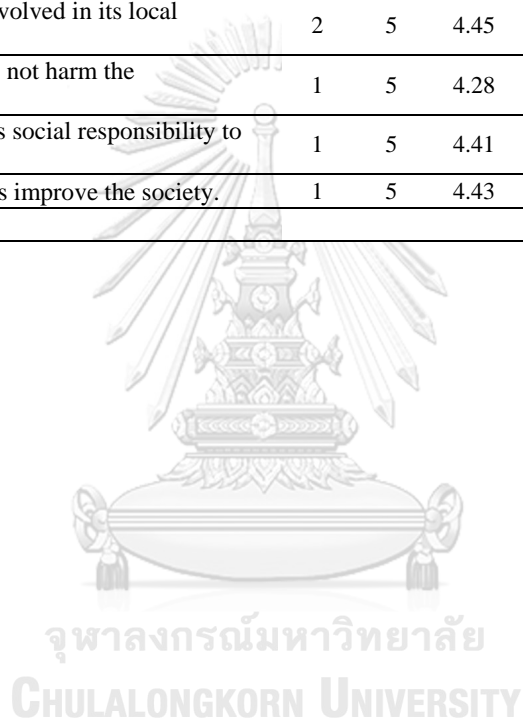


Table 5.4: Correlation matrix of all items obtained from the qualitative research

	1.item1	2.item2	3.item3	4.item4	5.item5	6.item6	7.item7	8.item8	9.item9	10.item10	11.item11	12.item12	13.item13	14.item14	15.item15	16.item16	17.item17	18.item18	19.item19	20.item20	21.item21	22.item22	23.item23	
1.item1	-																							
2.item2	.469	-																						
3.item3	.430	.421	-																					
4.item4	.380	.436	.585	-																				
5.item5	.264	.350	.371	.381	-																			
6.item6	.306	.445	.359	.339	.399	-																		
7.item7	.399	.422	.303	.339	.352	.458	-																	
8.item8	.291	.347	.327	.359	.369	.295	.304	-																
9.item9	.237	.285	.189	.237	.312	.196	.215	.549	-															
10.item10	.410	.322	.425	.376	.402	.430	.400	.320	.342	-														
11.item11	.194	.242	.183	.243	.343	.118	.139	.491	.486	.284	-													
12.item12	.341	.420	.501	.439	.428	.481	.405	.295	.176	.484	.241	-												
13.item13	.328	.290	.420	.391	.418	.432	.349	.301	.185	.483	.202	.522	-											
14.item14	.371	.448	.259	.275	.256	.266	.237	.392	.352	.253	.407	.289	.284	-										
15.item15	.264	.421	.265	.329	.276	.244	.202	.339	.232	.211	.359	.350	.263	.585	-									
16.item16	.358	.261	.400	.340	.327	.414	.371	.218	.128	.463	.127	.466	.495	.229	.237	-								
17.item17	.350	.314	.445	.388	.369	.442	.366	.273	.152	.501	.218	.494	.494	.248	.295	.706	-							
18.item18	.284	.292	.397	.341	.361	.483	.327	.264	.122	.390	.127	.479	.471	.224	.247	.605	.571	-						
19.item19	.322	.356	.443	.497	.386	.454	.277	.334	.181	.349	.255	.425	.406	.337	.362	.423	.465	.515	-					
20.item20	.318	.380	.495	.400	.365	.424	.352	.325	.183	.435	.233	.521	.426	.317	.377	.519	.517	.573	.537	-				
21.item21	.384	.349	.391	.354	.393	.408	.395	.313	.222	.543	.223	.471	.453	.263	.280	.552	.588	.537	.471	.622	-			
22.item22	.377	.314	.435	.394	.360	.488	.422	.285	.144	.484	.115	.507	.352	.225	.205	.600	.637	.579	.479	.582	.607	-		
23.item23	.293	.396	.411	.364	.355	.388	.361	.361	.276	.410	.329	.471	.403	.389	.442	.374	.471	.424	.453	.519	.533	.523	-	
24.item24	.434	.386	.345	.445	.392	.385	.358	.318	.285	.426	.232	.465	.387	.421	.286	.452	.413	.414	.445	.468	.533	.490	.443	-
25.item25	.391	.501	.443	.405	.362	.510	.430	.371	.244	.464	.311	.547	.410	.465	.457	.450	.521	.435	.488	.531	.533	.536	.562	-
26.item26	.298	.381	.230	.285	.378	.372	.259	.443	.415	.343	.453	.332	.321	.517	.414	.299	.307	.348	.388	.325	.400	.316	.392	-

Table 5.4: -- continued

	1.item1	2.item2	3.item3	4.item4	5.item5	6.item6	7.item7	8.item8	9.item9	10.item10	11.item11	12.item12	13.item13	14.item14	15.item15	16.item16	17.item17	18.item18	19.item19	20.item20	21.item21	22.item22	23.item23
27.item27	.316	.414	.269	.251	.407	.325	.251	.464	.409	.244	.408	.277	.256	.471	.366	.203	.210	.214	.341	.234	.346	.293	.307
28.item28	.360	.348	.411	.349	.336	.258	.262	.424	.329	.384	.288	.372	.316	.379	.293	.323	.413	.307	.394	.348	.389	.365	.378
29.item29	.340	.333	.463	.369	.434	.429	.315	.229	.119	.450	.165	.487	.457	.302	.275	.449	.512	.444	.445	.475	.500	.520	.468
30.item30	.299	.292	.392	.340	.440	.468	.323	.268	.154	.521	.191	.481	.456	.318	.269	.489	.588	.427	.459	.474	.569	.554	.483
31.item31	.193	.433	.351	.378	.439	.333	.245	.425	.264	.245	.307	.370	.261	.411	.453	.225	.359	.277	.373	.401	.352	.318	.441
32.item32	.339	.394	.340	.381	.449	.458	.359	.314	.185	.369	.161	.417	.404	.349	.275	.436	.455	.390	.422	.471	.532	.545	.465
33.item33	.266	.411	.359	.355	.300	.414	.303	.387	.202	.359	.201	.417	.285	.316	.368	.364	.439	.436	.361	.485	.426	.420	.475
34.item34	.212	.363	.296	.343	.254	.270	.191	.462	.325	.262	.392	.265	.211	.435	.485	.179	.252	.203	.450	.332	.283	.256	.409
35.item35	.382	.409	.390	.337	.355	.500	.314	.276	.137	.491	.190	.439	.433	.276	.284	.479	.481	.467	.435	.455	.490	.507	.435
36.item36	.421	.431	.416	.356	.340	.496	.351	.270	.155	.453	.122	.483	.439	.313	.277	.507	.472	.453	.478	.483	.482	.549	.421
37.item37	.351	.406	.469	.456	.351	.403	.351	.308	.147	.434	.199	.470	.393	.250	.289	.506	.521	.525	.408	.533	.490	.517	.486
38.item38	.246	.391	.252	.309	.384	.289	.328	.376	.350	.285	.472	.309	.269	.470	.385	.318	.288	.314	.282	.350	.322	.301	.467
39.item39	.287	.346	.296	.346	.394	.356	.378	.305	.269	.394	.310	.362	.352	.378	.258	.430	.415	.364	.341	.413	.419	.385	.410
40.item40	.371	.361	.339	.401	.378	.305	.402	.332	.242	.431	.280	.405	.366	.351	.239	.458	.459	.416	.381	.470	.501	.431	.401
41.item41	.311	.405	.267	.312	.382	.341	.353	.363	.319	.377	.383	.343	.297	.441	.292	.355	.359	.325	.369	.388	.428	.342	.457

Table 5.4: -- continued

	24.Item24	25.Item25	26.Item26	27.Item27	28.Item28	29.Item29	30.Item30	31.Item31	32.Item32	33.Item33	34.Item34	35.Item35	36.Item36	37.Item37	38.Item38	39.Item39	40.Item40	41.Item41
1.Item1	.454	.391	.298	.316	.360	.340	.299	.193	.339	.266	.212	.382	.421	.351	.246	.287	.371	.311
2.Item2	.386	.501	.381	.414	.348	.333	.292	.433	.394	.411	.563	.409	.431	.406	.391	.346	.361	.405
3.Item3	.345	.443	.230	.269	.411	.463	.392	.351	.340	.359	.296	.390	.416	.469	.252	.296	.339	.267
4.Item4	.445	.405	.285	.251	.349	.369	.340	.378	.381	.355	.343	.337	.356	.456	.309	.346	.401	.312
5.Item5	.392	.362	.378	.407	.336	.434	.440	.439	.449	.300	.254	.355	.340	.351	.384	.394	.378	.382
6.Item6	.385	.510	.372	.325	.258	.429	.468	.333	.458	.414	.270	.500	.496	.403	.289	.356	.305	.341
7.Item7	.358	.430	.259	.251	.262	.315	.323	.245	.359	.303	.191	.314	.351	.351	.328	.378	.402	.353
8.Item8	.318	.371	.443	.464	.424	.229	.268	.425	.314	.387	.462	.276	.270	.308	.376	.305	.332	.363
9.Item9	.285	.244	.415	.409	.329	.119	.154	.264	.185	.202	.325	.137	.155	.147	.350	.269	.242	.319
10.Item10	.426	.464	.343	.244	.384	.450	.521	.245	.369	.359	.262	.491	.453	.434	.285	.394	.451	.377
11.Item11	.232	.311	.453	.408	.288	.165	.191	.307	.161	.201	.392	.190	.122	.199	.472	.310	.280	.383
12.Item12	.465	.547	.332	.277	.372	.487	.481	.370	.417	.417	.265	.439	.483	.470	.309	.362	.405	.343
13.Item13	.387	.410	.321	.256	.316	.457	.456	.261	.424	.285	.211	.433	.439	.393	.269	.352	.366	.297
14.Item14	.421	.465	.517	.471	.379	.302	.318	.411	.349	.316	.435	.276	.313	.250	.470	.378	.351	.441
15.Item15	.286	.457	.414	.366	.293	.275	.269	.453	.275	.368	.485	.284	.277	.289	.385	.258	.239	.292
16.Item16	.452	.450	.299	.203	.323	.449	.489	.225	.436	.364	.179	.479	.507	.506	.318	.450	.458	.355
17.Item17	.413	.521	.307	.210	.413	.512	.588	.359	.455	.439	.252	.481	.472	.521	.288	.415	.459	.359
18.Item18	.414	.435	.348	.214	.307	.444	.427	.277	.390	.456	.203	.467	.453	.525	.314	.364	.416	.325
19.Item19	.445	.488	.388	.341	.394	.445	.459	.373	.422	.361	.450	.435	.478	.408	.282	.341	.381	.369
20.Item20	.468	.531	.325	.234	.348	.475	.474	.401	.471	.485	.332	.455	.483	.533	.350	.413	.470	.388
21.Item21	.533	.533	.400	.346	.389	.500	.569	.352	.532	.426	.283	.490	.482	.490	.322	.419	.501	.428
22.Item22	.490	.536	.316	.293	.365	.520	.554	.318	.545	.420	.256	.507	.549	.517	.301	.385	.431	.342
23.Item23	.443	.562	.392	.307	.378	.468	.483	.441	.465	.475	.409	.435	.421	.486	.467	.410	.401	.457
24.Item24	-	.535	.425	.421	.420	.483	.517	.361	.498	.397	.329	.477	.447	.463	.341	.419	.420	.415
25.Item25	.535	-	.511	.458	.475	.488	.516	.455	.514	.532	.435	.496	.535	.532	.481	.413	.449	.483
26.Item26	.425	.511	-	.616	.459	.369	.382	.363	.368	.389	.415	.414	.355	.318	.471	.398	.394	.415

Table 5.4: -- continued

	24.Item24	25.Item25	26.Item26	27.Item27	28.Item28	29.Item29	30.Item30	31.Item31	32.Item32	33.Item33	34.Item34	35.Item35	36.Item36	37.Item37	38.Item38	39.Item39	40.Item40	41.Item41
27.Item27	.421	.458	.616	-	.507	.304	.350	.330	.351	.326	.453	.332	.348	.269	.384	.282	.301	.383
28.Item28	.420	.475	.459	.507	-	.477	.448	.341	.315	.374	.386	.322	.385	.364	.323	.341	.369	.374
29.Item29	.483	.488	.369	.304	.477	-	.636	.395	.443	.444	.299	.525	.523	.475	.262	.321	.421	.330
30.Item30	.517	.516	.382	.350	.448	.636	-	.444	.560	.473	.307	.578	.525	.534	.325	.479	.456	.405
31.Item31	.361	.455	.363	.330	.341	.395	.444	-	.484	.530	.514	.378	.358	.367	.388	.400	.382	.439
32.Item32	.498	.514	.368	.351	.315	.443	.560	.484	-	.514	.359	.497	.530	.486	.378	.506	.470	.462
33.Item33	.397	.532	.389	.326	.374	.444	.473	.530	.514	-	.518	.601	.504	.540	.393	.411	.435	.373
34.Item34	.329	.435	.415	.453	.386	.299	.307	.514	.359	.518	-	.426	.330	.343	.350	.261	.272	.334
35.Item35	.477	.496	.414	.332	.322	.525	.578	.378	.497	.601	.426	-	.569	.565	.291	.390	.433	.357
36.Item36	.447	.535	.355	.348	.385	.525	.525	.358	.550	.504	.330	.569	-	.614	.359	.409	.490	.431
37.Item37	.463	.532	.318	.269	.364	.475	.534	.367	.486	.540	.343	.565	.614	-	.488	.527	.582	.511
38.Item38	.341	.481	.471	.384	.323	.262	.325	.388	.378	.393	.350	.291	.359	.488	-	.585	.561	.670
39.Item39	.419	.413	.398	.282	.341	.321	.479	.400	.506	.411	.261	.390	.409	.527	.585	-	.743	.642
40.Item40	.420	.449	.394	.301	.369	.421	.456	.382	.470	.435	.272	.433	.490	.582	.561	.743	-	.672
41.Item41	.415	.483	.415	.383	.374	.330	.405	.439	.462	.373	.334	.357	.431	.511	.670	.642	.672	-

df = 820
Kaiser-Meyer-Olkin Measure of Sampling Adequacy = .956

Bartlett's Test of Sphericity Approx. Chi-Square = 10355.242
p = .000

All correlations are significant (p < .05).

Table 5.5: Factor loading of all items obtained from the qualitative research

Variable	Component						
	1	2	3	4	5	6	7
Component 1							
1.1 The brand's products/ services are safe. (item 16)	.774	.014	.236	.015	.078	.134	.006
1.2 The brand offers quality product/service. (item 17)	.766	.090	.177	.132	.104	.049	.114
1.3 The brand maintains the quality of its product/service. (item 22)	.746	.063	.137	.217	.040	.178	.069
1.4 The brand determines reasonable pricing. (item 18)	.731	.020	.169	.092	.161	.040	.100
1.5 The brand's marketing claims are accurate. (item 21)	.692	.185	.215	.194	.091	.131	-.004
1.6 The brand's products and services are actually useful. (item 20)	.639	.053	.218	.171	.290	.035	.256
1.7 The brand is the expert in its field. (item 13)	.635	.218	.075	.052	.020	.185	.165
1.8 The brand answers your questions frankly. (item 30)	.595	.181	.189	.499	-.021	.086	-.045
1.9 The brand expresses its willingness to help. (item 29)	.574	.145	.039	.439	.042	.169	.059
1.10 The brand maintains its uniqueness. (item 10)	.563	.337	.163	.113	-.122	.259	.131
1.11 The brand crafts its products/ services with cares of customers' every detail. (item 12)	.562	.134	.113	.169	.148	.245	.301
1.12 The brand has product/service that impresses you. (item 19)	.523	.180	.047	.244	.309	.086	.239
1.13 The brand uses customer feedback to improve its business. (item 36)	.480	.005	.239	.439	.097	.349	.032
1.14 The brand meets your need. (item 37)	.474	-.014	.461	.354	.101	.153	.214
1.15 The brand provides helpful information on buying product/service. (item 23)	.474	.191	.261	.238	.366	.031	.171
1.16 The brand continuously improves itself. (item 25)	.462	.184	.218	.326	.386	.305	.044
1.17 The brand makes you happy. (item 24)	.459	.248	.173	.276	.146	.346	-.028
1.18 It is convenient to purchase products/services of the brand. (item 6)	.446	.107	.092	.352	.039	.371	.096
Total variance explained by the component	19.666						
Eigenvalue	8.063						
Component 2							
2.1 The brand is the original of the particular product/ service. (item 9)	.032	.763	.164	-.023	.048	.120	.108
2.2 The brand's story is interesting. (item 11)	.085	.687	.262	-.063	.300	-.107	.110
2.3 The brand is famous for its product/service. (item 8)	.135	.663	.144	.178	.162	.075	.273
2.4 The brand gives you an experience you never had before. (item 27)	.115	.597	.054	.330	.256	.331	-.193
2.5 The brand has something that cannot be found elsewhere. (item 26)	.263	.544	.180	.242	.343	.205	-.234
2.6 The brand exceeds your expectations. (item 28)	.336	.466	.050	.268	.146	.226	.006
2.7 The brand is friendly. (item 5)	.328	.461	.209	.268	-.114	.116	.256
Total variance explained by the component		9.042					
Eigenvalue		3.707					
Component 3							
3.1 The brand does not harm the environment. (item 39)	.294	.177	.761	.183	.031	.121	.055
3.2 The brand helps improve the society. (item 41)	.208	.254	.737	.182	.162	.162	.016
3.3 The brand takes social responsibility to its heart. (item 40)	.358	.144	.729	.172	.026	.173	.088
3.4 The brand is involved in its local community. (item 38)	.144	.297	.706	.093	.315	.091	.043
Total variance explained by the component			8.708				
Eigenvalue			3.570				

Table 5.5:--continued

Variable	Component						
	1	2	3	4	5	6	7
Component 4							
<i>4.1 The brand has post-purchase service. (item 33)</i>	.297	.077	.246	.646	.238	.050	.162
<i>4.2 The brand responds positively to your special request. (item 31)</i>	.125	.245	.261	.569	.292	-.049	.330
<i>4.3 The brand has many communication channels. (item 35)</i>	.481	.073	.139	.566	.077	.220	.011
<i>4.4 The brand gives you the best offer. (item 34)</i>	.075	.358	.060	.518	.464	-.019	.194
<i>4.5 The brand keeps your privacy. (item 32)</i>	.395	.102	.332	.516	.053	.195	.056
Total variance explained by the component	8.703						
Eigenvalue	3.568						
Component 5							
5.1 The brand offers a wide variety of the particular product/service. (item 15)	.170	.187	.092	.138	.769	.089	.154
5.2 The brand creatively produces new product/service. (item 14)	.112	.337	.236	.109	.635	.302	-.082
Total variance explained by the component	6.293						
Eigenvalue	2.580						
Component 6							
6.1 <i>The brand is unique. (item 1)</i>	.286	.149	.106	.010	.136	.702	.120
6.2 <i>The brand has a fresh appearance. (item 2)</i>	.104	.137	.204	.270	.336	.588	.286
6.3 <i>The brand met certain quality standards. (item 7)</i>	.305	.118	.289	.053	-.030	.532	.187
Total variance explained by the component	6.255						
Eigenvalue	2.564						
Component 7							
7.1 The brand matches your taste. (item 4)	.300	.187	.141	.150	.130	.272	.631
7.2 The brand fits into your lifestyle. (item 3)	.428	.142	.019	.158	.101	.279	.587
Total variance explained by the component	4.216						
Eigen value	1.728						
Note: Qualified items are written in italic characters.							
Extraction Method: Principal Component Analysis.							
Rotation Method: Varimax with Kaiser Normalization.							
a. Rotation converged in 13 iterations.							

Table 5.6: Cronbach's alpha coefficient of each component derived from the exploratory factor analysis

Variable	Number of items in the component	Cronbach's alpha
<u>Component 1</u>		
<i>1.1 The brand's products/ services are safe. (item 16)</i>	12	.933
<i>1.2 The brand offers quality product/service. (item 17)</i>		
<i>1.3 The brand maintains the quality of its product/service. (item 22)</i>		
<i>1.4 The brand determines reasonable pricing. (item 18)</i>		
<i>1.5 The brand's marketing claims are accurate. (item 21)</i>		
<i>1.6 The brand's products and services are actually useful. (item 20)</i>		
<i>1.7 The brand is the expert in its field. (item 13)</i>		
<i>1.8 The brand answers your questions frankly. (item 30)</i>		
<i>1.9 The brand expresses its willingness to help. (item 29)</i>		
<i>1.10 The brand maintains its uniqueness. (item 10)</i>		
<i>1.11 The brand crafts its products/ services with cares of customers' every detail. (item 12)</i>		
<i>1.12 The brand has product/service that impresses you. (item 19)</i>		
<u>Component 2</u>		
<i>2.1 The brand is the original of the particular product/ service. (item 9)</i>	5	.824
<i>2.2 The brand's story is interesting. (item 11)</i>		
<i>2.3 The brand is famous for its product/service. (item 8)</i>		
<i>2.4 The brand gives you an experience you never had before. (item 27)</i>		
<i>2.5 The brand has something that cannot be found elsewhere. (item 26)</i>		
<u>Component 3</u>		
<i>3.1 The brand does not harm the environment. (item 39)</i>	4	.875
<i>3.2 The brand helps improve the society. (item 41)</i>		
<i>3.3 The brand takes social responsibility to its heart. (item 40)</i>		
<i>3.4 The brand is involved in its local community. (item 38)</i>		
<u>Component 4</u>		
<i>4.1 The brand has post-purchase service. (item 33)</i>	5	.857
<i>4.2 The brand responds positively to your special request. (item 31)</i>		
<i>4.3 The brand has many communication channels. (item 35)</i>		
<i>4.4 The brand gives you the best offer. (item 34)</i>		
<i>4.5 The brand keeps your privacy. (item 32)</i>		
<u>Component 6</u>		
<i>6.1 The brand is unique. (item 1)</i>	3	.670
<i>6.2 The brand has a fresh appearance. (item 2)</i>		
<i>6.3 The brand met certain quality standards. (item 7)</i>		
Note: Qualified items are written in italic characters.		

Table 5.7: Corrected-item-total correlation of an item and other items

Variable	Corrected item-total correlation
<u>Component 1</u>	
1.1 The brand's products/ services are safe. (item 16)	.664
1.2 The brand offers quality product/service. (item 17)	.697
1.3 The brand maintains the quality of its product/service. (item 22)	.681
1.4 The brand determines reasonable pricing. (item 18)	.722
1.5 The brand's marketing claims are accurate. (item 21)	.649
1.6 The brand's products and services are actually useful. (item 20)	.730
1.7 The brand is the expert in its field. (item 13)	.639
1.8 The brand answers your questions frankly. (item 30)	.693
1.9 The brand expresses its willingness to help. (item 29)	.712
1.10 The brand maintains its uniqueness. (item 10)	.650
1.11 The brand crafts its products/ services with cares of customers' every detail. (item 12)	.698
1.12 The brand has product/service that impresses you. (item 19)	.638
<u>Component 2</u>	
2.1 The brand is the original of the particular product/ service. (item 9)	.457
2.2 The brand's story is interesting. (item 11)	.461
2.3 The brand is famous for its product/service. (item 8)	.612
2.4 The brand gives you an experience you never had before. (item 27)	.583
2.5 The brand has something that cannot be found elsewhere. (item 26)	.663
<u>Component 3</u>	
3.1 The brand does not harm the environment. (item 39)	.646
3.2 The brand helps improve the society. (item 41)	.679
3.3 The brand takes social responsibility to its heart. (item 40)	.648
3.4 The brand is involved in its local community. (item 38)	.620
<u>Component 4</u>	
4.1 The brand has post-purchase service. (item 33)	.707
4.2 The brand responds positively to your special request. (item 31)	.654
4.3 The brand has many communication channels. (item 35)	.711
4.4 The brand gives you the best offer. (item 34)	.641
4.5 The brand keeps your privacy. (item 32)	.696

Table 5.8: Corrected-item-total correlation of an item and other items in the same component

Variable	Corrected item-total correlation
<u>Component 1</u>	
1.1 The brand's products/ services are safe. (item 16)	.725
1.2 The brand offers quality product/service. (item 17)	.751
1.3 The brand maintains the quality of its product/service. (item 22)	.762
1.4 The brand determines reasonable pricing. (item 18)	.785
1.5 The brand's marketing claims are accurate. (item 21)	.706
1.6 The brand's products and services are actually useful. (item 20)	.769
1.7 The brand is the expert in its field. (item 13)	.653
1.8 The brand answers your questions frankly. (item 30)	.732
1.9 The brand expresses its willingness to help. (item 29)	.709
1.10 The brand maintains its uniqueness. (item 10)	.619
1.11 The brand crafts its products/ services with cares of customers' every detail. (item 12)	.685
1.12 The brand has product/service that impresses you. (item 19)	.623
<u>Component 2</u>	
2.1 The brand is the original of the particular product/ service. (item 9)	.652
2.2 The brand's story is interesting. (item 11)	.592
2.3 The brand is famous for its product/service. (item 8)	.582
2.4 The brand gives you an experience you never had before. (item 27)	.630
2.5 The brand has something that cannot be found elsewhere. (item 26)	.649
<u>Component 3</u>	
3.1 The brand does not harm the environment. (item 39)	.740
3.2 The brand helps improve the society. (item 41)	.742
3.3 The brand takes social responsibility to its heart. (item 40)	.784
3.4 The brand is involved in its local community. (item 38)	.668
<u>Component 4</u>	
4.1 The brand has post-purchase service. (item 33)	.728
4.2 The brand responds positively to your special request. (item 31)	.628
4.3 The brand has many communication channels. (item 35)	.703
4.4 The brand gives you the best offer. (item 34)	.649
4.5 The brand keeps your privacy. (item 32)	.658

Table 5.9: Exploratory constructs of SME brand equity

Variable	Min	Max	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>CV</i>
Component 1 $\alpha = .924$							
1.1 The brand maintains its uniqueness. (item 10)	2	5	4.38	.729	-.979	.460	.17
1.2 The brand crafts its products/ services with cares of customers' every detail. (item 12)	1	5	3.90	1.026	-.840	-.225	.26
1.3 The brand is the expert in its field. (item 13)	2	5	4.38	.727	-.848	1.306	.17
1.4 The brand's products/ services are safe. (item 16)	1	5	4.15	.820	-.803	.406	.20
1.5 The brand offers quality product/service. (item 17)	2	5	4.55	.677	-1.237	1.801	.15
1.6 The brand determines reasonable pricing. (item 18)	2	5	4.57	.672	-1.498	1.701	.15
1.7 The brand has product/service that impresses you. (item 19)							
1.8 The brand's products and services are actually useful. (item 20)	1	5	4.41	.772	-1.194	.990	.18
1.9 The brand's marketing claims are accurate. (item 21)	2	5	4.38	.765	-.996	.165	.17
1.10 The brand maintains the quality of its product/service. (item 22)	2	5	4.43	.730	-.985	-.044	.16
1.11 The brand expresses its willingness to help. (item 29)	2	5	4.29	.765	-.773	-.154	.18
1.12 The brand answers your questions frankly. (item 30)	2	5	4.41	.734	-.956	.013	.17
Component 2 $\alpha = .815$							
2.1 The brand is famous for its product/service. (item 8)	1	5	3.98	.880	-.513	-.207	.22
2.2 The brand is the original of the particular product/ service. (item 9)	1	5	3.83	1.013	-.710	.220	.26
2.3 The brand's story is interesting. (item 11)	1	5	3.90	1.026	-.840	.351	.26
2.4 The brand has something that cannot be found elsewhere. (item 26)	1	5	4.05	.887	-.723	.118	.22
2.5 The brand gives you an experience you never had before. (item 27)	1	5	4.08	.877	-.694	.144	.21
Component 3 $\alpha = .877$							
3.1 The brand is involved in its local community. (item 38)	2	5	4.45	.738	-1.086	.500	.17
3.2 The brand does not harm the environment. (item 39)	1	5	4.28	.898	-1.108	1.373	.21
3.3 The brand takes social responsibility to its heart. (item 40)	1	5	4.41	.814	-1.324	1.188	.18
3.4 The brand helps improve the society. (item 41)	1	5	4.43	.765	-1.252	.810	.17
Component 4 $\alpha = .821$							
4.1 The brand responds positively to your special request. (item 31)	1	5	4.08	.894	-.952	.981	.22
4.2 The brand keeps your privacy. (item 32)	1	5	4.08	.894	-.952	1.898	.22
4.3 The brand has post-purchase service. (item 33)	1	5	4.44	.817	-1.461	.941	.18
4.4 The brand gives you the best offer. (item 34)	1	5	4.29	.872	-1.161	.424	.20
4.5 The brand has many communication channels. (item 35)	1	5	4.07	.920	-.836	1.433	.23
<i>N</i> = 419							

Part 3 Confirmation of the underlying constructs of SME brand equity

The confirmation of the underlying constructs of SME brand equity was conducted through the confirmatory factor analysis (CFA) via the IBM SPSS AMOS version 22. The data consisted of the second half of 838 general consumers or 419 cases that had been randomly selected and saved for computing CFA since the data preparation process.

The normality tests showed that two sets of data used for the EFA and CFA shared similar properties. The mean value of 26 items was quite high ($M = 3.85$ to 4.55). The distribution of all items was negatively skewed ($Sk = -.660$ to -1.303). The negative skewness showed that most participants rated the significance of each item with a higher point than the average score. This statistical value means the majority consumers agreed that all items were very important for SME brand equity. The kurtosis value of this study was mostly positive. Precisely, 20 of 26 items of the study had positive kurtosis. This positive value showed that consumers shared the same opinion on those items of SME brand equity, and rated the items with a quite similar score. Furthermore, 23 of 26 items of the study had the coefficient of variation (CV) value ranged narrowly between 17 and 22. The narrow range of CV depicted that consumers participating in the survey shared a fairly similar view on SME brand equity (see Table 5.10).

The correlation matrix of the data depicted 676 pairs of correlations which are all significant ($p < .05$). The largest size of correlation was .752 of item 40 (The brand takes social responsibility to its heart.) and item 18 (The brand determines reasonable pricing) (see Table 5.11).

Table 5.10: Descriptive statistics of Exploratory constructs of SME brand equity (CFA data)

Variable	Min	Max	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>CV</i>
Component 1 $\alpha = .933$							
1.1 The brand maintains its uniqueness. (item 10)	1	5	4.03	.880	-.701	.334	.22
1.2 The brand crafts its products/ services with cares of customers' every detail. (item 12)	1	5	3.85	.983	-.660	.294	.26
1.3 The brand is the expert in its field. (item 13)	1	5	4.32	.806	-1.063	.819	.19
1.4 The brand's products/ services are safe. (item 16)	2	5	4.55	.656	-1.195	.439	.14
1.5 The brand offers quality product/service. (item 17)	2	5	4.55	.656	-1.195	.439	.14
1.6 The brand determines reasonable pricing. (item 18)	2	5	4.42	.698	-.826	-.387	.16
1.7 The brand has product/service that impresses you. (item 19)	1	5	4.40	.795	-1.349	1.873	.18
1.8 The brand's products and services are actually useful. (item 20)	2	5	4.48	.689	-1.138	.679	.15
1.9 The brand's marketing claims are accurate. (item 21)	2	5	4.44	.694	-.933	-.043	.16
1.10 The brand maintains the quality of its product/service. (item 22)	1	5	4.51	.703	-1.303	1.277	.16
1.11 The brand expresses its willingness to help. (item 29)	2	5	4.32	.744	-.733	-.353	.17
1.12 The brand answers your questions frankly. (item 30)	2	5	4.45	.718	-1.026	.100	.16
Component 2 $\alpha = .824$							
2.1 The brand is famous for its product/service. (item 8)	1	5	4.03	.880	-.701	.334	.22
2.2 The brand is the original of the particular product/ service. (item 9)	1	5	3.85	.983	-.660	.294	.26
2.3 The brand's story is interesting. (item 11)	1	5	3.89	1.029	-.868	.523	.26
2.4 The brand has something that cannot be found elsewhere. (item 26)	1	5	4.10	.876	-.824	.358	.21
2.5 The brand gives you an experience you never had before. (item 27)	1	5	4.18	.854	-.871	.549	.20
Component 3 $\alpha = .875$							
3.1 The brand is involved in its local community. (item 38)	1	5	4.29	.810	-.899	.175	.19
3.2 The brand does not harm the environment. (item 39)	2	5	4.45	.745	-1.159	.515	.17
3.3 The brand takes social responsibility to its heart. (item 40)	2	5	4.42	.741	-.981	-.001	.17
3.4 The brand helps improve the society. (item 41)	2	5	4.37	.771	-.914	-.195	.18
Component 4 $\alpha = .857$							
4.1 The brand responds positively to your special request. (item 31)	1	5	4.18	.820	-.677	-.171	.20
4.2 The brand keeps your privacy. (item 32)	1	5	4.44	.737	-1.193	1.075	.17
4.3 The brand has post-purchase service. (item 33)	1	5	4.34	.792	-1.065	.843	.18
4.4 The brand gives you the best offer. (item 34)	1	5	4.15	.847	-.862	.679	.20
4.5 The brand has many communication channels. (item 35)	1	5	4.41	.748	-1.219	1.515	.17
<i>N</i> = 419							

Table 5.11: Correlation matrix of exploratory constructs of SME brand equity

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26		
Brand functionality																												
1.item16	-																											
2.item17	.744	-																										
3.item22	.602	.597	-																									
4.item18	.689	.694	.668	-																								
5.item21	.562	.604	.625	.664	-																							
6.item20	.588	.630	.643	.698	.646	-																						
7.item13	.497	.460	.523	.510	.454	.569	-																					
8.item30	.550	.600	.630	.560	.561	.555	.446	-																				
9.item29	.494	.538	.529	.571	.551	.568	.514	.688	-																			
10.item10	.444	.458	.524	.491	.442	.423	.457	.551	.506	-																		
11.item12	.498	.493	.539	.511	.463	.537	.658	.536	.539	.491	-																	
12.item19	.449	.499	.500	.520	.391	.576	.434	.495	.486	.455	.477	-																
Brand authenticity																												
13.item9	.141	.189	.113	.192	.208	.175	.228	.206	.280	.418	.278	.216	-															
14.item11	.164	.185	.203	.210	.202	.270	.281	.193	.207	.405	.340	.310	.557	-														
15.item8	.304	.379	.320	.399	.344	.384	.429	.415	.426	.471	.413	.391	.548	.411	-													
16.item27	.299	.324	.313	.337	.383	.354	.333	.349	.416	.366	.364	.298	.461	.435	.422	-												
17.item26	.377	.389	.439	.449	.413	.457	.392	.417	.456	.407	.466	.414	.452	.459	.461	.669	-											
Brand local responsibility																												
18.item39	.513	.567	.578	.556	.456	.524	.405	.488	.447	.411	.387	.450	.287	.258	.346	.310	.365	-										
19.item41	.470	.436	.427	.441	.374	.458	.382	.430	.429	.391	.433	.443	.363	.365	.356	.353	.393	.618	-									
20.item40	.560	.551	.533	.547	.498	.527	.406	.503	.483	.424	.459	.425	.278	.285	.305	.363	.406	.752	.690	-								
21.item38	.378	.396	.387	.406	.377	.463	.416	.369	.450	.348	.455	.387	.392	.442	.332	.404	.491	.569	.628	.585	-							

Table 5.11: -- continued

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Brand attentiveness																											
22.item33	.469	.552	.524	.559	.543	.589	.423	.605	.582	.434	.499	.474	.279	.213	.440	.363	.425	.501	.511	.528	.409	-	-	-	-	-	-
23.item31	.358	.438	.416	.459	.413	.502	.392	.458	.500	.363	.422	.448	.354	.362	.426	.476	.461	.359	.448	.422	.391	.504	-	-	-	-	-
24.item35	.515	.524	.513	.536	.492	.539	.485	.559	.597	.446	.498	.418	.301	.242	.416	.488	.487	.529	.516	.558	.411	.618	.537	-	-	-	-
25.item34	.334	.390	.357	.410	.379	.491	.388	.369	.452	.318	.500	.474	.350	.347	.453	.501	.541	.363	.409	.384	.453	.576	.558	.525	-	-	-
26.item32	.556	.586	.577	.559	.537	.592	.572	.612	.564	.466	.535	.479	.198	.177	.376	.346	.371	.510	.514	.532	.404	.644	.461	.595	.457	-	-

All correlations are significant ($p < .05$).



Then, the covariance matrix with maximum likelihood estimation was used for the model computation undertaken by AMOS 22 statistical software. As the SME brand equity measurement model was developed by following the data-driven approach, the model was adjusted by allowing correlated errors and eliminating the problematic items that were high in measurement error. In particular, the third component (4 items) and other ten items were deleted (item 10, item 12, item 13, item 18, item 19, item 29, item 30, item 11, item 26, item 31).

After the respecification, the obtained measurement model fits well with the empirical data. According to McCoach et al. (2013), the quality measurement model should have a significant Likelihood-ratio chi-square (P -value), less than .06 Root-mean-square error of approximation (RMSEA), and at least .95 Comparative fit index (CFI). The measurement model of SME brand equity developed in this study achieved the appropriate values of all the absolute fit indices mentioned ($\chi^2 (37, N=419) = 40.220, p = .330; CFI = .999, RMSEA = .014$). These statistical values mean that the construct of SME brand equity measurement model was congruent with the empirical data or the opinions of typical consumers.

The confirmatory construct of SME brand equity consisted of 12 items that can be grouped into three components (see Table 5.12). The first component named **brand functionality** contained five items about how well an SME brand can fulfill the fundamental needs of consumers by providing the product/service that is suitable for the purpose it was designed for. The second component of SME brand equity was defined as **brand authenticity**. Three items of this component measured how well an SME brand is true to its nature and uniquely and freshly delivers its promise without imitating other brands. The third SME brand equity component was called **brand**

attentiveness which has five items about how well an SME is helpful and makes sure that its customers get what they need.

The standardized factor loadings of each component of SME brand equity and their items were reported in Table 5.13 and Figure 5.3.1. The confirmatory factor analysis yielded three components of SME brand equity with fairly high and significant standardized factor loading ($\hat{\beta} = .762 - .978, p < .05$). The high factor loadings of all three SME brand equity components can be interpreted that brand functionality, brand authenticity, and brand attentiveness are truly necessary for building SME brand equity.

Table 5.12: Confirmatory constructs of SME brand equity

Variable	Min	Max	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>CV</i>
Brand functionality $\alpha = .892$							
The brand's products/ services are safe. (item 16)	2	5	4.55	.656	-1.195	.439	.14
The brand offers quality product/service. (item 17)	2	5	4.55	.656	-1.195	.439	.14
The brand's products and services are actually useful. (item 20)	2	5	4.48	.689	-1.138	.679	.15
The brand's marketing claims are accurate. (item 21)	2	5	4.44	.694	-.933	-.043	.16
The brand maintains the quality of its product/service. (item 22)	1	5	4.51	.703	-1.303	1.277	.16
Brand authenticity $\alpha = .732$							
The brand is famous for its product/service. (item 8)	1	5	4.03	.880	-.701	.334	.22
The brand is the original of the particular product/ service. (item 9)	1	5	3.85	.983	-.660	.294	.26
The brand gives you an experience you never had before. (item 27)	1	5	4.18	.854	-.871	.549	.20
Brand attentiveness $\alpha = .839$							
The brand keeps your privacy. (item 32)	1	5	4.44	.737	-1.193	1.075	.17
The brand has post-purchase service. (item 33)	1	5	4.34	.792	-1.065	.843	.18
The brand gives you the best offer. (item 34)	1	5	4.15	.847	-.862	.679	.20
The brand has many communication channels. (item 35)	1	5	4.41	.748	-1.219	1.515	.17
<i>N</i> = 419							

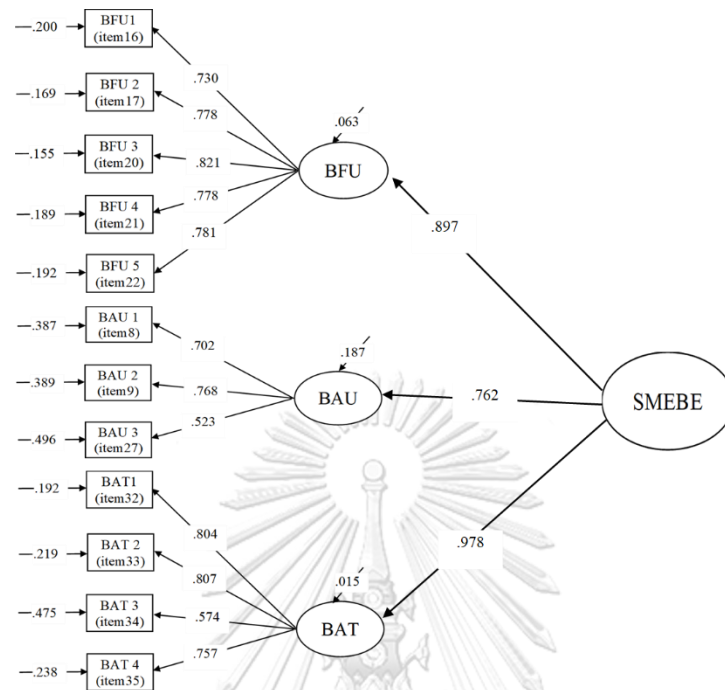
Moreover, each component can explain more than half of SME brand equity's variance. Specifically, 80.5% of the variance of SME brand equity can be explained by brand functionality ($R^2 = .805$). Brand authenticity explains 58.1 percent of brand equity ($R^2 = .581$). Lastly, 95.6% of SME brand equity variance can be effectively explained by brand attentiveness ($R^2 = .956$).

Among 12 items, the one with the highest standardized factor loading is item 20 (The brand's products and services are actually useful.) ($\hat{\beta} = .821, p < .05$) which can explain 67.4 percent of brand functionality's variance ($R^2 = .674$). The correlation matrix of SME brand equity construct was depicted in Table 5.14.

Table 5.13: Confirmatory factor analysis of SME brand equity construct

Variable	$\hat{\beta}$	<i>E</i>	<i>S.E.</i>	<i>t</i>	R^2
<i>Second-order confirmatory factor analysis</i>					
Components of SME brand equity (SMEBE)					
Brand functionality (BFU)	.897	.507	.032	15.769	.805
Brand authenticity (BAU)	.762	.397	.042	9.394	.581
Brand attentiveness (BAT)	.978	.579	.035	16.630	.956
<i>First-order confirmatory factor analysis</i>					
Brand functionality (BFU)					
BFU 1 (item 16)	.730	.845	.053	15.824	.533
BFU 2 (item 17)	.778	.901	.052	17.484	.605
BFU 3 (item 20)	.821	1.000			.674
BFU 4 (item 21)	.778	.952	.054	17.555	.605
BFU 5 (item 22)	.781	.969	.055	17.573	.610
Brand authenticity (BAU)					
BAU 1 (item 8)	.679	1.145	.134	8.548	.461
BAU 2 (item 9)	.388	.732	.120	6.089	.151
BAU 3 (item 27)	.615	1.000			.378
Brand attentiveness (BAT)					
BAT 1 (item 32)	.804	1.000			.646
BAT 2 (item 33)	.807	1.078	.062	17.308	.651
BAT 3 (item 34)	.574	.816	.072	11.306	.329
BAT 4 (item 35)	.757	.956	.059	16.202	.573
$\chi^2 (37, N=419) = 40.220, p = .330; CFI = .999, TLI = .998. RMSEA = .014$					
All factor loadings are significant ($p < .05$).					

Figure 5.1: Confirmatory factor analysis model of SME brand equity



$\chi^2 (37, N=419) = 40.220, p = .330; CFI = .999, TLI = .998, RMSEA = .014$

Note: All estimates are significant ($p < .05$).

Table 5.14: Correlation matrix of confirmatory constructs of SME brand equity

	1	2	3	4	5	6	7	8	9	10	11	12
Brand functionality												
1.Item16	-											
2.Item17	.744	-										
3.Item20	.588	.630	-									
4.Item21	.562	.604	.646	-								
5.Item22	.602	.597	.643	.625	-							
Brand authenticity												
6. Item 8	.304	.379	.384	.344	.320	-						
7. Item 9	.141	.189	.175	.208	.113	.548	-					
8.Item27	.299	.324	.354	.383	.313	.422	.461	-				
Brand attentiveness												
9.Item32	.556	.586	.592	.537	.577	.376	.198	.346	-			
10.Item33	.469	.552	.589	.543	.524	.440	.279	.363	.644	-		
11.Item34	.334	.390	.491	.379	.357	.453	.350	.501	.457	.576	-	
12.Item35	.515	.524	.539	.492	.513	.416	.301	.488	.595	.618	.525	-

All correlations are significant ($p < .05$).

Part 4 Competing measurement models of SME brand equity

This study fulfills the lack of research regarding brand equity model comparison by examining three forms of brand equity model existing in the literature. Three competing models consisting of a second-order factor model, a causal model, and a causal model with relationships between dimensions. The first alternative model of SME brand equity is the second-order factor model which refers to the structure of measurement that treats brand equity as a second-order latent variable reflected by five first-order latent variables. The second type of model is the causal model which also comprises of brand equity and its sub-dimensions, but the five first-order latent variables form or cause brand equity, rather than reflect or appear to be caused by brand equity. The third model or the causal model with relationships between dimensions proposes the hierarchical links between brand equity's dimensions.

The dataset in this part consisted of 419 cases of general consumers that were previously used for confirming the SME brand equity construct. Series of confirmatory factor analyses (CFA) and structural equation modeling (SEM) were performed by allowing correlated errors via AMOS 22 statistical program to assess three competing models respectively. The suitable measurement model should have a significant Likelihood-ratio chi-square (P-value), less than .06 Root-mean-square error of approximation (RMSEA), and at least .95 Comparative fit index (CFI) (McCoach et al., 2013).

Model 1: Second-order factor model

For testing the second-order factor model, SME brand equity was specified as a second-order latent variable and was reflected by three first-order latent variables including brand functionality, brand authenticity, and brand attentiveness

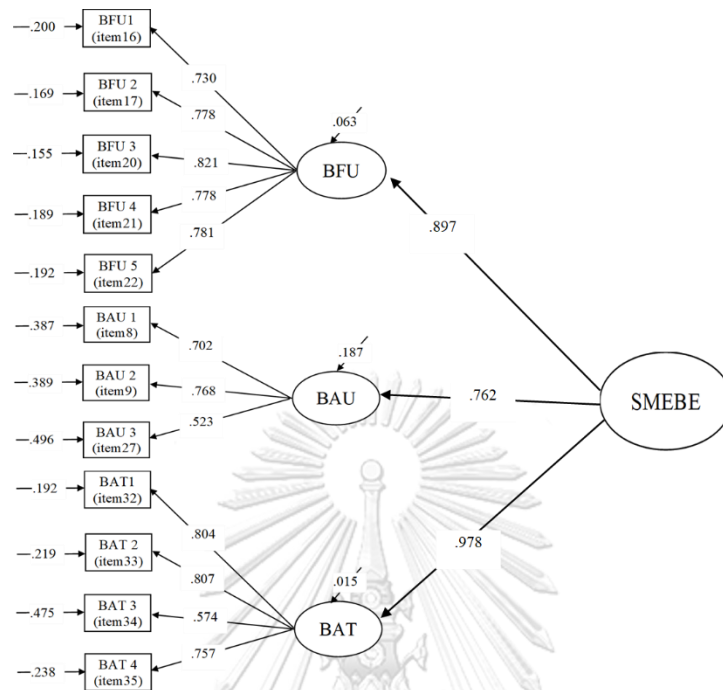
(see Figure 5.2). The first competing model is identical to the confirmatory construct of SME brand equity. Therefore, descriptive statistics and correlation matrix obtained here were same as those presented in part 3 (see Table 5.13 and Table 5.14).

The findings showed that the second-order factor model of SME brand equity fitted well with the empirical data ($\chi^2 (37, N=419) = 40.220, p = .330$; CFI = .999, RMSEA = .014) (see Table 5.15). These statistical values mean that SME brand equity can be treated as a complex variable which is reflected by three dimensions including brand functionality, brand authenticity, and brand attentiveness.

Table 5.15: Second-order factor model of SME brand equity (Model 1)

Variable	$\hat{\beta}$	<i>E</i>	<i>S.E.</i>	<i>t</i>	<i>R</i> ²
<i>Second-order confirmatory factor analysis</i>					
Components of SME brand equity (SMEBE)					
Brand functionality (BFU)	.897	.507	.032	15.769	.805
Brand authenticity (BAU)	.762	.397	.042	9.394	.581
Brand attentiveness (BAT)	.978	.579	.035	16.630	.956
<i>First-order confirmatory factor analysis</i>					
Brand functionality (BFU)					
BFU 1 (item 16)	.730	.845	.053	15.824	.533
BFU 2 (item 17)	.778	.901	.052	17.484	.605
BFU 3 (item 20)	.821	1.000			.674
BFU 4 (item 21)	.778	.952	.054	17.555	.605
BFU 5 (item 22)	.781	.969	.055	17.573	.610
Brand authenticity (BAU)					
BAU 1 (item 8)	.679	1.145	.134	8.548	.461
BAU 2 (item 9)	.388	.732	.120	6.089	.151
BAU 3 (item 27)	.615	1.000			.378
Brand attentiveness (BAT)					
BAT 1 (item 32)	.804	1.000			.646
BAT 2 (item 33)	.807	1.078	.062	17.308	.651
BAT 3 (item 34)	.574	.816	.072	11.306	.329
BAT 4 (item 35)	.757	.956	.059	16.202	.573
$\chi^2 (37, N=419) = 40.220, p = .330$; CFI = .999, TLI = .998. RMSEA = .014					
All factor loadings are significant ($p < .05$).					

Figure 5.2: Second-order factor model of SME brand equity (Model 1)



$\chi^2 (37, N=419) = 40.220, p = .330; CFI = .999, TLI = .998, RMSEA = .014$

Note: All estimates are significant ($p < .05$).

Model 2: Causal model

The second competing model or the causal model was run by determining the independent variables that cause SME brand equity. Three first-order latent variables which are brand functionality, brand authenticity, and brand attentiveness were set to form SME brand equity (see Figure 5.3). As SME brand equity is the dependent variable in this model, it must have some items or observed variables that measure itself. This study adopted Yoo and Donthu (2001)'s four items of overall brand equity to test this second competing model. The descriptive statistics and the correlation matrix of this model were presented in Table 5.16 and Table 5.17.

The results illustrated that the causal model was different from the data collected from participants ($\chi^2 (85, N=419) = 574.045, p = .000; CFI = .868, RMSEA = .117$) (see Table 5.18). These goodness-of-fit statistical values showed that SME brand equity variable might not be formed by brand functionality, brand authenticity, and brand attentiveness.

Table 5.16: Descriptive statistics of brand equity variable (Scale of Yoo and Donthu's 2001)

Variable	Min	Max	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>CV</i>
Brand equity (Yoo & Donthu, 2001) $\alpha = .867$							
It makes sense to buy X instead of any other brand, even if they are the same	1	5	4.19	.774	-.686	.134	.18
Even if another brand has the same features as X, I would prefer to buy X	1	5	4.22	.811	-.891	.712	.19
If there is another brand as good as X, I prefer to buy X.	1	5	4.15	.873	-.920	.753	.21
If another brand is not different from X in any way, it seems smarter to purchase X.	1	5	4.09	.921	-.964	.877	.23
<i>N</i> = 419							

Table 5.17: Correlation matrix of brand equity variable (Yoo and Donthu (2001)'s scale) and this study's three components of SME brand equity

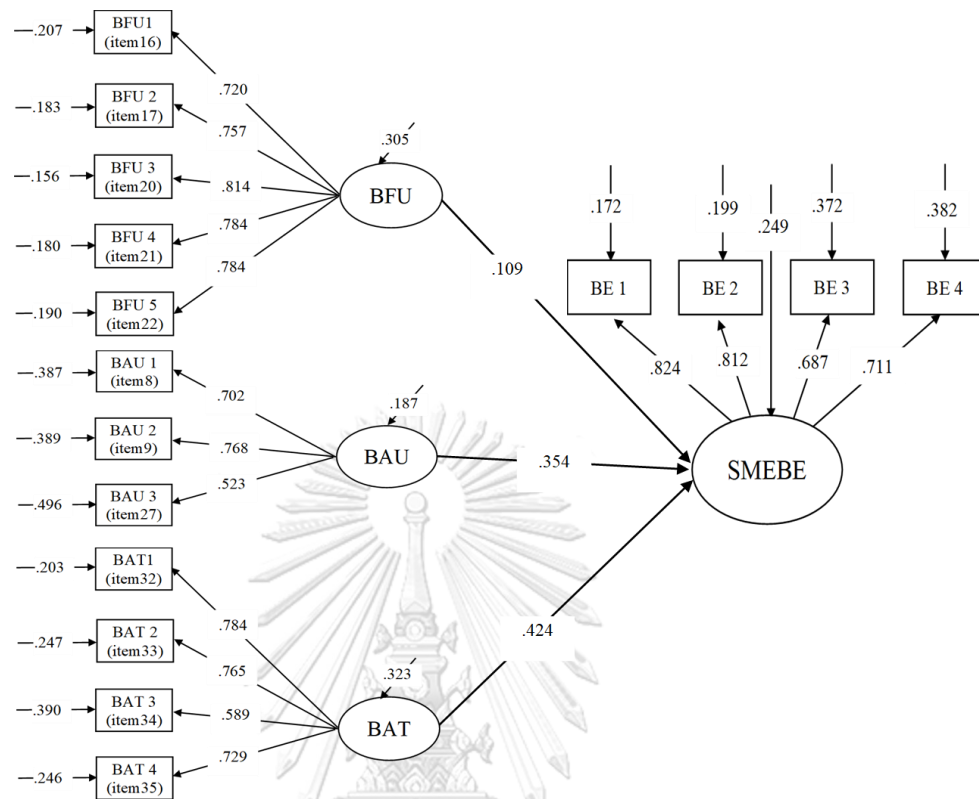
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Brand functionality																
1.Item16	-															
2.Item17	.744	-														
3.Item20	.588	.630	-													
4.Item21	.562	.604	.646	-												
5.Item22	.602	.597	.643	.625	-											
Brand authenticity																
6. Item 8	.304	.379	.384	.344	.320	-										
7. Item 9	.141	.189	.175	.208	.113	.548	-									
8.Item27	.299	.324	.354	.383	.313	.422	.461	-								
Brand attentiveness																
9.Item32	.556	.586	.592	.537	.577	.376	.198	.346	-							
10.Item33	.469	.552	.589	.543	.524	.440	.279	.363	.644	-						
11.Item34	.334	.390	.491	.379	.357	.453	.350	.501	.457	.576	-					
12.Item35	.515	.524	.539	.492	.513	.416	.301	.488	.595	.618	.525	-				
Brand equity (Yoo & Donthu, 2001)																
13. BE 1	.293	.322	.276	.211	.255	.310	.274	.257	.351	.363	.315	.279	-			
14. BE 2	.284	.291	.255	.187	.412	.378	.395	.389	.365	.380	.373	.255	.709	-		
15. BE 3	.343	.338	.287	.308	.343	.280	.377	.284	.358	.341	.361	.336	.591	.598	-	
16. BE 4	.355	.338	.279	.229	.330	.255	.239	.229	.417	.391	.379	.310	.627	.624	.605	-

All correlations are significant ($p < .05$).

Table 5.18: Causal model of SME brand equity (Model 2)

Variable	$\hat{\beta}$	<i>E</i>	<i>S.E.</i>	<i>t</i>	<i>R</i> ²				
<i>Confirmatory factor analysis of SME brand equity components</i>									
Brand functionality (BFU)									
BFU 1 (item 16)	.720	.853	.057	14.937	.518				
BFU 2 (item 17)	.757	.897	.055	16.320	.573				
BFU 3 (item 20)	.814	1.000			.663				
BFU 4 (item 21)	.784	.970	.057	17.054	.615				
BFU 5 (item 22)	.784	.998	.059	17.037	.615				
Brand authenticity (BAU)									
BAU 1 (item 8)	.702	1.419	.161	8.831	.493				
BAU 2 (item 9)	.768	1.732	.198	8.728	.590				
BAU 3 (item 27)	.523	1.000			.274				
Brand attentiveness (BAT)									
BAT 1 (item 32)	.784	1.000			.615				
BAT 2 (item 33)	.765	1.038	.074	14.045	.585				
BAT 3 (item 34)	.589	.802	.075	10.700	.347				
BAT 4 (item 35)	.729	.930	.068	13.722	.531				
<i>Confirmatory factor analysis of brand equity (Yoo & Donthu, 2001)</i>									
SME brand equity (SMEBE)									
BE1	.824	1.000			.679				
BE2	.812	1.027	.061	16.922	.659				
BE3	.687	.953	.068	13.988	.472				
BE4	.711	1.034	.071	14.572	.506				
All factor loadings are significant ($p < .05$).									
<i>Effects of three components on SME brand equity</i>									
IV	Brand functionality (BFU)			Brand authenticity (BAU)			Brand attentiveness (BAT)		
	TE	IE	DE	TE	IE	DE	TE	IE	DE
DV									
	SME brand equity (SMEBE)	.109		.109	.354	.354	.424		.424
		.119		.119	.495	.495	.450		.450
R ²	.012						.180		
$\chi^2(85, N=419) = 574.045, p = .000; CFI = .868, TLI = .813, RMSEA = .117$ All standardized effects are significant ($p < .05$). IV = Independent variable; DV = Dependent variable TE = Total effect; IE = Indirect effect; DE = Direct effect First line = Standardized estimates Second line = Estimates									

Figure 5.3: Causal model of SME brand equity (Model 2)



$\chi^2 (85, N=419) = 574.045, p = .000; CFI = .868, TLI = .813, RMSEA = .117$

Note: All estimates are significant ($p < .05$).

Model 3: Causal model with relationships between dimensions

The third competing model examined in this study was the causal model with relationships between dimensions. Three components of SME brand equity were set to interrelate hierarchically to test whether brand equity's dimensions have a potential causal order. Since the data set, items, and components of SME brand equity analyzed here were identical to the confirmatory construct of SME brand equity, descriptive statistics and correlation matrix of the third competing model were same as those presented in part 3 (see Table 5.13 and Table 5.14).

Three components of SME brand equity were determined to relate to each other according to Keller (2001)'s pyramid of brand equity and the modification indices suggested by the AMOS 22 statistical program. Brand functionality was set as the exogenous variable affected both brand authenticity and brand attentiveness. Brand authenticity was the mediator between brand functionality and brand attentiveness. The dependent variable of the model was brand attentiveness (see Figure 5.4).

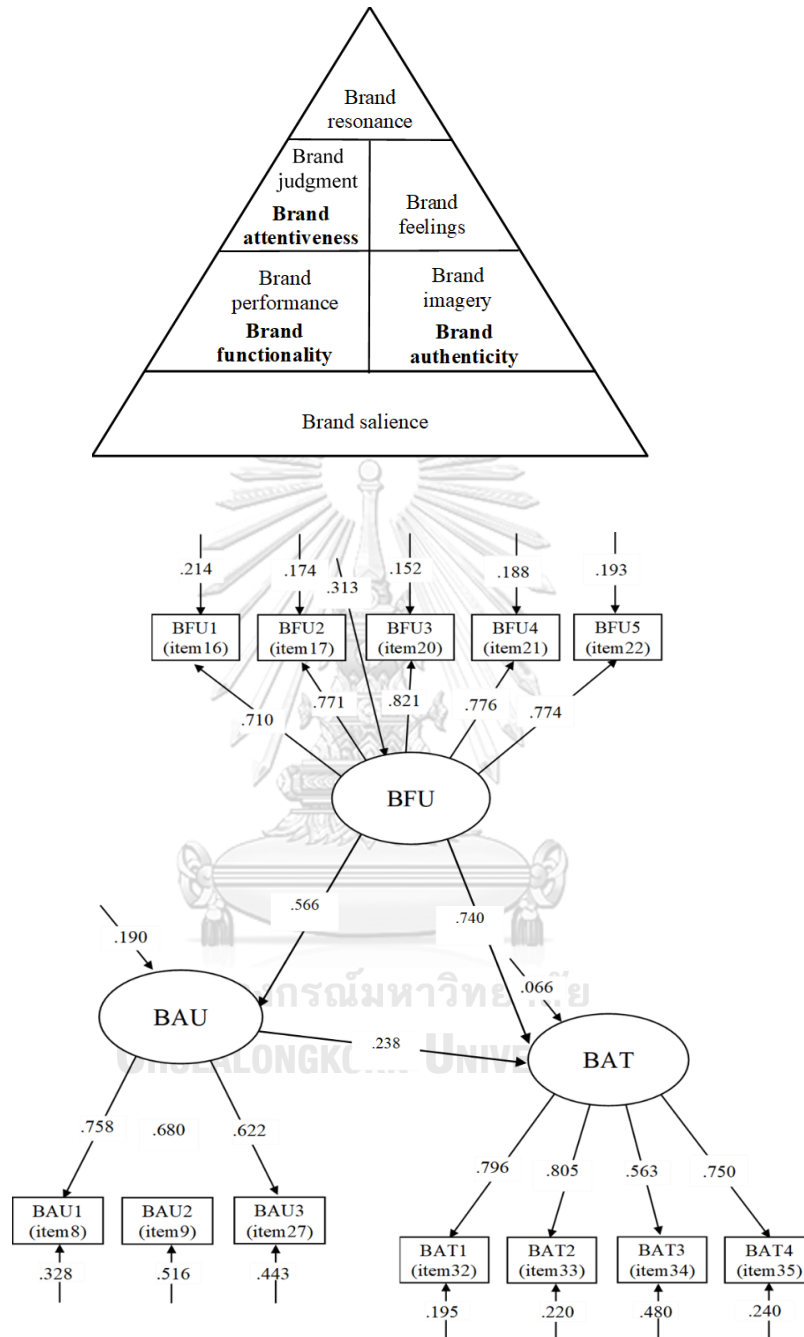
When being plotted on Keller's (2001) brand equity pyramid, *brand functionality* should be in the block of brand performance which refers to the fundamental benefits of product or service that fulfill consumers' primary need. *Brand authenticity*, which is the consumer perception of the originality of the brand, was put into the block of brand imagery, or the extrinsic product attributes that meet customers' abstract psychological or social needs. Lastly, *brand attentiveness* located in the block of brand judgments, as consumers probably perceive the helpfulness of the brand based on their different brand functionality and brand authenticity associations (see Figure 5.4).

The findings showed that the causal model with relationships between dimensions was significantly different from the empirical data (χ^2 (36, $N=419$) = 58.221, $p = .011$; CFI = .992, RMSEA = .038) (see Table 5.19). These goodness-of-fit statistical values mean that SME brand equity variable might not be explained by the causal model with relationships between dimensions of brand functionality, brand authenticity, and brand attentiveness.

Table 5.19: Causal model with relationships between dimensions of SME brand equity (Model 3)

Variable	$\hat{\beta}$	<i>E</i>	<i>S.E.</i>	<i>t</i>	<i>R</i> ²		
<i>Confirmatory factor analysis of SME brand equity components</i>							
Brand functionality (BFU)							
BFU 1 (item 16)	.710	.831	.054	15.302	.504		
BFU 2 (item 17)	.771	.902	.052	17.268	.594		
BFU 3 (item 20)	.821	1.000			.674		
BFU 4 (item 21)	.776	.955	.055	17.498	.602		
BFU 5 (item 22)	.774	.959	.055	17.358	.599		
Brand authenticity (BAU)							
BAU 1 (item 8)	.758	1.260	.118	10.639	.575		
BAU 2 (item 9)	.680	1.260	.125	10.056	.462		
BAU 3 (item 27)	.622	1.000			.387		
Brand attentiveness (BAT)							
BAT 1 (item 32)	.796	1.000			.634		
BAT 2 (item 33)	.805	1.096	.064	17.168	.648		
BAT 3 (item 34)	.563	.811	.074	10.999	.317		
BAT 4 (item 35)	.750	.956	.060	15.874	.563		
All factor loadings are significant ($p < .05$).							
<hr/>							
IV DV	Brand functionality (BFU)			Brand authenticity (BAU)			<i>R</i> ²
	TE	IE	DE	TE	IE	DE	
Brand authenticity (BAU)		.566		.566			.320
		.534		.534			
Brand attentiveness (BAT)		.875	.135	.740	.238	.238	1.239
		.908	.140	.768	.262	.262	
<hr/>							
$\chi^2(36, N=419) = 58.221, p = .011; CFI = .992, TLI = .985, RMSEA = .038$							
All standardized effects are significant ($p < .05$).							
IV = Independent variable; DV = Dependent variable							
TE = Total effect; IE = Indirect effect; DE = Direct effect							
First line = Standardized estimates							
Second line = Estimates							

Figure 5.4: Causal model with relationships between dimensions of SME brand equity (Model 3)



$\chi^2 (36, N=419) = 58.221, p = .011; CFI = .992, TLI = .985, RMSEA = .038$

Note: All estimates are significant ($p < .05$).

Comparison of three competing models

Among three competing models of SME brand equity, only the second-order factor model (Model 1) fitted with the data ($\chi^2 (37, N=419) = 40.220, p = .330$; CFI = .999, RMSEA = .014). The causal model (Model 2) ($\chi^2 (85, N=419) = 574.045, p = .000$; CFI = .868, RMSEA = .117) and the causal model with relationships between dimensions (Model 3) ($\chi^2 (36, N=419) = 58.221, p = .011$; CFI = .992, RMSEA = .038) differed significantly from the empirical evidence. Based on these findings, it might be concluded that the second-order factor model (Model 1) most effectively explained the construct of SME brand equity.



Part 5 Measurement invariance of SME brand equity model

This part of the findings focused on the invariance of SME brand equity measurement model across the business sectors (Manufacturing, service, and trade) and among consumers differing in their characteristics (High and low in SME brand equity, product involvement, and brand engagement). According to the pattern of the best-fitting model, SME brand equity was set to be a second-order latent variable. The five first-order latent variables consisted of brand functionality, brand authenticity, and brand attentiveness which were three components obtained from the confirmatory factor analysis plus two dimensions including brand awareness and brand resonance for the theory testing purpose.

According to Keller's (2001) brand equity pyramid, brand awareness and brand resonance located at the base and the top of the pyramid, respectively. These two dimensions served as the first independent variable and the last dependent variable which would not be noticed by most consumer participants focusing merely on the brand evaluation or the middle part of the pyramid. As such, brand awareness and brand resonance could not be qualitatively derived from the opinion of consumers, and had to be theoretically added into the SME brand equity measurement model. The quality measurement model should have a non-significant Likelihood-ratio chi-square (P -value > .05), less than .06 Root-mean-square error of approximation (RMSEA), and at least .95 Comparative fit index (CFI) (McCoach et al., 2013)

For examining the SME brand equity model's generalizability across different groups of businesses and consumers, multi-group confirmatory factor analysis was

computed by AMOS 22 statistical software to check the SME brand equity model's invariance of factor patterns and factor loadings.

According to the practice of testing for factorial invariance, the SME brand equity model should begin with the separate estimation for each group under the study. Then, the hypothesized model that was identical for all groups was specified. For testing the hypotheses, the parameters of the model were constrained to be equal in an orderly sequence (Byrne, 2001). The difference in χ^2 values of the hypothesized model and the constrained model would be tested for the statistical significance ($p < .05$, two-tailed test) to conclude whether the measurement model is invariant or not.

Test of SME brand equity model's measurement invariance across business sectors

For the examination of measurement invariance across business sectors, the SME brand equity model was checked whether its factor loadings and factor patterns are invariant between manufacturing, service, and trade settings. The data for each group of business sectors were 184 customers assessing the SME brand equity of a specific brand. Tofusan, Santa fe', and Eveandboy were the three selected SME brands for the manufacturing, service, and trade sectors, respectively. The normality test and the correlation matrix of the three brands' SME brand equity models were provided here for the replication of the future research (for Tofusan, see Table 5.20 and Table 5.21; for Santa fe', see Table 5.22 and Table 5.23; for Eveandboy, see Table 5.24 and Table 5.25).

The findings showed that three brands' SME brand equity models fit well with the empirical data or the opinion of their customers (Tofusan: χ^2 (204, $N=184$) =

210.241, $p = .367$; CFI = .997, RMSEA = .013 [see Table 5.26]) (Santa fe': χ^2 (194, $N=184$) = 219.594, $p = .100$; CFI = .992, RMSEA = .027 [see Table 5.27]) (Eveandboy: χ^2 (202, $N=184$) = 203.404, $p = .459$; CFI = .999, RMSEA = .037 [see Table 5.28]).

Moreover, the SME brand equity measurement models of all three selected brands shared the same pattern of SME brand equity factors (for Tofusan, see Figure 5.5; for Santa fe', see Figure 5.6; for Eveandboy, see Figure 5.7). The similar factor pattern of these SME brands can be interpreted as SME brand equity measurement model's configural invariance across the three different business sectors. In other words, all three contexts have equal numbers of items and components measuring SME brand equity. The construct of the SME brand equity model is identical across the three business setting as well.

Table 5.20: Descriptive statistics of selected manufacturing SME's brand equity and its consumer characteristics (Tofusan)

Variable	Min	Max	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>CV</i>
SME brand equity	1.74	5.00	3.17	.571	.470	.433	.18
Brand awareness $\alpha = .882$	1.20	5.00	3.06	.788	.261	-.063	.26
Brand...is familiar. (P1_12)	1	5	3.16	.913	.118	.108	.29
Brand...is well known. (P1_13)	1	5	3.15	.899	.060	-.082	.29
Brand...is visible. (P1_14)	1	5	3.18	1.048	.008	-.530	.33
Brand...is heard a lot. (P1_15)	1	5	2.94	.948	.159	-.282	.32
Brand...is famous. (P1_16)	1	5	2.88	.968	.243	-.356	.34
Brand functionality $\alpha = .779$	1.80	5.00	3.30	.658	.080	-.489	.20
The brand's products/ services are safe. (item 16)	1	5	3.80	.890	-.498	.052	.23
The brand offers quality product/service. (item 17)	2	5	3.52	.816	-.114	-.481	.23
The brand's products and services are actually useful. (item 20)	1	5	3.15	.874	.245	-.508	.28
The brand's marketing claims are accurate. (item 21)	1	5	2.97	.972	.163	-.347	.33
The brand maintains the quality of its product/service. (item 22)	1	5	3.06	.953	.186	-.340	.31
Brand authenticity $\alpha = .743$	1.00	5.00	3.04	.768	.216	-.254	.25
The brand is famous for its product/service. (item 8)	1	5	3.01	.958	.167	-.404	.32
The brand is the original of the particular product/ service. (item 9)	1	5	3.02	.941	.235	-.262	.31
The brand gives you an experience you never had before. (item 27)	1	5	3.10	.936	-.035	-.319	.30

Table 5.20: --continued

Variable	Min	Max	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>CV</i>
Brand attentiveness $\alpha = .794$	1.50	5.00	3.16	.685	.169	-.143	.22
The brand keeps your privacy. (item 32)	1	5	3.21	.830	.176	-.028	.26
The brand has post-purchase service. (item 33)	1	5	3.20	.880	-.015	-.371	.27
The brand gives you the best offer. (item 34)	1	5	3.15	.886	-.208	-.195	.28
The brand has many communication channels. (item 35)	1	5	3.10	.888	.233	-.485	.29
Brand resonance $\alpha = .868$	1.00	5.00	3.19	.720	.051	.307	.23
I would like to buy brand... (P2_1)	1	5	3.46	.916	-.430	-.124	.26
I consider myself to be loyal to brand... (P2_2)	1	5	3.18	.915	-.061	.076	.29
I am willing to recommend brand... to my friends. (P2_3)	1	5	3.11	.874	-.015	.092	.28
I am used to brand... (P2_4)	1	5	3.14	.963	-.016	-.528	.31
Brand... would be my first choice. (P2_5)	1	5	2.98	.941	.243	-.217	.32
I will not buy other brands if brand... is available at the store. (P2_6)	1	5	3.26	.950	-.184	-.322	.29
Consumer characteristics							
Product involvement $\alpha = .797$	1.33	5.00	3.38	.793	.061	-.553	.23
I would care a great deal when selecting to buy one from many types and brands of product... available in the market (P1_1)	1	5	3.65	.862	-.127	-.378	.24
It is important to me to make a right choice of product... (P1_2)	1	5	3.29	.969	-.023	-.379	.29
I am concerned about the outcome of my choice when making my selection of product... (P1_3)	1	5	3.22	.984	.107	-.600	.31
<i>N</i> = 174							
Brand engagement $\alpha = .852$	1.00	5.00	3.14	.654	-.060	.562	.21
I have a special bond with brand... (P1_4)	1	5	3.01	.950	-.050	-.319	.32
I consider brand... to be a part of myself. (P1_5)	1	5	3.02	.941	.156	-.428	.31
I often feel a personal connection between brand... and me. (P1_6)	1	5	2.90	.950	.170	-.305	.33
Part of me is defined by brand... (P1_7)	1	5	3.01	.986	-.022	-.554	.33
I feel as if I have a close personal connection with brand... (P1_8)	1	5	2.95	1.062	-.095	-.621	.36
I can identify with brand... (P1_9)	1	5	3.74	.820	-.699	1.036	.22
There are links between brand... and how I view myself. (P1_10)	1	5	3.37	.852	-.470	.329	.25
Brand... are an important indication of who I am. (P1_11)	1	5	3.14	.876	-.280	-.031	.28
<i>N</i> = 170							

Table 5.21: Correlation matrix of the selected manufacturing SME's brand equity (Tofusan)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Brand awareness																								
1.PI_12	-																							
2.PI_13	.590	-																						
3.PI_14	.519	.655	-																					
4.PI_15	.491	.543	.709	-																				
5.PI_16	.498	.587	.668	.725	-																			
Brand functionality																								
6.item 16	.240	.228	.299	.307	.297	-																		
7.item 17	.133	.131	.284	.230	.289	.726	-																	
8.item 20	.237	.191	.322	.262	.394	.277	.418	-																
9.item 21	.155	.132	.275	.342	.373	.183	.266	.332	-															
10.item22	.150	.141	.364	.397	.416	.213	.332	.560	.645	-														
Brand authenticity																								
11.item 8	.423	.365	.366	.423	.365	.182	.188	.416	.429	.448	-													
12.item 9	.398	.384	.372	.398	.384	.273	.241	.362	.341	.437	.655	-												
13.item27	.390	.345	.344	.390	.345	.154	.241	.343	.297	.373	.407	.407	-											
Brand attentiveness																								
14.item32	.281	.273	.202	.252	.249	.166	.261	.341	.346	.378	.409	.344	.318	-										
15.item33	.355	.272	.299	.237	.311	.239	.281	.351	.358	.409	.432	.391	.434	.579	-									
16.item34	.267	.211	.141	.219	.251	.163	.216	.280	.354	.364	.307	.245	.423	.403	.500	-								
17.item35	.345	.262	.263	.260	.230	.197	.262	.255	.307	.413	.359	.312	.337	.439	.451	.571	-							

Table 5.21: --continued

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Brand resonance																								
18. P2_1	.292	.418	.396	.504	.443	.231	.180	.281	.302	.438	.386	.413	.298	.299	.353	.197	.274	-	-	-	-	-	-	-
19. P2_2	.280	.319	.375	.418	.457	.265	.263	.376	.313	.439	.416	.357	.382	.390	.369	.317	.321	.717	-	-	-	-	-	-
20. P2_3	.364	.354	.372	.371	.403	.168	.181	.393	.364	.425	.403	.383	.341	.323	.341	.331	.282	.545	.638	-	-	-	-	-
21. P2_4	.353	.359	.483	.482	.464	.152	.209	.410	.419	.438	.449	.389	.404	.327	.374	.386	.298	.412	.537	.690	-	-	-	-
22. P2_5	.345	.376	.422	.452	.471	.171	.250	.456	.334	.422	.394	.365	.331	.328	.336	.404	.290	.373	.494	.614	.733	-	-	-
23. P2_6	.292	.418	.396	.504	.443	.338	.294	.249	.215	.273	.399	.349	.242	.307	.285	.174	.223	.412	.431	.361	.404	.520	-	-

All correlations are significant ($p < .05$).



Table 5.22: Descriptive statistics of selected service SME's brand equity and its consumer characteristics (Santa fe')

Variable	Min	Max	M	SD	Sk	Ku	CV
SME brand equity	1.00	5.00	3.4457	.62196	1.00	2.564	.18
Brand awareness $\alpha = .923$	1.00	5.00	3.5087	.76618	-.389	1.079	.22
Brand...is familiar. (P1_12)	1	5	3.47	.855	-.074	.137	.25
Brand...is well known. (P1_13)	1	5	3.62	.840	-.541	.799	.23
Brand...is visible. (P1_14)	1	5	3.54	.822	-.391	.451	.23
Brand...is heard a lot. (P1_15)	1	5	3.48	.935	-.419	-.003	.27
Brand...is famous. (P1_16)	1	5	3.42	.926	-.401	-.067	.27
Brand functionality $\alpha = .880$	1.00	5.00	3.5402	.66292	-.592	2.128	.19
The brand's products/ services are safe. (item 16)	1	5	3.76	.766	-.520	.944	.20
The brand offers quality product/service. (item 17)	1	5	3.59	.798	-.614	1.148	.22
The brand's products and services are actually useful. (item 20)	1	5	3.42	.820	-.204	.004	.24
The brand's marketing claims are accurate. (item 21)	1	5	3.46	.809	-.453	.379	.23
The brand maintains the quality of its product/service. (item 22)	1	5	3.47	.836	-.509	.490	.24
Brand authenticity $\alpha = .800$	1.00	5.00	3.4185	.70085	-.585	1.297	.21
The brand is famous for its product/service. (item 8)	1	5	3.46	.781	-.167	.298	.23
The brand is the original of the particular product/service. (item 9)	1	5	3.42	.819	-.428	.509	.24
The brand gives you an experience you never had before. (item 27)	1	5	3.38	.885	-.492	.075	.26
Brand attentiveness $\alpha = .835$	1.00	5.00	3.3804	.64335	-.664	1.861	.19
The brand keeps your privacy. (item 32)	1	5	3.44	.737	-.496		.21
The brand has post-purchase service. (item 33)	1	5	3.35	.802	-.456		.24
The brand gives you the best offer. (item 34)	1	5	3.36	.798	-.361		.24
The brand has many communication channels. (item 35)	1	5	3.37	.806	-.391		.24
Brand resonance $\alpha = .911$	1.00	5.00	3.3714	.71399	-.636	1.410	.21
I would like to buy brand... (P2_1)	1	5	3.46	.767	-.403		.22
I consider myself to be loyal to brand... (P2_2)	1	5	3.35	.843	-.580		.25
I am willing to recommend brand... to my friends. (P2_3)	1	5	3.33	.826	-.273		.25
I am used to brand... (P2_4)	1	5	3.36	.906	-.328		.27
Brand...would be my first choice. (P2_5)	1	5	3.42	.908	-.486		.27
I will not buy other brands if brand...is available at the store. (P2_6)	1	5	3.31	.891	-.371		.27
N = 184							

Table 5.22: --continued

Variable	Min	Max	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>CV</i>
Consumer characteristics							
Product involvement $\alpha = .824$	1.00	5.00	3.51	.750	-.728	1.368	.21
I would care a great deal when selecting to buy one from many types and brands of product...available in the market (P1_1)	1	5	3.63	.877	-.724	.841	.24
It is important to me to make a right choice of product... (P1_2)	1	5	3.55	.867	-.627	.705	.24
I am concerned about the outcome of my choice when making my selection of product... (P1_3)	1	5	3.34	.872	-.164	-.183	.26
<i>N</i> = 173							
Brand engagement $\alpha = .939$	1.00	5.00	3.29	.787	-.853	.976	.24
I have a special bond with brand... (P1_4)	1	5	3.18	.884	-.168	-.461	.28
I consider brand... to be a part of myself.(P1_5)	1	5	3.26	.928	-.585	-.205	.28
I often feel a personal connection between brand...and me.(P1_6)	1	5	3.31	.962	-.769	.203	.29
Part of me is defined by brand... (P1_7)	1	5	3.20	.940	-.572	.128	.29
I feel as if I have a close personal connection with brand... (P1_8)	1	5	3.13	.983	-.475	-.218	.31
I can identify with brand... (P1_9)	1	5	3.55	.928	-.933	1.000	.26
There are links between brand...and how I view myself. (P1_10)	1	5	3.39	.963	-.966	.769	.28
Brand...are an important indication of who I am. (P1_11)	1	5	3.26	.934	-.544	.323	.29
<i>N</i> = 171							

Table 5.23: Correlation matrix of selected service SME's brand equity (Santa fe')

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Brand awareness																								
1.PI_12	-																							
2.PI_13	.720	-																						
3.PI_14	.646	.760	-																					
4.PI_15	.642	.712	.776	-																				
5.PI_16	.642	.732	.689	.746	-																			
Brand functionality																								
6.Item 16	.490	.454	.422	.391	.328	-																		
7.Item 17	.528	.452	.507	.474	.453	.758	-																	
8.Item 20	.453	.510	.519	.515	.511	.536	.570	-																
9.Item 21	.555	.583	.590	.545	.587	.495	.573	.721	-															
10.Item22	.557	.620	.538	.580	.636	.467	.499	.631	.706	-														
Brand authenticity																								
11.Item 8	.501	.595	.526	.527	.517	.585	.549	.575	.594	.622	-													
12.Item 9	.512	.468	.475	.469	.507	.500	.525	.556	.593	.547	.605	-												
13.Item27	.497	.472	.446	.490	.482	.449	.518	.575	.573	.605	.514	.601	-											
Brand attentiveness																								
14.Item32	.474	.507	.428	.419	.422	.507	.441	.540	.541	.539	.541	.553	.496	-										
15.Item33	.404	.397	.419	.438	.411	.421	.413	.498	.521	.536	.443	.526	.498	.572	-									
16.Item34	.427	.506	.449	.414	.433	.438	.392	.456	.537	.551	.512	.568	.576	.525	.535	-								
17.Item35	.530	.561	.498	.516	.528	.507	.485	.514	.545	.583	.486	.534	.553	.525	.544	.656	-							

Table 5.23: --continued

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Brand resonance																							
18. P2_1	.560	.649	.579	.521	.572	.540	.542	.577	.552	.522	.626	.616	.483	.561	.433	.539	.539	-	-	-	-	-	-
19. P2_2	.464	.427	.434	.434	.409	.436	.486	.597	.548	.460	.492	.687	.551	.531	.577	.547	.531	.620	-	-	-	-	-
20. P2_3	.620	.645	.589	.506	.573	.445	.424	.599	.599	.619	.527	.561	.567	.495	.485	.554	.546	.623	.600	-	-	-	-
21. P2_4	.619	.623	.605	.613	.599	.360	.440	.574	.596	.539	.516	.599	.551	.474	.466	.528	.513	.557	.641	.724	-	-	-
22. P2_5	.539	.544	.524	.514	.548	.365	.368	.620	.617	.544	.500	.608	.515	.467	.474	.505	.452	.564	.641	.674	.720	-	-
23. P2_6	.474	.521	.517	.377	.469	.429	.457	.567	.561	.477	.557	.563	.459	.557	.475	.517	.471	.647	.617	.595	.552	.697	-

All correlations are significant ($p < .05$).



Table 5.24: Descriptive statistics of selected trade SME's brand equity and its consumer characteristics (Eveandboy)

Variable	Min	Max	M	SD	Sk	Ku	CV
SME brand equity	1.91	4.70	3.40	.545	-.024	-.120	.16
Brand awareness $\alpha = .846$	1.60	5.00	3.30	.695	-.057	-.239	.21
Brand...is familiar. (P1_12)	1	5	3.42	.792	-.229	.154	.23
Brand...is well known. (P1_13)	1	5	3.37	.826	-.017	-.299	.25
Brand...is visible. (P1_14)	1	5	3.21	.888	.008	-.375	.28
Brand...is heard a lot. (P1_15)	1	5	3.30	.913	-.107	-.455	.28
Brand...is famous. (P1_16)	1	5	3.25	.988	-.039	-.432	.30
Brand functionality $\alpha = .837$	1.80	5.00	3.44	.657	-.197	.027	.19
The brand's products/ services are safe. (item 16)	2	5	3.49	.761	.319	-.323	.22
The brand offers quality product/service. (item 17)	2	5	3.48	.823	.040	-.507	.24
The brand's products and services are actually useful. (item 20)	1	5	3.34	.898	-.228	-.165	.27
The brand's marketing claims are accurate. (item 21)	1	5	3.52	.849	-.349	-.043	.24
The brand maintains the quality of its product/service. (item 22)	2	5	3.39	.854	.016	-.647	.25
Brand authenticity $\alpha = .788$	1.33	5.00	3.41	.748	-.260	-.276	.22
The brand is famous for its product/service. (item 8)	1	5	3.46	.892	-.164	-.334	.26
The brand is the original of the particular product/service. (item 9)	1	5	3.42	.878	-.354	-.142	.26
The brand gives you an experience you never had before. (item 27)	1	5	3.34	.910	-.073	-.530	.27
Brand attentiveness $\alpha = .748$	1.50	4.75	3.49	.610	-.382	.576	.17
The brand keeps your privacy. (item 32)	1	5	3.32	.856	-.141	-.600	.26
The brand has post-purchase service. (item 33)	1	5	3.82	.813	-.952	1.914	.21
The brand gives you the best offer. (item 34)	1	5	3.47	.746	-.127	.556	.21
The brand has many communication channels. (item 35)	1	5	3.33	.812	-.184	.512	.24
Brand resonance $\alpha = .833$	1.17	4.83	3.40	.643	-.188	.806	.19
I would like to buy brand... (P2_1)	1	5	3.66	.827	-.239	.156	.23
I consider myself to be loyal to brand... (P2_2)	1	5	3.48	.816	-.313	.705	.23
I am willing to recommend brand... to my friends. (P2_3)	1	5	3.30	.883	.050	.092	.27
I am used to brand... (P2_4)	1	5	3.32	.905	-.219	-.267	.27
Brand...would be my first choice. (P2_5)	1	5	3.28	.926	-.079	-.174	.28
I will not buy other brands if brand...is available at the store. (P2_6)	1	5	3.34	.860	-.256	-.167	.26
N = 184							

Table 5.24: --continued

Variable	Min	Max	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>CV</i>
Consumer characteristics							
Product involvement $\alpha = .771$	1.33	5.00	3.59	.717	-.248	.119	.20
I would care a great deal when selecting to buy one from many types and brands of product...available in the market (P1_1)	1	5	3.77	.825	-.558	.553	.22
It is important to me to make a right choice of product... (P1_2)	1	5	3.62	.866	-.264	-.303	.24
I am concerned about the outcome of my choice when making my selection of product... (P1_3)	1	5	3.38	.903	-.064	-.240	.27
<i>N</i> = 173							
Brand engagement $\alpha = .868$	1.13	5.00	3.33	.620	-.281	.429	.19
I have a special bond with brand... (P1_4)	1	5	3.28	.860	-.216	-.281	.26
I consider brand... to be a part of myself.(P1_5)	1	5	3.31	.814	-.135	-.124	.25
I often feel a personal connection between brand...and me.(P1_6)	1	5	3.13	.896	-.214	-.372	.29
Part of me is defined by brand... (P1_7)	1	5	3.15	.986	-.103	-.464	.31
I feel as if I have a close personal connection with brand... (P1_8)	1	5	3.07	.992	-.177	-.505	.32
I can identify with brand... (P1_9)	1	5	3.86	.723	-.491	.883	.19
There are links between brand...and how I view myself. (P1_10)	1	5	3.59	.755	-.472	1.142	.21
Brand...are an important indication of who I am. (P1_11)	1	5	3.28	.819	-.011	.213	.25
<i>N</i> = 169							

Table 5.25: Correlation matrix of selected trade SME's brand equity (Eveandboy)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Brand awareness																								
1.PI_12	-																							
2.PI_13	.472	-																						
3.PI_14	.343	.477	-																					
4.PI_15	.438	.548	.591	-																				
5.PI_16	.494	.536	.583	.717	-																			
Brand functionality																								
6.Item 16	.253	.281	.301	.392	.394	-																		
7.Item 17	.303	.422	.418	.441	.464	.615	-																	
8.Item 20	.335	.389	.508	.435	.464	.439	.584	-																
9.Item 21	.351	.303	.365	.364	.412	.389	.656	.590	-															
10.Item22	.374	.269	.370	.398	.397	.386	.436	.539	.590	-														
Brand authenticity																								
11.Item 8	.336	.308	.314	.413	.451	.338	.337	.443	.498	.474	-													
12.Item 9	.317	.303	.413	.373	.413	.331	.421	.543	.511	.502	.586	-												
13.Item27	.445	.412	.480	.462	.561	.378	.452	.545	.562	.546	.536	.536	-											
Brand attentiveness																								
14.Item32	.406	.396	.445	.457	.493	.351	.417	.468	.545	.487	.485	.502	.595	-										
15.Item33	.083	-.063	.059	-.001	.022	.232	.219	.159	.190	.265	.190	.207	.239	.216	-									
16.Item34	.241	.099	.175	.147	.249	.322	.302	.347	.229	.376	.322	.364	.359	.355	.607	-								
17.Item35	.259	.248	.314	.308	.380	.308	.399	.421	.448	.444	.353	.392	.422	.491	.396	.527	-							

Table 5.25: --continued

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Brand resonance																								
18. P2_1	.367	.295	.319	.373	.365	.301	.270	.259	.288	.317	.323	.296	.372	.285	.137	.150	.200	-	-	-	-	-	-	-
19. P2_2	.243	.220	.404	.260	.208	.185	.305	.392	.331	.397	.314	.399	.409	.309	.197	.273	.227	.526	-	-	-	-	-	-
20. P2_3	.313	.335	.465	.411	.459	.397	.396	.374	.281	.288	.254	.435	.498	.429	.113	.276	.349	.476	.519	-	-	-	-	-
21. P2_4	.349	.319	.395	.421	.419	.328	.376	.445	.385	.308	.360	.402	.472	.419	.144	.218	.385	.457	.503	.675	-	-	-	-
22. P2_5	.340	.330	.395	.367	.450	.308	.420	.510	.456	.410	.340	.446	.497	.397	.088	.270	.393	.358	.545	.560	.561	-	-	-
23. P2_6	.310	.298	.336	.377	.310	.207	.308	.392	.385	.429	.384	.400	.401	.414	.198	.294	.337	.232	.323	.210	.338	.532	-	-

All correlations are significant ($p < .05$).



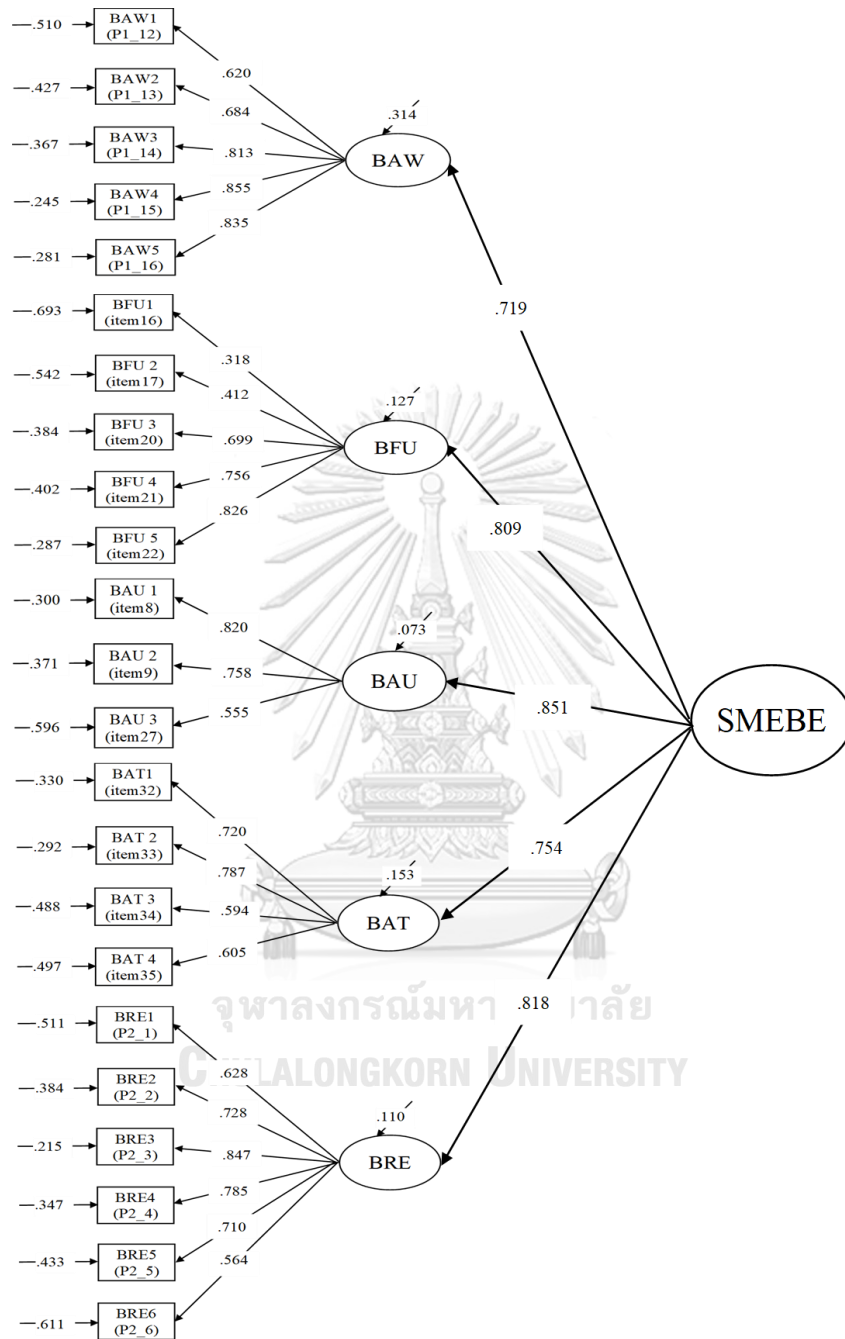
Table 5.26: SME brand equity model of selected manufacturing SME brand (Tofusan)

Variable	$\hat{\beta}$	<i>E</i>	<i>S.E.</i>	<i>t</i>	<i>R</i> ²
<i>Second-order confirmatory factor analysis</i>					
Components of SME brand equity (SMEBE)					
Brand awareness (BAW)	.719	.579	.066	8.833	.517
Brand functionality (BFU)	.809	.490	.059	8.297	.654
Brand authenticity (BAU)	.851	.438	.064	6.879	.724
Brand attentiveness (BAT)	.754	.449	.057	7.824	.569
Brand resonance (BRE)	.818	.472	.061	7.710	.669
<i>First-order confirmatory factor analysis</i>					
Brand awareness (BAW)					
BAW 1 (P1_12)	.620	.700	.078	8.925	.384
BAW 2 (P1_13)	.684	.760	.077	9.850	.468
BAW 3 (P1_14)	.813	1.051	.082	12.775	.661
BAW 4 (P1_15)	.855	1.013	.075	13.515	.731
BAW 5 (P1_16)	.835	1.000			.697
Brand functionality (BFU)					
BFU 1 (item 16)	.318	.461	.116	3.957	.101
BFU 2 (item 17)	.412	.550	.103	5.339	.170
BFU 3 (item 20)	.699	1.000			.489
BFU 4 (item 21)	.756	1.210	.135	8.928	.572
BFU 5 (item 22)	.826	1.296	.137	9.461	.682
Brand authenticity (BAU)					
BAU 1 (item 8)	.820	1.523	.210	7.265	.672
BAU 2 (item 9)	.758	1.377	.195	7.058	.575
BAU 3 (item 27)	.555	1.000			.308
Brand attentiveness (BAT)					
BAT 1 (item 32)	.720	1.000			.518
BAT 2 (item 33)	.787	1.160	.132	8.757	.619
BAT 3 (item 34)	.594	.867	.123	7.036	.353
BAT 4 (item 35)	.605	.899	.127	7.104	.366
Brand resonance (BRE)					
BRE 1 (P2_1)	.628	1.000			.394
BRE 2 (P2_2)	.728	1.141	.101	11.249	.530
BRE 3 (P2_3)	.847	1.282	.146	8.777	.717
BRE 4 (P2_4)	.785	1.293	.152	8.507	.616
BRE 5 (P2_5)	.710	1.150	.146	7.873	.504
BRE 6 (P2_6)	.564	.926	.144	6.418	.318

χ^2 (204, *N*=184) = 210.241, *p* = .367; CFI = .997, TLI = .996, RMSEA = .013

All factor loadings are significant (*p* < .05).

Figure 5.5: SME brand equity model of selected manufacturing SME's brand equity (Tofusan)



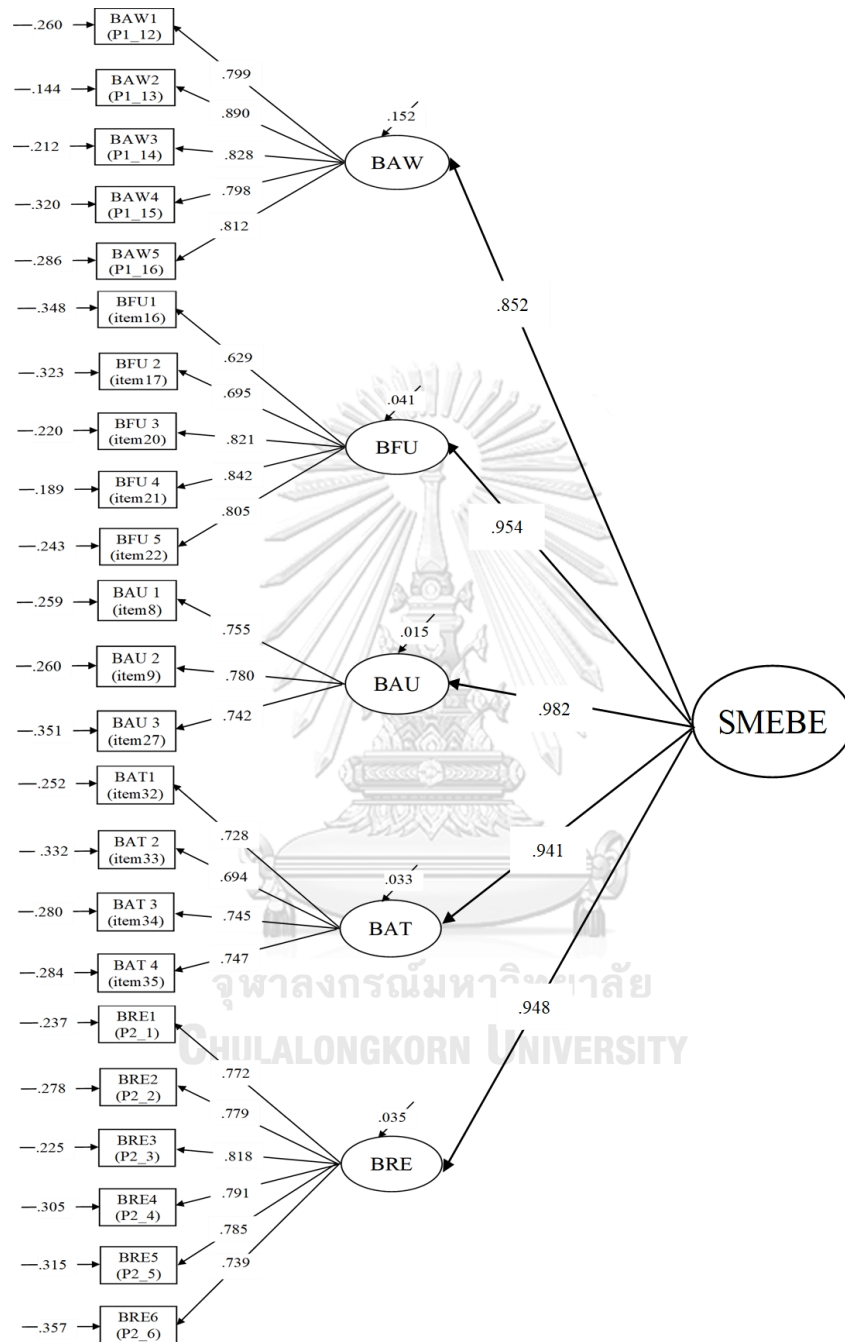
$\chi^2 (204, N=184) = 210.241, p = .367; CFI = .997, TLI = .996, RMSEA = .013$

Note: All estimates are significant ($p < .05$).

Table 5.27: SME brand equity model of selected service SME brand (Santa fe')

Variable	$\hat{\beta}$	<i>E</i>	<i>S.E.</i>	<i>t</i>	<i>R</i> ²
<i>Second-order confirmatory factor analysis</i>					
Components of SME brand equity (SMEBE)					
Brand awareness (BAW)	.852	.633	.058	10.934	.726
Brand functionality (BFU)	.941	.642	.051	12.568	.885
Brand authenticity (BAU)	.982	.643	.057	11.270	.964
Brand attentiveness (BAT)	.941	.501	.048	10.433	.885
Brand resonance (BRE)	.948	.561	.049	11.513	.899
<i>First-order confirmatory factor analysis</i>					
Brand awareness (BAW)					
BAW 1 (P1_12)	.799	.911	.073	12.425	.638
BAW 2 (P1_13)	.890	.998	.069	14.433	.792
BAW 3 (P1_14)	.828	.914	.070	13.095	.686
BAW 4 (P1_15)	.798	1.009	.071	14.232	.637
BAW 5 (P1_16)	.812	1.000			.659
Brand functionality (BFU)					
BFU 1 (item 16)	.629	.709	.077	9.189	.396
BFU 2 (item 17)	.695	.814	.079	10.367	.483
BFU 3 (item 20)	.821	1.000			.674
BFU 4 (item 21)	.842	1.008	.074	13.584	.709
BFU 5 (item 22)	.805	.992	.078	12.710	.648
Brand authenticity (BAU)					
BAU 1 (item 8)	.755	.895	.087	10.331	.570
BAU 2 (item 9)	.780	.969	.091	10.700	.608
BAU 3 (item 27)	.742	1.000			.551
Brand attentiveness (BAT)					
BAT 1 (item 32)	.728	1.000			.530
BAT 2 (item 33)	.694	1.042	.115	9.069	.482
BAT 3 (item 34)	.745	1.108	.115	9.608	.555
BAT 4 (item 35)	.747	1.125	.116	9.674	.558
Brand resonance (BRE)					
BRE 1 (P2_1)	.772	1.000			.596
BRE 2 (P2_2)	.779	1.106	.098	11.250	.607
BRE 3 (P2_3)	.818	1.141	.096	11.870	.669
BRE 4 (P2_4)	.791	1.206	.106	11.364	.626
BRE 5 (P2_5)	.785	1.202	.106	11.298	.616
BRE 6 (P2_6)	.739	1.110	.096	11.542	.546
χ^2 (194, <i>N</i> =184) = 219.594, <i>p</i> = .100; CFI = .992, TLI = .990, RMSEA = .027					
All factor loadings are significant (<i>p</i> < .05).					

Figure 5.6: SME brand equity model of selected service SME's brand equity (Santa fe')



$\chi^2 (194, N=184) = 219.594, p = .100; CFI = .992, TLI = .990, RMSEA = .027$

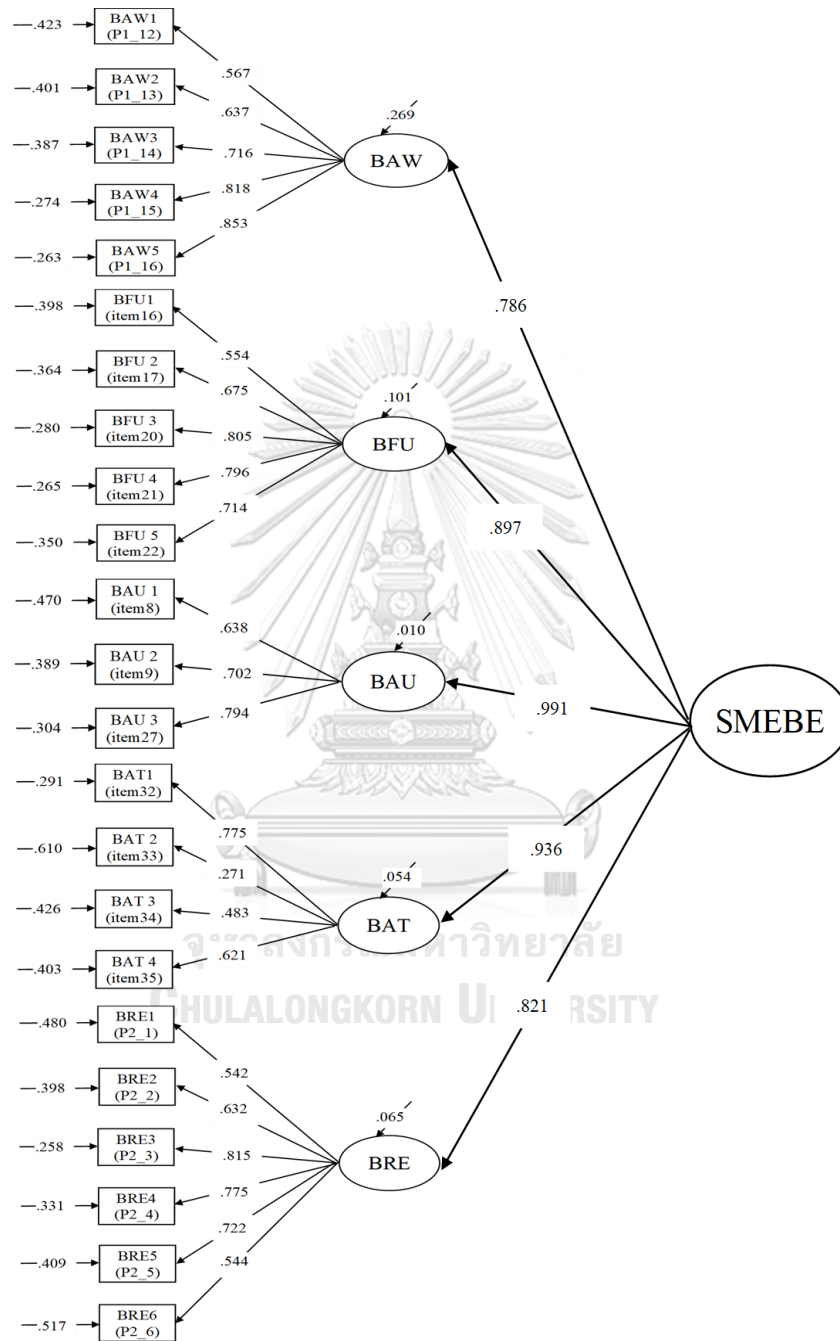
Note: All estimates are significant ($p < .05$).

Table 5.28: SME brand equity model of selected trade SME brand (Eveandboy)

Variable	$\hat{\beta}$	E	S.E.	t	R ²
<i>Second-order confirmatory factor analysis</i>					
Components of SME brand equity (SMEBE)					
Brand awareness (BAW)	.786	.660	.064	10.298	.618
Brand functionality (BFU)	.897	.645	.058	11.121	.805
Brand authenticity (BAU)	.991	.714	.058	12.308	.982
Brand attentiveness (BAT)	.936	.619	.056	11.010	.876
Brand resonance (BRE)	.821	.367	.053	6.882	.674
<i>First-order confirmatory factor analysis</i>					
Brand awareness (BAW)					
BAW 1 (P1_12)	.567	.533	.067	7.940	.321
BAW 2 (P1_13)	.637	.623	.068	9.213	.406
BAW 3 (P1_14)	.716	.760	.069	10.975	.513
BAW 4 (P1_15)	.818	.887	.069	12.860	.669
BAW 5 (P1_16)	.853	1.000			.728
Brand functionality (BFU)					
BFU 1 (item 16)	.554	.584	.076	7.636	.307
BFU 2 (item 17)	.675	.769	.082	9.432	.456
BFU 3 (item 20)	.805	1.000			.648
BFU 4 (item 21)	.796	.941	.081	11.584	.634
BFU 5 (item 22)	.714	.839	.081	10.295	.510
Brand authenticity (BAU)					
BAU 1 (item 8)	.638	.788	.089	8.873	.407
BAU 2 (item 9)	.702	.852	.086	9.956	.493
BAU 3 (item 27)	.794	1.000			.630
Brand attentiveness (BAT)					
BAT 1 (item 32)	.775	1.000			.601
BAT 2 (item 33)	.271	.333	.098	3.389	.073
BAT 3 (item 34)	.483	.544	.089	6.120	.233
BAT 4 (item 35)	.621	.761	.095	8.031	.386
Brand resonance (BRE)					
BRE 1 (P2_1)	.542	1.000			.294
BRE 2 (P2_2)	.632	1.149	.147	7.828	.399
BRE 3 (P2_3)	.815	1.597	.216	7.384	.664
BRE 4 (P2_4)	.775	1.575	.215	7.311	.601
BRE 5 (P2_5)	.722	1.490	.213	6.998	.521
BRE 6 (P2_6)	.544	1.044	.184	5.667	.296

$\chi^2 (202, N=184) = 203.404, p = .459; CFI = .999, TLI = .999, RMSEA = .006$
All factor loadings are significant ($p < .05$).

Figure 5.7: SME brand equity model of selected trade SME’s brand equity (Eveandboy)



$\chi^2 (202, N=184) = 203.404, p = .459; CFI = .999, TLI = .999, RMSEA = .037$
 Note: All estimates are significant ($p < .05$).

According to the convention of invariance testing, configural invariance is the first and fundamental step of the invariance testing. If the configural invariance is supported, the next step is to test for the equivalence of the item loadings on the factors, or the metric invariance (Putnick & Bornstein, 2016). Therefore, the multi-group analysis was performed to test whether item loadings on the factors of SME brand equity are equal across different business settings.

The results of metric invariance testing indicated that item loadings on first-order and second-order factors measuring SME brand equity were partially equal across the three business sectors (see Table 5.29). According to Table 5.29, total 30 models were logically and sequentially computed to examine the invariance across business types of SME brand equity measurement model. Hypothesized model (Model 1) or the model with no constrained value was run and set to be the baseline model for the Chi-square comparison ($\Delta\chi^2$ and Δdf) with the model that was constrained equal in the part of factor loadings, variances, and covariances (No. 2) and with the model that only its factor loadings were constrained equal (No.9). The results showed the significantly different Chi-square of the baseline model and the constrained models which mean that the overall of SME brand equity model was non-invariance across three business.

Since there were more than two business groups, paired comparisons were required to find the non-invariance part of the model. The baseline model (Model 1) was set into three pairs. Model 1(a) was the baseline model for the pair of manufacture and service. Model 1(b) represented the baseline value of manufacture and trade. Lastly, model 1 (c) were set for the baseline of service and trade. Three pair comparisons between the baseline model and the model with factor loadings

constrained equal model (No 10, No 11, No 12) still showed the significant Chi-square comparison ($\Delta\chi^2$ and Δdf). The difference value between the baseline models and the constrained models above means that the overall model of SME brand equity was non-invariance across three business groups.

Logically, the further analysis was conducted to check the invariance in the level of dimensions and items of SME brand equity. The overall results showed partly invariance of SME brand equity model across three business types. These findings mean some items are the fundamental criteria customers adopted to assess the SME brand equity within every business context, but some items should be interpreted differently in each sector of SMEs.

In particular, three of five components of SME brand equity achieved the metric invariance across three business sectors. Brand functionality, brand authenticity, and brand resonance were the components that had the non-significant (*NS*) difference of chi-square ($\Delta\chi^2$) when comparing the chi-square value of their constrained models (Model 3, Model 4, and Model 6) to the hypothesized one's (Model 1) (see Table 5.29). These statistical values mean that the three components contributed to the construct of SME brand equity to a similar degree across the three business sectors. To put it simply, brand functionality, brand authenticity, and brand resonance were the common standards adopted by consumers for evaluating brand equity of every SMEs, no matter what business sector it belongs to.

In the aspect of brand awareness, brand attentiveness, the hypotheses of metric invariance across three business sectors were violated ($p < 0.05$ for $\Delta\chi^2$ of Model 2 and Model 5) (see Table 5.29).

Table 5.29: Summary of SMEBE model invariance testing for SME brands in different sectors

Model Description	Groups	Comparative model	χ^2	df	$\Delta\chi^2$	Δdf	Statistical significance
1. Hypothesized model (Model 1)	Manufacture, service, trade	-	1225.391	666	-	-	-
2. Factor loadings, variances, and covariances constrained equal	Manufacture, service, trade	Model 1	1350.327	714	124.936	48	$p < .05$
3. Model 1(a)	Manufacture, service	-	810.422	444	-	-	-
4. Factor loadings, variances, and covariances constrained equal	Manufacture, service	Model 1(a)	864.818	468	54.396	24	$p < .05$
5. Model 1(b)	Manufacture, trade	-	800.979	444	-	-	-
6. Factor loadings, variances, and covariances constrained equal	Manufacture, trade	Model 1(b)	879.866	468	78.887	24	$p < .05$
7. Model 1(c)	Service, trade	-	839.382	444	-	-	-
8. Factor loadings, variances, and covariances constrained equal	Service, trade	Model 1(c)	896.506	468	57.124	24	$p < .05$

Table 5.29: --continued

Model Description	Groups	Comparative model	χ^2	<i>df</i>	$\Delta\chi^2$	Δdf	Statistical significance
9. Factor loadings constrained equal	Manufacture, service, trade	Model 1	1327.116	708	101.725	42	$p < .05$
10. Factor loadings constrained equal	Manufacture, service	Model 1(a)	852.298	465	41.876	21	$p < .05$
11. Factor loadings constrained equal	Manufacture, trade	Model 1(b)	862.633	465	61.654	21	$p < .05$
12. Factor loadings constrained equal	Service, trade	Model 1(c)	893.906	465	54.524	21	$p < .05$
13. Factor loadings on brand awareness constrained equal (Model 2)	Manufacture, service, trade	Model 1	1252.152	676	26.761	10	$p < .05$
14. Model 2(a)	Manufacture, service	Model 1(a)	821.948	449	11.526	5	NS
16. Model 2(c)	Service, trade	Model 1(c)	856.336	449	16.954	5	$p < .05$
17. Factor loadings on brand functionality constrained equal (Model 3)	Manufacture, service, trade	Model 1	1243.926	676	18.535	10	NS

Table 5.29: --continued

Model Description	Groups	Comparative model	χ^2	df	$\Delta\chi^2$	Δdf	Statistical significance
18. Factor loadings on brand authenticity constrained equal (Model 4)	Manufacture, service, trade	Model 1	1239.081	672	13.69	6	NS
19. Factor loadings on brand attentiveness constrained equal (Model 5)	Manufacture, service, trade	Model 1	1251.707	674	26.316	8	$p < .05$
20. Model 5 (a)	Manufacture, service	Model 1 (a)	815.319	448	4.897	4	NS
21. Model 5 (b)	Manufacture, trade	Model 1 (b)	820.717	448	19.738	4	$p < .05$
22. Factor loadings on brand resonance constrained equal (Model 6)	Manufacture, service, trade	Model 1	1240.529	676	15.138	10	NS
23. Factor loadings of item P1_12 on brand awareness constrained equal (Model 7)	Service, trade	Model 1 (c)	849.958	445	10.576	1	$p < .05$
24. Factor loadings of item P1_13 on brand awareness constrained equal (Model 8)	Service, trade	Model 1 (c)	849.124	445	9.742	1	$p < .05$

Table 5.29: --continued

Model Description	Groups	Comparative model	χ^2	df	$\Delta\chi^2$	Δdf	Statistical significance
25. Factor loadings of item P1_14 on brand awareness constrained equal (Model 9)	Service, trade	Model 1(c)	842.158	445	2.776	1	NS
26. Factor loadings of item P1_15 on brand awareness constrained equal (Model 10)	Service, trade	Model 1(c)	841.298	445	1.916	1	NS
27. Factor loadings of item P1_16 on brand awareness constrained equal (Model 11)	Service, trade	Model 1(c)	841.298	445	1.916	1	NS
28. Factor loadings of item 32 on brand attentiveness constrained equal (Model 20)	Manufacture, trade	Model 1(b)	805.338	445	4.359	1	NS

Table 5.29: --continued

Model Description	Groups	Comparative model	χ^2	df	$\Delta\chi^2$	Δdf	Statistical significance
29. Factor loadings of item 33 on brand attentiveness constrained equal (Model 21)	Manufacture, trade	Model 1(b)	804.917	445	3.938	1	NS
30. Factor loadings of item 34 on brand attentiveness constrained equal (Model 22)	Manufacture, trade	Model 1(b)	804.917	445	3.938	1	NS
31. Factor loadings of item 35 on brand attentiveness constrained equal (Model 23)	Manufacture, trade	Model 1(b)	812.998	445	12.019	1	$p < .05$

The statistical significance of the difference of chi-square indicated that these two components contributed unequally to the construct of SME brand equity across three business sectors.

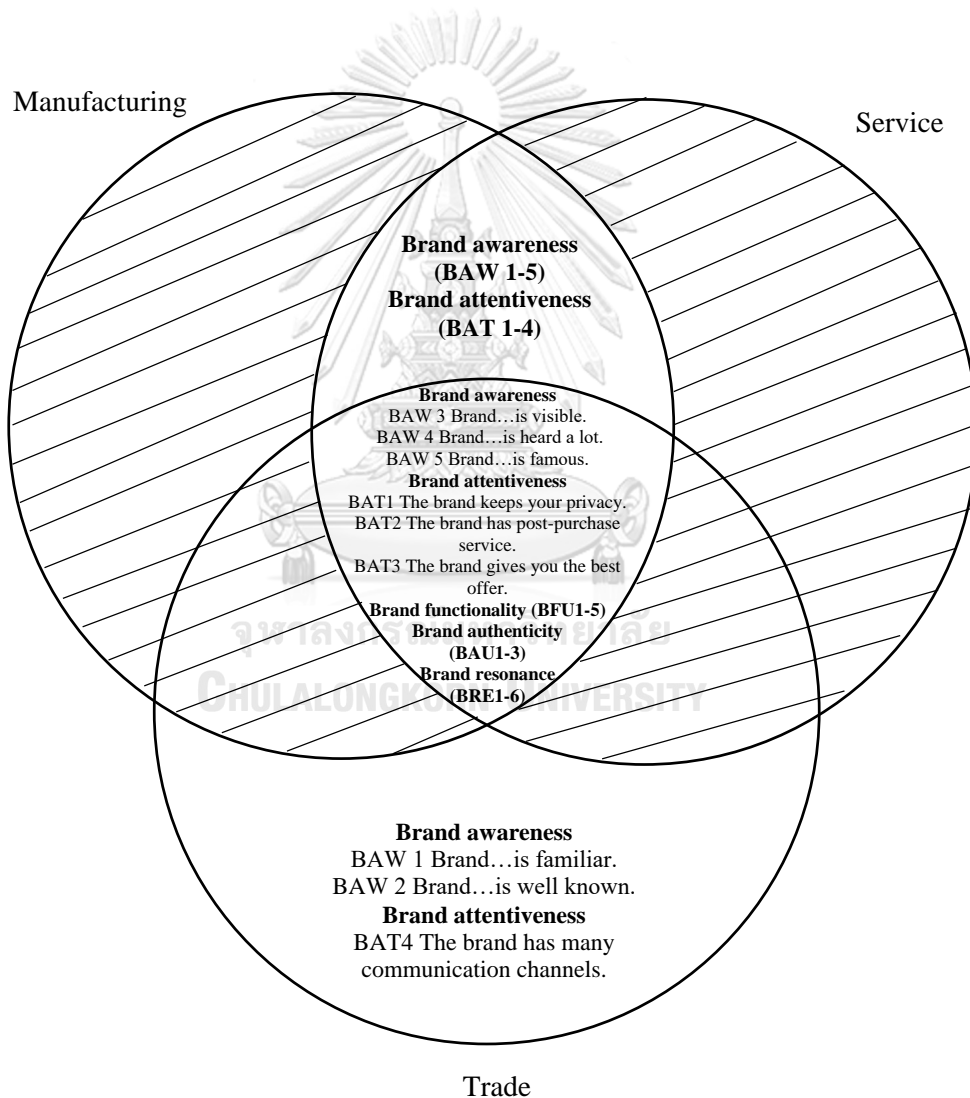
Due to the metric non-invariance across groups, paired comparison analyses were conducted. The findings revealed that the brand awareness and brand attentiveness contributed to SME brand equity to the same degree across the manufacturing and the service industry (Model 2[a] and Model 5[a]). This partial similarity implied that some items loading on brand awareness and brand attentiveness would be non-equivalent in the setting of trade SMEs.

Further item invariance analyses revealed that two of five items measuring brand awareness (P1_12 Brand...is familiar. and P1_13 Brand...is well known.) and one of the brand attentiveness items (Item 35 The brand has many communication channels.) were non-invariant within the context of the trade business. However, some items of brand awareness (P1_14 Brand...is visible., P1_15 Brand...is heard a lot., and P1_16 Brand...is famous.) and brand attentiveness (Item 32 The brand keeps your privacy., Item 33 The brand has a post-purchase service., and Item 34 The brand gives you the best offer.) achieved the metric invariance across three business sectors. Figure 5.8 summarized the SME brand equity model's invariance and non-invariance across different business types.

Series of the metric invariance testing for brand awareness and brand attentiveness reported above indicated that consumers assessed these two components of SME brand equity similarly in the setting of the manufacturing and service business but they interpreted some items of brand awareness and brand attentiveness differently when evaluating SME brand equity for the trade industry. Last but not

least, two items about brand exposure and one item about brand fame belonging to brand awareness as well as the items related to consumer privacy, post-purchase service, and customer privileges measuring brand attentiveness have the same degree of importance for creating SME brand equity across all three business settings.

Figure 5.8: Venn diagram depicting invariance and non-invariance parts of SMEBE models in case of SME brands in different sectors



Test of SME brand equity model's measurement invariance among consumers with different characteristics

Among individuals with different characteristics, the measurement invariance was performed in an overall manner. The data of 184 customers of three SME brands were put together to be 552 cases in total. Due to some missing data, samples using for testing the measurement invariance among consumers with different levels of product involvement and brand engagement were 520 and 510 cases, respectively.

For examining the invariance of SME brand equity model within *the group of consumers differing in their SME brand equity*, mean was used as a cut-off value to split all consumers into two groups which are the respondents who score high and those who score low on SME brand equity ($M = 3.25$). The descriptive statistics and the correlation matrix of the SME brand equity models were provided here for the replication of the future research (see Table 5.30 to Table 5.33). The findings showed that the SME brand equity model fitted well with the empirical data or the opinion of the customer groups varying in the degree of SME brand equity (High: χ^2 (197, $N=303$) = 213.287, $p = .203$; CFI = .992, RMSEA = .017 [see Table 5.34], Low: χ^2 (193, $N=249$) = 221.865, $p = .076$; CFI = .986, RMSEA = .025 [see Table 5.35]). Moreover, the SME brand equity measurement models of consumers with different level of SME brand equity were identical (SME brand equity: for High, see Figure 5.9; for Low, see Figure 5.10). Therefore, the configural invariance, the fundamental step of the invariance testing, was achieved.

Further analysis for testing the metric invariance was conducted to test whether each item and each component similarly contributed to SME brand equity in consumers varying in their SME brand equity level. The finding showed that the SME

brand equity measurement model was invariant among consumers with high and low SME brand equity (see Table 5.36). SME brand equity measurement model's metric invariance among consumers varying in the level of SME brand equity means that five SME brand equity components, including brand awareness, brand functionality, brand authenticity, brand attentiveness, and brand resonance, equally contributed to the construct of SME brand equity despite the difference in SME brand equity of consumers. The metric invariance of SME brand equity measurement model can also imply that consumers varying in the degree of SME brand equity interpreted the scale of SME brand equity in the same way. Therefore, this study's SME brand equity measurement model applies to consumers with different level of SME brand equity.

For *consumers differing in their product involvement levels*, the invariance of SME brand equity model was checked by using mean value as a cut-off value to split all consumers into two groups which are the respondents who score high and those who score low on product involvement ($M = 3.54$). The descriptive statistics and the correlation matrix of SME brand equity models were provided here for the replication of the future research (see Table 5.37 to Table 5.40). The findings showed that the SME brand equity model fitted well with the empirical data or the opinion of the customer groups varying in the degree of product involvement (High: χ^2 (194, $N=298$) = 216.174, $p = .132$; CFI = .993, RMSEA = .020 [see Table 5.41], Low: χ^2 (188, $N=222$) = 211.952, $p = .111$; CFI = .989, RMSEA = .024 [see Table 5.42]). Moreover, the SME brand equity measurement models of consumers with different level of product involvement were identical (Product involvement: for High, see Figure 5.11; for Low, see Figure 5.12). Therefore, the configural invariance, the fundamental step of the invariance testing, was achieved.

Further analysis for testing the metric invariance was conducted to test whether each item and each component similarly contributed to SME brand equity in consumers differing in their product involvement level. The finding showed that the SME brand equity measurement model was invariant among consumers with high and low product involvement (see Table 5.43). SME brand equity measurement model's metric invariance among consumers varying in the level of product involvement means that five SME brand equity components, including brand awareness, brand functionality, brand authenticity, brand attentiveness, and brand resonance, equally contributed to the construct of SME brand equity despite the difference in product involvement of consumers. The metric invariance of SME brand equity measurement model can also imply that consumers varying in the degree of product involvement similarly interpreted the scale of SME brand equity. As such, this study's SME brand equity measurement model applies to consumers with different level of product involvement.

For consumers varying in their brand engagement levels, the invariance of SME brand equity model was checked by using mean value as a cut-off value to split all consumers into two groups which are the respondents who score high and those who score low on brand engagement ($M = 3.31$). The descriptive statistics and the correlation matrix of SME brand equity models were provided here for the replication of the future research (see Table 5.44 to Table 5.47). The findings showed that the SME brand equity model fitted well with the empirical data or the opinion of the customer groups varying in the degree of brand engagement (High: $\chi^2 (200, N=295) = 225.211, p = .107$; CFI = .990, RMSEA = .021 [see Table 5.48], Low: $\chi^2 (193, N=215) = 216.419, p = .119$; CFI = .989, RMSEA = .024 [see Table 5.49]). Moreover,

the SME brand equity measurement models of consumers with different level of brand engagement were identical (Brand engagement: for High, see Figure 5.13; for Low, see Figure 5.14). Therefore, the configural invariance, the fundamental step of the invariance testing, was achieved.

Further analysis for testing the metric invariance was conducted to test whether each item and each component similarly contributed to SME brand equity in consumers differing in their brand engagement level. The finding showed that the SME brand equity measurement model was invariant among consumers with high and low brand engagement (see Table 5.50). SME brand equity measurement model's metric invariance among consumers varying in the level of brand engagement means that five SME brand equity components, including brand awareness, brand functionality, brand authenticity, brand attentiveness, and brand resonance, equally contributed to the construct of SME brand equity despite the difference in brand engagement of consumers. The metric invariance of SME brand equity measurement model can also imply that consumers varying in the degree of brand engagement similarly interpreted the scale of SME brand equity. Hence, this study's SME brand equity measurement model applies to consumers with different level of brand engagement.

Table 5.30: Descriptive statistics of SME brand equity in case of consumers with high brand equity level

Variable	Min	Max	M	SD	Sk	Ku	CV
SME brand equity							
Brand awareness $\alpha = .851$	1.60	5.00	3.66	.623	-.179	1.000	.17
Brand...is familiar. (P1_12)	1	5	3.68	.750	-.062	-.094	.20
Brand...is well known. (P1_13)	2	5	3.70	.745	-.127	-.281	.20
Brand...is visible. (P1_14)	1	5	3.67	.770	-.233	.213	.21
Brand...is heard a lot. (P1_15)	1	5	3.64	.818	-.520	.508	.22
Brand...is famous. (P1_16)	1	5	3.59	.848	-.320	.138	.24
Brand functionality $\alpha = .676$	2.40	5.00	3.85	.441	.653	.463	.11
The brand's products/ services are safe. (item 16)	3	5	3.94	.656	.058	-.668	.17
The brand offers quality product/service. (item 17)	2	5	3.87	.643	.051	-.435	.17
The brand's products and services are actually useful. (item 20)	2	5	3.79	.672	.081	-.466	.18
The brand's marketing claims are accurate. (item 21)	1	5	3.83	.690	-.624	1.856	.18
The brand maintains the quality of its product/service. (item 22)	2	5	3.81	.680	.071	-.496	.18
Brand authenticity $\alpha = .556$	2.00	5.00	3.77	.515	.176	.526	.14
The brand is famous for its product/service. (item 8)	1	5	3.79	.728	-.333	.620	.19
The brand is the original of the particular product/service. (item 9)	1	5	3.76	.697	-.169	.238	.19
The brand gives you an experience you never had before. (item 27)	1	5	3.75	.696	-.214	.311	.19
Brand attentiveness $\alpha = .612$	1.75	5.00	3.73	.463	.243	1.358	.12
The brand keeps your privacy. (item 32)	2	5	3.74	.658	-.079	-.141	.18
The brand has post-purchase service. (item 33)	1	5	3.82	.710	-.566	1.498	.19
The brand gives you the best offer. (item 34)	1	5	3.70	.671	-.084	.647	.18
The brand has many communication channels. (item 35)	2	5	3.68	.686	.086	-.350	.19
Brand resonance $\alpha = .818$	1.00	5.00	3.68	.563	-.344	2.903	.15
I would like to buy brand... (P2_1)	1	5	3.83	.723	-.571	1.088	.19
I consider myself to be loyal to brand... (P2_2)	1	5	3.70	.757	-.320	.627	.20
I am willing to recommend brand... to my friends. (P2_3)	1	5	3.59	.775	-.252	.834	.22
I am used to brand... (P2_4)	1	5	3.65	.815	-.504	.726	.22
Brand...would be my first choice. (P2_5)	1	5	3.65	.828	-.282	.107	.23
I will not buy other brands if brand...is available at the store. (P2_6)	1	5	3.65	.769	-.416	.594	.21
N = 303							

Table 5.31: Correlation matrix of SME brand equity in case of consumers with high brand equity level

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Brand awareness																								
1.P_L12	-																							
2.P_L13	.532	-																						
3.P_L14	.413	.519	-																					
4.P_L15	.436	.559	.545	-																				
5.P_L16	.491	.575	.563	.678	-																			
Brand functionality																								
6.Item 16	.199	.141	.166	.085	.131	-																		
7.Item 17	.194	.187	.193	.154	.186	.524	-																	
8.Item 20	.227	.217	.268	.167	.278	.258	.334	-																
9.Item 21	.211	.212	.140	.246	.303	.140	.182	.389	-															
10.Item22	.261	.198	.212	.248	.332	.198	.252	.323	.355	-														
Brand authenticity																								
11.Item 8	.223	.275	.214	.284	.318	.128	.083	.228	.222	.279	-													
12.Item 9	.272	.270	.260	.191	.283	.123	.107	.225	.138	.272	.392	-												
13.Item27	.317	.214	.286	.202	.310	.085	.127	.305	.239	.255	.205	.288	-											
Brand attentiveness																								
14.Item32	.143	.121	.122	.160	.144	.127	.113	.203	.217	.188	.175	.202	.240	-										
15.Item33	.060	-.070	.001	-.032	.043	.121	.130	.032	.115	.113	.069	.242	.232	.253	-									
16.Item34	.122	.108	.068	.076	.159	.119	.106	.048	.113	.226	.094	.199	.228	.238	.331	-								
17.Item35	.171	.243	.211	.227	.278	.085	.143	.138	.160	.234	.104	.240	.199	.287	.194	.397	-							

Table 5.31: --continued

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Brand resonance																								
18.P2_1	.324	.283	.342	.279	.310	.147	.107	.237	.095	.187	.296	.298	.210	.146	.145	.150	.166	-	-	-	-	-	-	-
19.P2_2	.281	.176	.274	.157	.176	.086	.035	.189	.039	.177	.242	.361	.293	.194	.197	.252	.209	.540	-	-	-	-	-	-
20.P2_3	.347	.341	.415	.379	.412	.156	.083	.233	.207	.237	.170	.351	.332	.208	.131	.223	.271	.391	.450	-	-	-	-	-
21.P2_4	.322	.313	.318	.397	.350	.112	.121	.253	.210	.171	.252	.268	.292	.150	.105	.188	.184	.363	.466	.622	-	-	-	-
22.P2_5	.388	.321	.362	.348	.425	.140	.130	.294	.245	.260	.191	.353	.273	.144	.045	.164	.148	.345	.481	.551	.529	-	-	-
23.P2_6	.295	.280	.321	.242	.254	.184	.189	.223	.110	.251	.261	.253	.198	.237	.190	.129	.138	.325	.317	.232	.289	.488	-	-

All correlations are significant ($p < .05$).

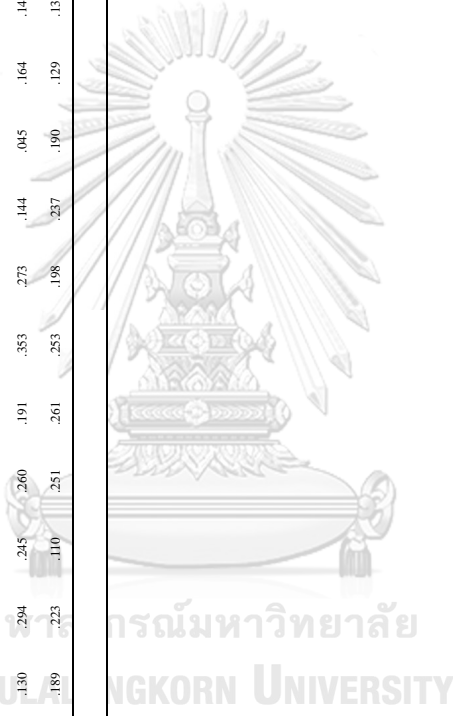


Table 5.32: Descriptive statistics of SME brand equity in case of consumers with low brand equity level

Variable	Min	Max	M	SD	Sk	Ku	CV
SME brand equity							
Brand awareness $\alpha = .852$	1.00	5.00	2.85	.703	.434	1.112	.25
Brand...is familiar. (P1_12)	1	5	2.95	.824	.141	.750	.28
Brand...is well known. (P1_13)	1	5	3.00	.868	.082	.242	.29
Brand...is visible. (P1_14)	1	5	2.87	.935	.297	-.039	.33
Brand...is heard a lot. (P1_15)	1	5	2.76	.892	.459	.347	.32
Brand...is famous. (P1_16)	1	5	2.69	.914	.397	.006	.34
Brand functionality $\alpha = .679$	1.00	4.40	2.91	.514	-.485	.862	.18
The brand's products/ services are safe. (item 16)	1	5	3.37	.885	.072	-.080	.26
The brand offers quality product/service. (item 17)	1	5	3.11	.805	.073	.062	.26
The brand's products and services are actually useful. (item 20)	1	5	2.72	.708	.050	-.005	.26
The brand's marketing claims are accurate. (item 21)	1	5	2.68	.729	.006	.342	.27
The brand maintains the quality of its product/service. (item 22)	1	5	2.70	.747	.028	-.131	.28
Brand authenticity $\alpha = .610$	1.00	4.00	2.71	.579	-.212	.224	.21
The brand is famous for its product/service. (item 8)	1	5	2.72	.735	.119	.460	.27
The brand is the original of the particular product/service. (item 9)	1	5	2.71	.770	.015	.041	.28
The brand gives you an experience you never had before. (item 27)	1	5	2.69	.811	.211	.106	.30
Brand attentiveness $\alpha = .673$	1.00	4.25	2.87	.542	-.463	.509	.19
The brand keeps your privacy. (item 32)	1	5	2.82	.692	-.111	.216	.25
The brand has post-purchase service. (item 33)	1	5	3.01	.845	-.063	-.138	.28
The brand gives you the best offer. (item 34)	1	4	2.88	.763	-.287	-.255	.26
The brand has many communication channels. (item 35)	1	5	2.77	.742	-.074	-.065	.27
Brand resonance $\alpha = .812$	1.00	4.67	2.88	.588	-.359	.871	.20
I would like to buy brand... (P2_1)	1	5	3.16	.837	-.019	.393	.26
I consider myself to be loyal to brand... (P2_2)	1	5	2.90	.781	-.481	.566	.27
I am willing to recommend brand... to my friends. (P2_3)	1	5	2.83	.785	.156	.247	.28
I am used to brand... (P2_4)	1	5	2.80	.841	.140	-.327	.30
Brand...would be my first choice. (P2_5)	1	5	2.71	.806	-.032	-.116	.30
I will not buy other brands if brand...is available at the store. (P2_6)	1	5	2.88	.864	.017	.025	.30
N = 249							

Table 5.33: Correlation matrix of SME brand equity in case of consumers with low brand equity level

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Brand awareness																								
1.P_L12	-																							
2.P_L13	.524	-																						
3.P_L14	.389	.606	-																					
4.P_L15	.427	.514	.687	-																				
5.P_L16	.412	.532	.565	.674	-																			
Brand functionality																								
6.Item 16	.171	.149	.206	.191	.113	-																		
7.Item 17	.185	.168	.207	.178	.162	.727	-																	
8.Item 20	.085	.221	.248	.237	.233	.226	.346	-																
9.Item 21	.221	.157	.192	.198	.270	.059	.130	.412	-															
10.Item22	.191	.253	.289	.296	.294	.092	.124	.342	.542	-														
Brand authenticity																								
11.Item 8	.296	.295	.211	.279	.286	.141	.094	.144	.279	.237	-													
12.Item 9	.186	.191	.176	.209	.245	.189	.196	.198	.274	.205	.506	-												
13.Item27	.229	.313	.196	.186	.251	.156	.226	.129	.127	.238	.268	.269	-											
Brand attentiveness																								
14.Item32	.266	.334	.187	.197	.255	.183	.188	.126	.150	.198	.274	.212	.209	-										
15.Item33	.192	.105	.074	.095	.073	.042	.039	.100	.157	.236	.226	.098	.123	.224	-									
16.Item34	.176	.109	.011	.064	.097	.109	.062	.131	.134	.170	.192	.112	.265	.172	.503	-								
17.Item35	.264	.155	.118	.122	.107	.207	.192	.074	.146	.244	.177	.072	.188	.247	.371	.492	-							

Table 5.33: --continued

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Brand resonance																								
18.P2_1	.229	.251	.203	.263	.255	.256	.201	.083	.249	.304	.237	.248	.192	.224	.203	.100	.138	-	-	-	-	-	-	-
19.P2_2	.205	.178	.196	.230	.158	.162	.282	.304	.310	.278	.160	.224	.216	.204	.277	.168	.104	.563	-	-	-	-	-	-
20.P2_3	.304	.342	.277	.310	.315	.219	.241	.306	.202	.277	.226	.219	.272	.263	.149	.228	.147	.508	.530	-	-	-	-	-
21.P2_4	.451	.369	.316	.372	.377	.126	.200	.320	.319	.284	.244	.285	.306	.271	.196	.233	.236	.343	.423	.627	-	-	-	-
22.P2_5	.238	.355	.238	.289	.305	.067	.168	.394	.255	.243	.205	.196	.214	.217	.153	.271	.197	.213	.368	.477	.647	-	-	-
23.P2_6	.178	.193	.244	.144	.145	.209	.188	.147	.167	.085	.238	.230	.117	.232	.102	.148	.143	.296	.333	.260	.299	.434	-	-

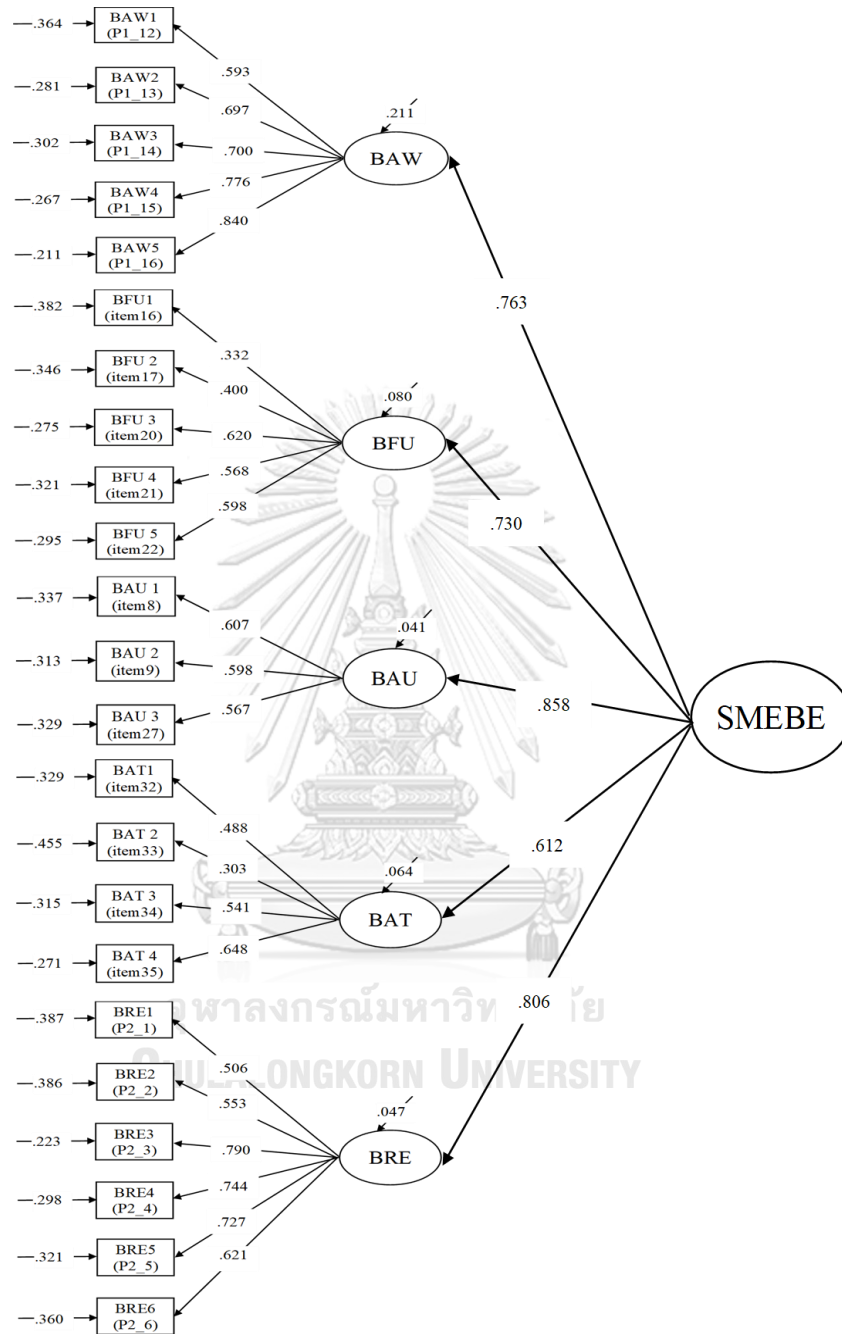
All correlations are significant ($p < .05$).



Table 5.34: SME brand equity model in case of consumers with high brand equity level

Variable	$\hat{\beta}$	E	S.E.	t	R ²
<i>Second-order confirmatory factor analysis</i>					
Components of SME brand equity (SMEBE)					
Brand awareness (BAW)	.763	.543	.046	11.798	.582
Brand functionality (BFU)	.730	.303	.037	8.075	.533
Brand authenticity (BAU)	.858	.339	.041	8.315	.736
Brand attentiveness (BAT)	.612	.196	.035	5.640	.375
Brand resonance (BRE)	.806	.294	.037	7.950	.650
<i>First-order confirmatory factor analysis</i>					
Brand awareness (BAW)					
BAW 1 (P1_12)	.593	.624	.059	10.508	.352
BAW 2 (P1_13)	.697	.725	.056	12.866	.486
BAW 3 (P1_14)	.700	.758	.058	12.983	.490
BAW 4 (P1_15)	.776	.894	.061	14.724	.602
BAW 5 (P1_16)	.840	1.000			.706
Brand functionality (BFU)					
BFU 1 (item 16)	.332	.525	.113	4.648	.110
BFU 2 (item 17)	.400	.619	.113	5.473	.160
BFU 3 (item 20)	.620	1.000			.384
BFU 4 (item 21)	.568	.944	.132	7.141	.323
BFU 5 (item 22)	.598	.976	.132	7.404	.358
Brand authenticity (BAU)					
BAU 1 (item 8)	.607	1.123	.172	6.540	.368
BAU 2 (item 9)	.598	1.056	.154	6.856	.358
BAU 3 (item 27)	.567	1.000			.321
Brand attentiveness (BAT)					
BAT 1 (item 32)	.488	1.000			.238
BAT 2 (item 33)	.303	.668	.178	3.744	.092
BAT 3 (item 34)	.541	1.126	.206	5.462	.293
BAT 4 (item 35)	.648	1.380	.243	5.672	.420
Brand resonance (BRE)					
BRE 1 (P2_1)	.506	1.000			.256
BRE 2 (P2_2)	.553	1.131	.124	9.094	.306
BRE 3 (P2_3)	.790	1.665	.193	8.611	.624
BRE 4 (P2_4)	.744	1.668	.196	8.490	.554
BRE 5 (P2_5)	.727	1.644	.192	8.560	.529
BRE 6 (P2_6)	.621	1.302	.179	7.276	.386
$\chi^2 (197, N=303) = 213.287, p = .203; CFI = .992, TLI = .990, RMSEA = .017$					
All factor loadings are significant ($p < .05$).					

Figure 5.9: SME brand equity model in case of consumers with high brand equity level



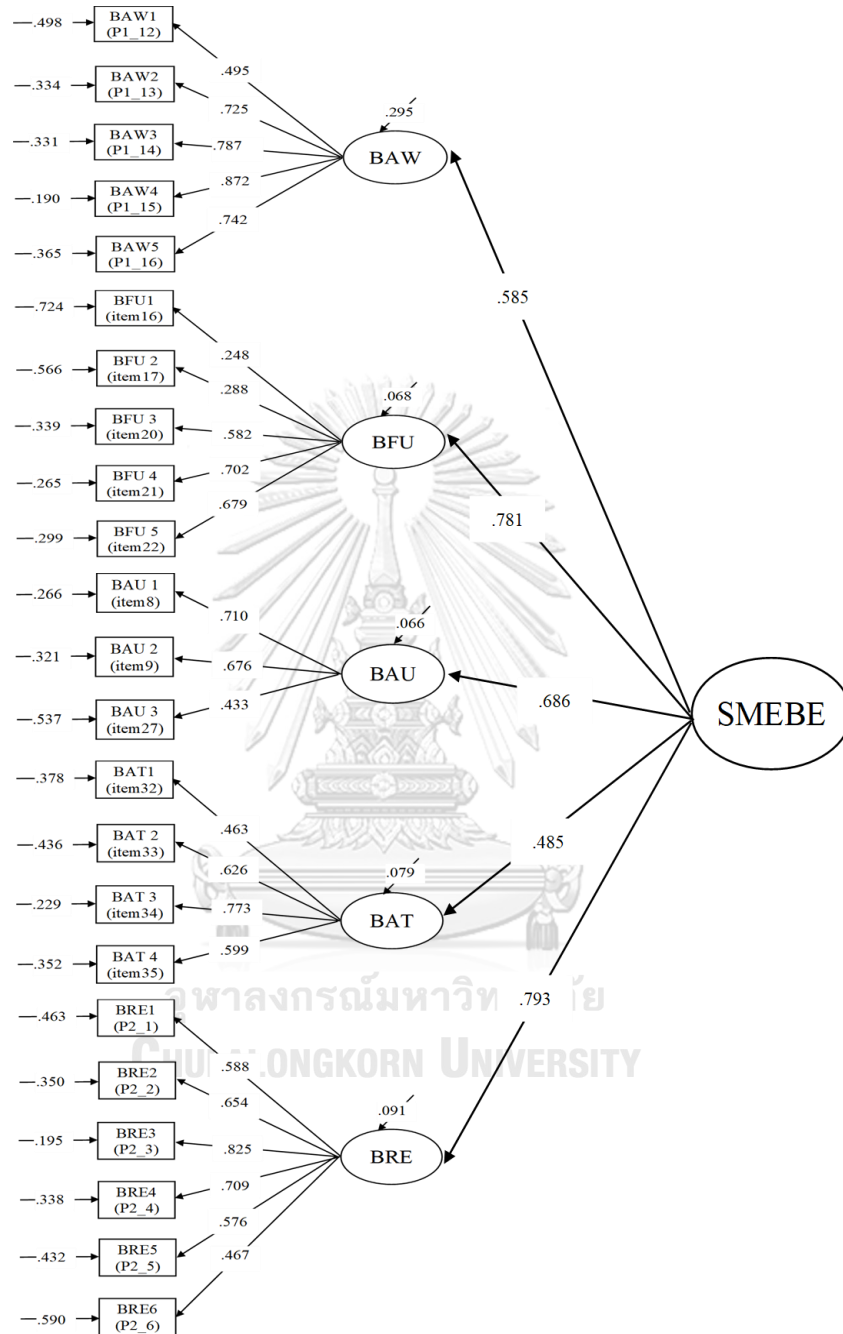
$\chi^2 (197, N=303) = 213.287, p = .203; CFI = .992, TLI = .990, RMSEA = .017$

Note: All estimates are significant ($p < .05$).

Table 5.35: SME brand equity model in case of consumers with low brand equity level

Variable	$\hat{\beta}$	<i>E</i>	<i>S.E.</i>	<i>t</i>	<i>R</i> ²
<i>Second-order confirmatory factor analysis</i>					
Components of SME brand equity (SMEBE)					
Brand awareness (BAW)	.585	.391	.053	7.412	.342
Brand functionality (BFU)	.781	.325	.045	7.232	.610
Brand authenticity (BAU)	.686	.242	.047	5.174	.471
Brand attentiveness (BAT)	.485	.156	.034	4.530	.235
Brand resonance (BRE)	.793	.392	.050	7.797	.629
<i>First-order confirmatory factor analysis</i>					
Brand awareness (BAW)					
BAW 1 (P1_12)	.495	.602	.079	7.637	.245
BAW 2 (P1_13)	.725	.909	.087	10.473	.526
BAW 3 (P1_14)	.787	1.094	.087	12.622	.619
BAW 4 (P1_15)	.872	1.160	.090	12.941	.760
BAW 5 (P1_16)	.742	1.000			.551
Brand functionality (BFU)					
BFU 1 (item 16)	.248	.523	.155	3.373	.062
BFU 2 (item 17)	.288	.544	.133	4.076	.083
BFU 3 (item 20)	.582	1.000			.339
BFU 4 (item 21)	.702	1.218	.163	7.477	.493
BFU 5 (item 22)	.679	1.213	.163	7.449	.461
Brand authenticity (BAU)					
BAU 1 (item 8)	.710	1.478	.271	5.457	.504
BAU 2 (item 9)	.676	1.476	.272	5.433	.457
BAU 3 (item 27)	.433	1.000			.187
Brand attentiveness (BAT)					
BAT 1 (item 32)	.463	1.000			.214
BAT 2 (item 33)	.626	1.650	.321	5.141	.392
BAT 3 (item 34)	.773	1.813	.340	5.335	.598
BAT 4 (item 35)	.599	1.380	.271	5.086	.359
Brand resonance (BRE)					
BRE 1 (P2_1)	.588	1.000			.346
BRE 2 (P2_2)	.654	1.034	.105	9.862	.428
BRE 3 (P2_3)	.825	1.304	.146	8.934	.681
BRE 4 (P2_4)	.709	1.180	.137	8.632	.503
BRE 5 (P2_5)	.576	.937	.135	6.957	.332
BRE 6 (P2_6)	.467	.819	.139	5.914	.218
$\chi^2 (193, N=249) = 221.865, p = .076; CFI = .986, TLI = .981, RMSEA = .025$					
All factor loadings are significant ($p < .05$).					

Figure 5.10: SME brand equity model in case of consumers with low brand equity level



$\chi^2 (193, N=249) = 221.865, p = .076; CFI = .986, TLI = .981, RMSEA = .025$

Note: All estimates are significant ($p < .05$).

Table 5.36: Summary of SMEBE model invariance testing for consumers with different brand equity level

Model Description	Groups	Comparative model	χ^2	df	$\Delta\chi^2$	Δdf	Statistical significance
1. Hypothesized model (Model 1)	High SME brand equity, low SME brand equity	-	805.211	434	-	-	-
2. Factor loadings, variances, and covariances constrained equal	High SME brand equity, low SME brand equity	Model 1	888.675	463	83.464	29	$p < .05$
3. Factor loadings constrained equal	High SME brand equity, low SME brand equity	Model 1	837.956	455	32.745	21	NS

Table 5.37: Descriptive statistics of SME brand equity in case of consumers with high product involvement level

Variable	Min	Max	M	SD	Sk	Ku	CV
SME brand equity							
Brand awareness $\alpha = .869$	1.40	5.00	3.61	.703	-.276	.496	.19
Brand...is familiar. (P1_12)	1	5	3.64	.805	-.087	-.078	.22
Brand...is well known. (P1_13)	1	5	3.67	.808	-.220	-.191	.22
Brand...is visible. (P1_14)	1	5	3.61	.908	-.509	.273	.25
Brand...is heard a lot. (P1_15)	1	5	3.58	.896	-.399	-.114	.25
Brand...is famous. (P1_16)	1	5	3.54	.910	-.272	-.150	.26
Brand functionality $\alpha = .815$	1.80	5.00	3.68	.614	-.286	.672	.17
The brand's products/ services are safe. (item 16)	1	5	3.87	.768	-.227	-.153	.20
The brand offers quality product/service. (item 17)	2	5	3.76	.762	-.112	-.403	.20
The brand's products and services are actually useful. (item 20)	1	5	3.58	.842	-.228	-.024	.24
The brand's marketing claims are accurate. (item 21)	1	5	3.59	.833	-.484	.320	.23
The brand maintains the quality of its product/service. (item 22)	1	5	3.59	.841	-.124	-.387	.23
Brand authenticity $\alpha = .717$	1.00	5.00	3.60	.686	-.471	.601	.19
The brand is famous for its product/service. (item 8)	1	5	3.60	.848	-.202	-.216	.24
The brand is the original of the particular product/ service. (item 9)	1	5	3.61	.862	-.584	.662	.24
The brand gives you an experience you never had before. (item 27)	1	5	3.57	.866	-.370	-.106	.24
Brand attentiveness $\alpha = .761$	1.50	5.00	3.56	.602	-.186	.690	.17
The brand keeps your privacy. (item 32)	1	5	3.55	.769	-.192	-.085	.22
The brand has post-purchase service. (item 33)	1	5	3.64	.822	-.642	.765	.23
The brand gives you the best offer. (item 34)	1	5	3.52	.762	-.103	.401	.22
The brand has many communication channels. (item 35)	1	5	3.53	.800	-.167	-.030	.23
Brand resonance $\alpha = .861$	1.00	5.00	3.58	.660	-.486	1.582	.18
I would like to buy brand... (P2_1)	1	5	3.77	.786	-.480	.655	.21
I consider myself to be loyal to brand... (P2_2)	1	5	3.55	.864	-.451	.641	.24
I am willing to recommend brand... to my friends. (P2_3)	1	5	3.56	.832	-.182	.181	.23
I am used to brand... (P2_4)	1	5	3.58	.881	-.511	.294	.25
Brand...would be my first choice. (P2_5)	1	5	3.53	.911	-.333	-.150	.26
I will not buy other brands if brand...is available at the store. (P2_6)	1	5	3.51	.877	-.548	.444	.25
N = 298							

Table 5.38: Correlation matrix of SME brand equity in case of consumers with high product involvement level

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Brand awareness																								
1.P_L12	-																							
2.P_L13	.554	-																						
3.P_L14	.386	.596	-																					
4.P_L15	.497	.623	.651	-																				
5.P_L16	.524	.607	.559	.727	-																			
Brand functionality																								
6.Item 16	.248	.274	.286	.284	.310	-																		
7.Item 17	.249	.379	.345	.349	.357	.666	-																	
8.Item 20	.259	.320	.383	.335	.407	.395	.527	-																
9.Item 21	.304	.270	.327	.392	.451	.508	.526	.587	-															
10.Item22	.295	.320	.380	.422	.453	.335	.411	.542	.589	-														
Brand authenticity																								
11.Item 8	.329	.368	.283	.417	.449	.237	.262	.404	.507	.471	-													
12.Item 9	.329	.333	.275	.276	.331	.260	.287	.426	.415	.423	.547	-												
13.Item27	.390	.381	.379	.328	.419	.227	.297	.426	.453	.405	.414	.413	-											
Brand attentiveness																								
14.Item32	.312	.352	.332	.331	.423	.239	.279	.397	.437	.409	.441	.410	.485	-										
15.Item33	.224	.146	.182	.193	.254	.199	.146	.276	.365	.345	.301	.387	.342	.388	-									
16.Item34	.233	.210	.184	.199	.278	.212	.242	.288	.334	.349	.278	.311	.360	.386	.490	-								
17.Item35	.281	.347	.274	.300	.364	.252	.292	.376	.436	.404	.346	.401	.359	.435	.391	.579	-							

Table 5.38: --continued

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Brand resonance																								
18.P2_1	.320	.318	.334	.366	.398	.313	.265	.317	.295	.321	.374	.386	.367	.337	.338	.240	.267	-	-	-	-	-	-	-
19.P2_2	.270	.252	.323	.253	.250	.239	.260	.392	.316	.362	.321	.453	.393	.361	.390	.377	.351	.559	-	-	-	-	-	-
20.P2_3	.388	.354	.399	.400	.413	.275	.250	.323	.243	.315	.293	.388	.405	.340	.338	.309	.382	.484	.549	-	-	-	-	-
21.P2_4	.413	.342	.369	.414	.397	.300	.276	.361	.332	.313	.345	.398	.385	.309	.305	.301	.326	.432	.547	.671	-	-	-	-
22.P2_5	.415	.366	.401	.372	.443	.319	.355	.473	.398	.370	.332	.448	.377	.308	.278	.302	.332	.405	.576	.551	.608	-	-	-
23.P2_6	.352	.393	.405	.340	.345	.316	.320	.391	.377	.321	.359	.395	.312	.359	.305	.277	.314	.422	.419	.341	.426	.607	-	-

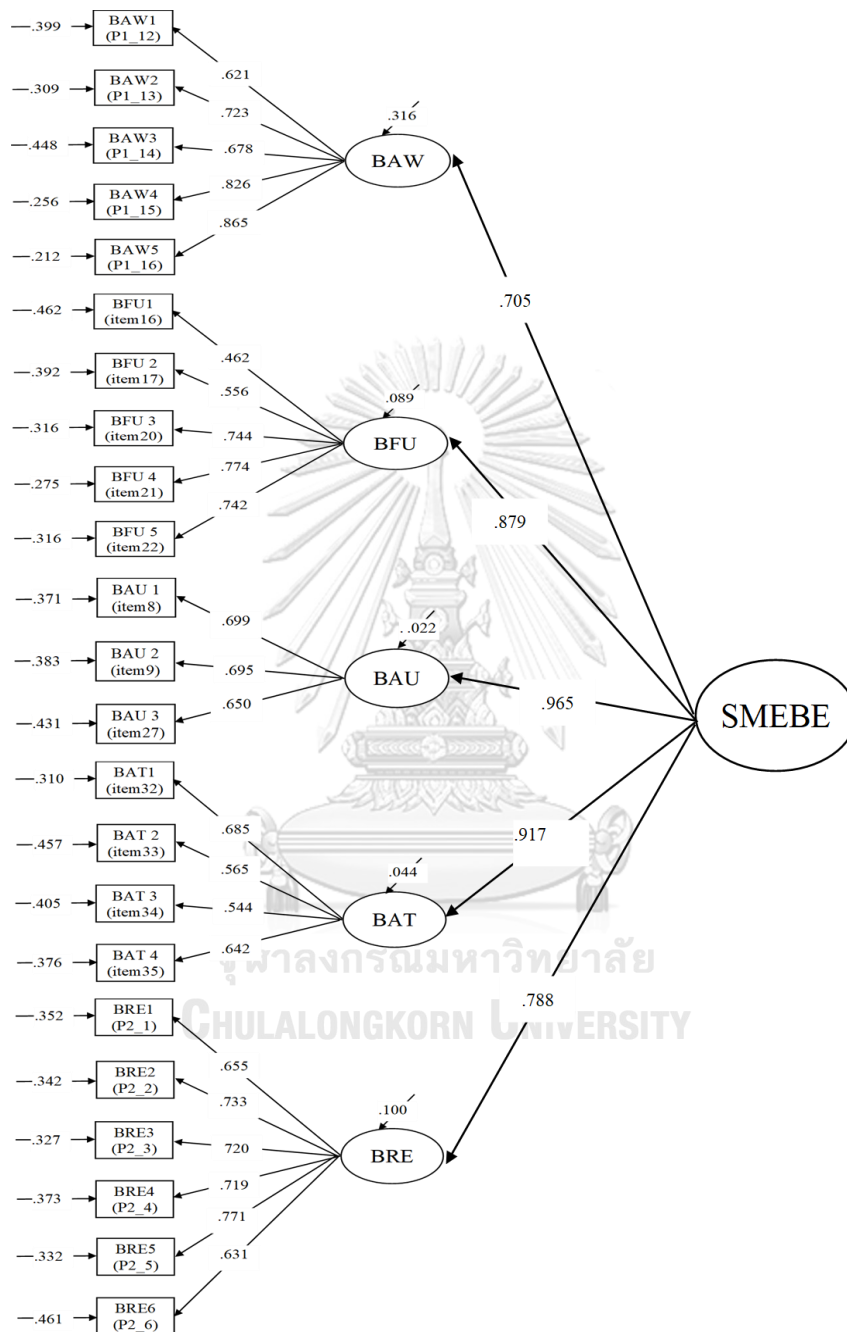
All correlations are significant ($p < .05$).



Table 5.39: SME brand equity model in case of consumers with high product involvement level

Variable	$\hat{\beta}$	<i>E</i>	<i>S.E.</i>	<i>t</i>	<i>R</i> ²
<i>Second-order confirmatory factor analysis</i>					
Components of SME brand equity (SMEBE)					
Brand awareness (BAW)	.705	.559	.049	11.344	.497
Brand functionality (BFU)	.879	.551	.045	12.284	.773
Brand authenticity (BAU)	.965	.543	.048	11.244	.931
Brand attentiveness (BAT)	.917	.481	.042	11.343	.841
Brand resonance (BRE)	.788	.406	.041	9.850	.621
<i>First-order confirmatory factor analysis</i>					
Brand awareness (BAW)					
BAW 1 (P1_12)	.621	.632	.056	11.270	.386
BAW 2 (P1_13)	.723	.733	.053	13.836	.523
BAW 3 (P1_14)	.678	.779	.063	12.297	.460
BAW 4 (P1_15)	.826	.933	.057	16.392	.682
BAW 5 (P1_16)	.865	1.000			.748
Brand functionality (BFU)					
BFU 1 (item 16)	.462	.566	.076	7.452	.213
BFU 2 (item 17)	.556	.669	.071	9.474	.309
BFU 3 (item 20)	.744	1.000			.554
BFU 4 (item 21)	.774	1.022	.082	12.488	.599
BFU 5 (item 22)	.742	.995	.083	12.036	.551
Brand authenticity (BAU)					
BAU 1 (item 8)	.699	1.058	.106	9.977	.489
BAU 2 (item 9)	.695	1.064	.107	9.916	.483
BAU 3 (item 27)	.650	1.000			.423
Brand attentiveness (BAT)					
BAT 1 (item 32)	.685	1.000			.469
BAT 2 (item 33)	.565	.883	.106	8.337	.319
BAT 3 (item 34)	.544	.788	.099	7.961	.296
BAT 4 (item 35)	.642	.979	.105	9.326	.412
Brand resonance (BRE)					
BRE 1 (P2_1)	.655	1.000			.429
BRE 2 (P2_2)	.733	1.226	.107	11.493	.537
BRE 3 (P2_3)	.720	1.153	.114	10.092	.518
BRE 4 (P2_4)	.719	1.230	.121	10.132	.517
BRE 5 (P2_5)	.771	1.355	.136	9.931	.594
BRE 6 (P2_6)	.631	1.073	.119	8.988	.398
$\chi^2 (194, N=298) = 216.174, p = .132; CFI = .993, TLI = .991, RMSEA = .020$					
All factor loadings are significant ($p < .05$).					

Figure 5.11: SME brand equity model in case of consumers with high product involvement level



$\chi^2 (194, N=298) = 221.865, p = .132; CFI = .993, TLI = .99, RMSEA = .020$
 Note: All estimates are significant ($p < .05$).

Table 5.40: Descriptive statistics of SME brand equity in case of consumers with low product involvement level

Variable	Min	Max	M	SD	Sk	Ku	CV
SME brand equity							
Brand awareness $\alpha = .847$	1.00	5.00	2.94	.651	-.030	.237	.22
Brand...is familiar. (P1_12)	1	5	3.02	.787	-.096	.225	.26
Brand...is well known. (P1_13)	1	5	3.06	.791	-.105	.319	.26
Brand...is visible. (P1_14)	1	5	2.97	.812	.101	-.066	.27
Brand...is heard a lot. (P1_15)	1	5	2.84	.841	.084	-.021	.30
Brand...is famous. (P1_16)	1	5	2.78	.897	.098	-.486	.32
Brand functionality $\alpha = .740$	1.00	4.60	3.15	.580	-.221	.248	.18
The brand's products/ services are safe. (item 16)	1	5	3.50	.800	-.065	.098	.23
The brand offers quality product/service. (item 17)	1	5	3.27	.784	-.289	-.033	.24
The brand's products and services are actually useful. (item 20)	1	5	3.00	.784	.057	-.635	.26
The brand's marketing claims are accurate. (item 21)	1	5	3.00	.910	.027	-.255	.30
The brand maintains the quality of its product/service. (item 22)	1	5	2.97	.856	-.123	-.410	.29
Brand authenticity $\alpha = .727$	1.00	5.00	2.94	.656	.119	.091	.22
The brand is famous for its product/service. (item 8)	1	5	2.97	.823	.001	-.195	.28
The brand is the original of the particular product/ service. (item 9)	1	5	2.93	.769	.124	-.342	.26
The brand gives you an experience you never had before. (item 27)	1	5	2.93	.840	-.056	-.290	.29
Brand attentiveness $\alpha = .763$	1.00	4.50	3.11	.623	-.396	.035	.20
The brand keeps your privacy. (item 32)	1	5	3.09	.770	-.104	.106	.25
The brand has post-purchase service. (item 33)	1	5	3.25	.877	-.191	-.188	.27
The brand gives you the best offer. (item 34)	1	5	3.10	.820	-.442	-.249	.26
The brand has many communication channels. (item 35)	1	5	3.00	.787	-.160	-.081	.26
Brand resonance $\alpha = .829$	1.00	4.83	3.01	.603	-.356	.530	.20
I would like to buy brand... (P2_1)	1	5	3.26	.830	-.272	.097	.25
I consider myself to be loyal to brand... (P2_2)	1	5	3.09	.810	-.381	.198	.26
I am willing to recommend brand... to my friends. (P2_3)	1	5	2.88	.740	-.216	.079	.26
I am used to brand... (P2_4)	1	5	2.89	.824	-.032	-.305	.29
Brand...would be my first choice. (P2_5)	1	5	2.86	.844	.051	-.051	.30
I will not buy other brands if brand...is available at the store. (P2_6)	1	5	3.06	.878	.007	-.132	.29
N = 222							

Table 5.41: Correlation matrix of SME brand equity in case of consumers with low product involvement level

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Brand awareness																								
1.PI_12	-																							
2.PI_13	.550	-																						
3.PI_14	.482	.559	-																					
4.PI_15	.402	.450	.577	-																				
5.PI_16	.437	.541	.613	.644	-																			
Brand functionality																								
6.Item 16	.198	.047	.160	.093	.011	-																		
7.Item 17	.276	.047	.161	.122	.122	.644	-																	
8.Item 20	.300	.321	.341	.323	.335	.209	.346	-																
9.Item 21	.385	.345	.282	.344	.373	.084	.284	.564	-															
10.Item22	.411	.330	.337	.346	.399	.132	.227	.485	.645	-														
Brand authenticity																								
11.Item 8	.378	.329	.364	.347	.354	.220	.215	.406	.417	.429	-													
12.Item 9	.302	.245	.373	.339	.397	.213	.288	.367	.427	.437	.590	-												
13.Item27	.344	.285	.276	.286	.329	.185	.316	.384	.332	.488	.396	.433	-											
Brand attentiveness																								
14.Item32	.347	.281	.221	.303	.194	.247	.310	.360	.361	.402	.354	.325	.290	-										
15.Item33	.287	.116	.156	.154	.133	.131	.289	.257	.288	.347	.342	.269	.361	.400	-									
16.Item34	.291	.200	.154	.235	.234	.183	.182	.281	.309	.391	.359	.335	.463	.343	.536	-								
17.Item35	.343	.131	.205	.225	.185	.197	.288	.220	.259	.430	.286	.201	.369	.396	.447	.547	-							

Table 5.41: --continued

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Brand resonance																								
18. P2_1	.323	.287	.265	.248	.239	.162	.171	.195	.304	.360	.354	.312	.207	.266	.178	.187	.216	-	-	-	-	-	-	-
19. P2_2	.415	.274	.320	.348	.271	.137	.280	.370	.380	.395	.397	.367	.375	.341	.310	.258	.242	.636	-	-	-	-	-	-
20. P2_3	.315	.391	.341	.362	.371	.144	.180	.413	.424	.410	.284	.295	.308	.329	.150	.333	.178	.476	.524	-	-	-	-	-
21. P2_4	.429	.399	.354	.457	.414	.003	.208	.462	.471	.400	.369	.330	.407	.373	.259	.345	.285	.386	.490	.609	-	-	-	-
22. P2_5	.325	.413	.324	.420	.425	-.021	.114	.451	.413	.439	.353	.311	.369	.369	.196	.375	.251	.273	.417	.567	.647	-	-	-
23. P2_6	.280	.178	.307	.203	.217	.190	.240	.243	.215	.297	.378	.288	.257	.360	.204	.243	.197	.327	.419	.289	.284	.427	-	-

All correlations are significant ($p < .05$).

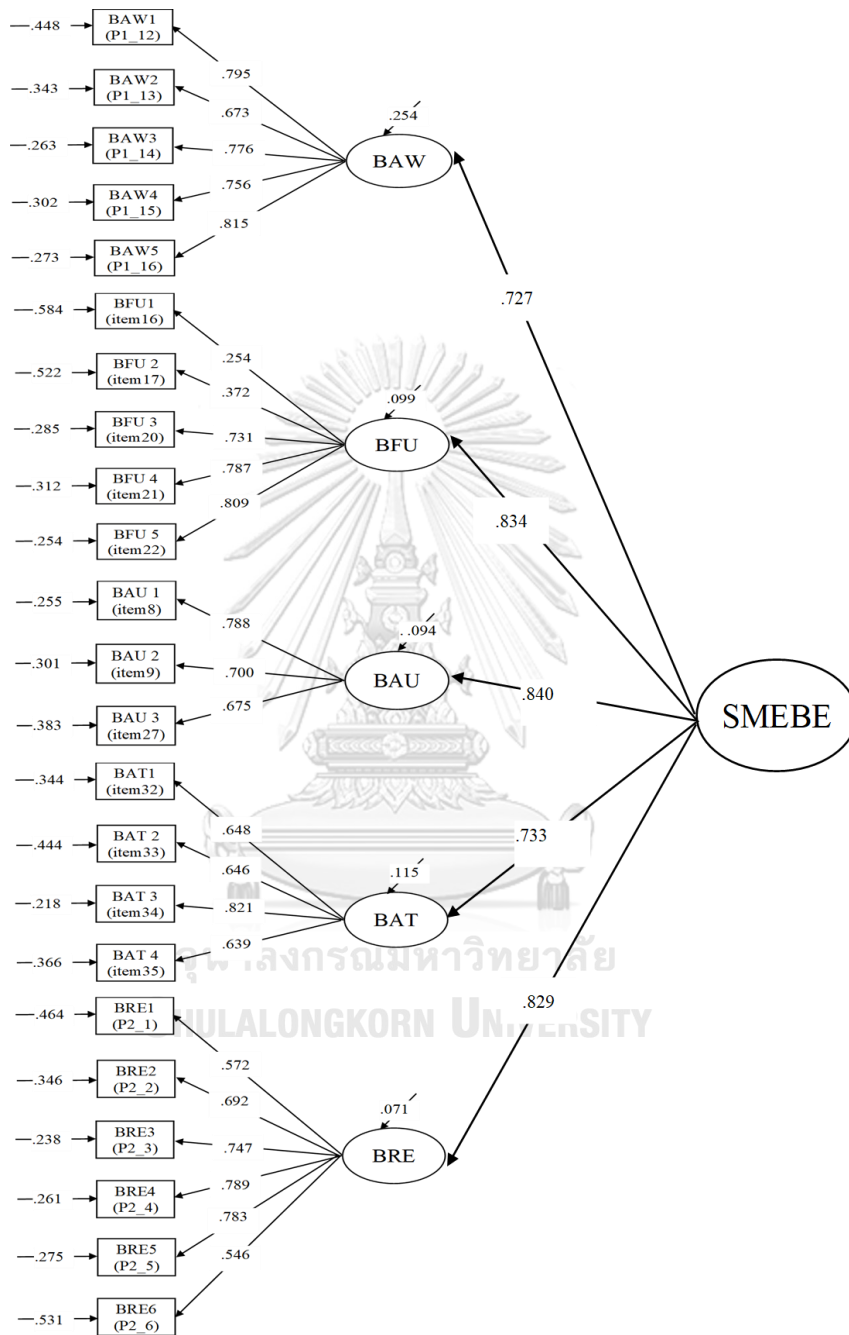


Table 5.42: SME brand equity model in case of consumers with low product involvement level

Variable	$\hat{\beta}$	<i>E</i>	<i>S.E.</i>	<i>t</i>	<i>R</i> ²
<i>Second-order confirmatory factor analysis</i>					
Components of SME brand equity (SMEBE)					
Brand awareness (BAW)	.727	.534	.056	9.508	.529
Brand functionality (BFU)	.834	.476	.048	9.945	.696
Brand authenticity (BAU)	.840	.475	.053	8.974	.706
Brand attentiveness (BAT)	.733	.365	.047	7.790	.537
Brand resonance (BRE)	.829	.394	.049	7.963	.687
<i>First-order confirmatory factor analysis</i>					
Brand awareness (BAW)					
BAW 1 (P1_12)	.795	.848	.103	8.225	.632
BAW 2 (P1_13)	.673	.725	.071	10.258	.453
BAW 3 (P1_14)	.776	.859	.071	12.115	.602
BAW 4 (P1_15)	.756	.863	.073	11.753	.572
BAW 5 (P1_16)	.815	1.000			.664
Brand functionality (BFU)					
BFU 1 (item 16)	.254	.352	.100	3.533	.065
BFU 2 (item 17)	.372	.507	.098	5.157	.138
BFU 3 (item 20)	.731	1.000			.534
BFU 4 (item 21)	.787	1.247	.124	10.069	.619
BFU 5 (item 22)	.809	1.216	.120	10.109	.654
Brand authenticity (BAU)					
BAU 1 (item 8)	.788	1.141	.136	8.384	.621
BAU 2 (item 9)	.700	.951	.119	8.021	.490
BAU 3 (item 27)	.675	1.000			.456
Brand attentiveness (BAT)					
BAT 1 (item 32)	.648	1.000			.420
BAT 2 (item 33)	.646	1.130	.153	7.398	.417
BAT 3 (item 34)	.821	1.345	.171	7.877	.674
BAT 4 (item 35)	.639	1.008	.137	7.377	.408
Brand resonance (BRE)					
BRE 1 (P2_1)	.572	1.000			.327
BRE 2 (P2_2)	.692	1.186	.116	10.234	.479
BRE 3 (P2_3)	.747	1.150	.140	8.211	.558
BRE 4 (P2_4)	.789	1.378	.163	8.431	.623
BRE 5 (P2_5)	.783	1.390	.183	7.580	.613
BRE 6 (P2_6)	.546	.998	.154	6.495	.298

χ^2 (188, *N*=222) = 211.952, *p* = .111; CFI = .989, TLI = .986, RMSEA = .024
All factor loadings are significant (*p* < .05).

Figure 5.12: SME brand equity model in case of consumers with low product involvement level



$\chi^2 (188, N=222) = 211.952, p = .111; CFI = .989, TLI = .986, RMSEA = .024$
 Note: All estimates are significant ($p < .05$).

Table 5.43: Summary of SMEBE model invariance testing for consumers with different product involvement level

Model Description	Groups	Comparative model	χ^2	df	$\Delta\chi^2$	Δdf	Statistical significance
1. Hypothesized model (Model 1)	High product involvement, low product involvement	-	843.931	436	-	-	-
2. Factor loadings, variances, and covariances constrained equal	High product involvement, low product involvement	Model 1	900.625	464	56.694	28	$p < .05$
3. Factor loadings constrained equal	High product involvement, low product involvement	Model 1	869.477	457	25.546	21	NS

Table 5.44: Descriptive statistics of SME brand equity in case of consumers with high brand engagement level

Variable	Min	Max	M	SD	Sk	Ku	CV
SME brand equity							
Brand awareness $\alpha = .821$	1.60	5.00	3.66	.569	.045	1.183	.16
Brand...is familiar. (P1_12)	2	5	3.71	.678	.245	-.566	.18
Brand...is well known. (P1_13)	2	5	3.73	.671	.040	-.325	.18
Brand...is visible. (P1_14)	1	5	3.68	.742	-.125	.010	.20
Brand...is heard a lot. (P1_15)	1	5	3.60	.797	-.412	.147	.22
Brand...is famous. (P1_16)	1	5	3.56	.822	-.406	.326	.23
Brand functionality $\alpha = .767$	2.40	5.00	3.69	.519	.320	.474	.14
The brand's products/ services are safe. (item 16)	3	5	3.82	.667	.217	-.777	.17
The brand offers quality product/service. (item 17)	2	5	3.73	.687	-.027	-.261	.18
The brand's products and services are actually useful. (item 20)	2	5	3.63	.740	.062	-.379	.20
The brand's marketing claims are accurate. (item 21)	2	5	3.66	.733	-.206	-.163	.20
The brand maintains the quality of its product/service. (item 22)	1	5	3.63	.771	-.108	-.111	.21
Brand authenticity $\alpha = .719$	1.67	5.00	3.66	.611	-.285	.718	.17
The brand is famous for its product/service. (item 8)	1	5	3.65	.762	-.253	.285	.21
The brand is the original of the particular product/ service. (item 9)	2	5	3.67	.755	-.273	-.163	.21
The brand gives you an experience you never had before. (item 27)	1	5	3.65	.775	-.327	.269	.21
Brand attentiveness $\alpha = .737$	1.75	5.00	3.63	.550	-.092	.978	.15
The brand keeps your privacy. (item 32)	2	5	3.63	.711	-.069	-.224	.20
The brand has post-purchase service. (item 33)	1	5	3.73	.730	-.420	.705	.20
The brand gives you the best offer. (item 34)	1	6	3.62	.717	-.191	.795	.20
The brand has many communication channels. (item 35)	1	5	3.54	.781	-.120	.074	.22
Brand resonance $\alpha = .791$	1.83	5.00	3.69	.503	.342	1.375	.14
I would like to buy brand... (P2_1)	2	5	3.83	.677	-.247	.096	.18
I consider myself to be loyal to brand... (P2_2)	2	5	3.72	.683	.158	-.496	.18
I am willing to recommend brand... to my friends. (P2_3)	2	5	3.61	.710	.151	-.357	.20
I am used to brand... (P2_4)	1	5	3.69	.740	-.249	.146	.20
Brand...would be my first choice. (P2_5)	1	5	3.62	.777	-.144	.117	.21
I will not buy other brands if brand...is available at the store. (P2_6)	1	5	3.65	.727	-.364	.577	.20
N = 295							

Table 5.45: Correlation matrix of SME brand equity in case of consumers with high brand engagement level

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Brand awareness																								
1.PI_12	-																							
2.PI_13	.407	-																						
3.PI_14	.376	.532	-																					
4.PI_15	.372	.464	.557	-																				
5.PI_16	.415	.487	.515	.646	-																			
Brand functionality																								
6.Item 16	.238	.235	.293	.187	.219	-																		
7.Item 17	.212	.251	.284	.202	.305	.517	-																	
8.Item 20	.214	.282	.374	.346	.413	.328	.454	-																
9.Item 21	.277	.296	.303	.361	.436	.232	.328	.581	-															
10.Item22	.292	.279	.272	.362	.415	.210	.251	.509	.548	-														
Brand authenticity																								
11.Item 8	.302	.295	.288	.565	.382	.181	.227	.422	.459	.453	-													
12.Item 9	.320	.332	.244	.321	.390	.268	.289	.478	.478	.420	.545	-												
13.Item27	.355	.323	.407	.326	.429	.289	.332	.480	.493	.417	.447	.390	-											
Brand attentiveness																								
14.Item32	.210	.267	.204	.230	.299	.264	.286	.377	.411	.408	.378	.335	.347	-										
15.Item33	.255	.139	.154	.150	.224	.138	.175	.238	.308	.339	.342	.340	.300	.361	-									
16.Item34	.323	.218	.173	.206	.314	.252	.225	.273	.287	.369	.315	.284	.334	.327	.465	-								
17.Item35	.303	.314	.267	.317	.366	.223	.253	.345	.382	.396	.362	.399	.300	.429	.393	.493	-							

Table 5.45: --continued

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Brand resonance																								
18. P2_1	.182	.237	.193	.223	.211	.191	.158	.276	.283	.286	.323	.271	.201	.289	.258	.207	.274	-	-	-	-	-	-	-
19. P2_2	.278	.236	.216	.264	.243	.168	.192	.333	.314	.308	.331	.394	.261	.278	.276	.237	.271	.510	-	-	-	-	-	-
20. P2_3	.340	.327	.386	.433	.459	.285	.247	.389	.399	.388	.328	.405	.360	.293	.134	.212	.340	.374	.386	-	-	-	-	-
21. P2_4	.347	.324	.349	.471	.437	.220	.241	.392	.371	.294	.353	.340	.329	.190	.132	.178	.291	.332	.395	.547	-	-	-	-
22. P2_5	.380	.298	.400	.418	.490	.264	.256	.445	.442	.378	.295	.428	.357	.262	.121	.262	.307	.281	.454	.477	.482	-	-	-
23. P2_6	.285	.306	.393	.366	.288	.257	.194	.286	.260	.271	.381	.282	.236	.333	.214	.214	.212	.274	.336	.227	.271	.443	-	-

All correlations are significant ($p < .05$).

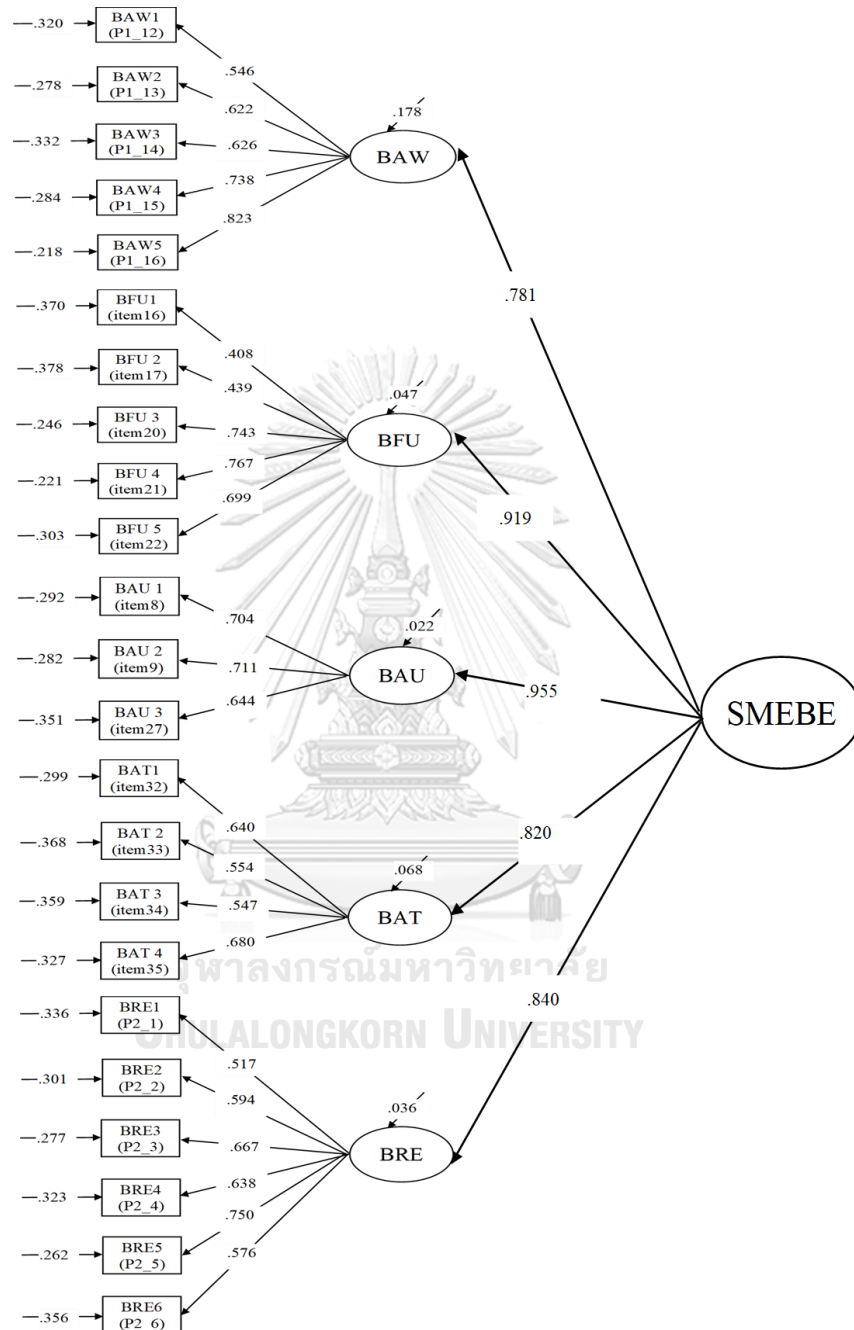


Table 5.46: SME brand equity model in case of consumers with the high brand engagement level

Variable	$\hat{\beta}$	<i>E</i>	<i>S.E.</i>	<i>t</i>	<i>R</i> ²
<i>Second-order confirmatory factor analysis</i>					
Components of SME brand equity (SMEBE)					
Brand awareness (BAW)	.781	.528	.044	12.024	.610
Brand functionality (BFU)	.919	.507	.039	12.830	.845
Brand authenticity (BAU)	.955	.477	.043	11.143	.912
Brand attentiveness (BAT)	.820	.373	.040	9.392	.672
Brand resonance (BRE)	.840	.294	.037	8.014	.706
<i>First-order confirmatory factor analysis</i>					
Brand awareness (BAW)					
BAW 1 (P1_12)	.546	.546	.060	9.124	.298
BAW 2 (P1_13)	.622	.620	.059	10.449	.387
BAW 3 (P1_14)	.626	.685	.066	10.334	.392
BAW 4 (P1_15)	.738	.863	.068	12.626	.545
BAW 5 (P1_16)	.823	1.000			.677
Brand functionality (BFU)					
BFU 1 (item 16)	.408	.493	.076	6.444	.166
BFU 2 (item 17)	.439	.545	.072	7.555	.193
BFU 3 (item 20)	.743	1.000			.552
BFU 4 (item 21)	.767	1.018	.082	12.406	.588
BFU 5 (item 22)	.699	.975	.086	11.380	.489
Brand authenticity (BAU)					
BAU 1 (item 8)	.704	1.072	.108	9.955	.496
BAU 2 (item 9)	.711	1.073	.106	10.093	.506
BAU 3 (item 27)	.644	1.000			.415
Brand attentiveness (BAT)					
BAT 1 (item 32)	.640	1.000			.410
BAT 2 (item 33)	.554	.888	.119	7.477	.307
BAT 3 (item 34)	.547	.861	.120	7.157	.299
BAT 4 (item 35)	.680	1.166	.134	8.693	.462
Brand resonance (BRE)					
BRE 1 (P2_1)	.517	1.000			.267
BRE 2 (P2_2)	.594	1.157	.134	8.651	.353
BRE 3 (P2_3)	.667	1.345	.179	7.523	.445
BRE 4 (P2_4)	.638	1.344	.182	7.371	.407
BRE 5 (P2_5)	.750	1.657	.214	7.744	.563
BRE 6 (P2_6)	.576	1.198	.172	6.958	.332

$\chi^2(200, N=295) = 225.211, p = .107; CFI = .990, TLI = .987, RMSEA = .021$
All factor loadings are significant ($p < .05$).

Figure 5.13: SME brand equity model in case of consumers with high brand engagement level



$\chi^2 (200, N=295) = 225.211, p = .111; CFI = .990, TLI = .987, RMSEA = .021$
 Note: All estimates are significant ($p < .05$).

Table 5.47: Descriptive statistics of SME brand equity in case of consumers with low brand engagement level

Variable	Min	Max	M	SD	Sk	Ku	CV
SME brand equity							
Brand awareness $\alpha = .879$	1.00	5.00	2.92	.779	.690	.667	.27
Brand...is familiar. (P1_12)	1	5	3.00	.886	.325	.513	.30
Brand...is well known. (P1_13)	1	5	3.03	.932	.259	.018	.31
Brand...is visible. (P1_14)	1	5	2.92	.941	.295	-.054	.32
Brand...is heard a lot. (P1_15)	1	5	2.86	.976	.436	.031	.34
Brand...is famous. (P1_16)	1	5	2.78	1.003	.545	-.017	.36
Brand functionality $\alpha = .811$	1.60	5.00	3.17	.670	.123	-.413	.21
The brand's products/ services are safe. (item 16)	1	5	3.60	.916	-.041	-.659	.25
The brand offers quality product/service. (item 17)	1	5	3.35	.857	.014	-.260	.26
The brand's products and services are actually useful. (item 20)	1	5	2.98	.837	.132	-.390	.28
The brand's marketing claims are accurate. (item 21)	1	5	2.96	.924	.083	-.248	.31
The brand maintains the quality of its product/service. (item 22)	1	5	2.96	.901	.151	-.358	.30
Brand authenticity $\alpha = .677$	1.00	5.00	2.90	.687	.180	.053	.24
The brand is famous for its product/service. (item 8)	1	5	2.96	.901	.267	-.076	.30
The brand is the original of the particular product/ service. (item 9)	1	5	2.89	.855	.117	.288	.30
The brand gives you an experience you never had before. (item 27)	1	5	2.84	.888	.154	-.295	.31
Brand attentiveness $\alpha = .727$	1.50	4.50	3.02	.603	-.116	-.399	.20
The brand keeps your privacy. (item 32)	1	5	2.98	.767	-.031	-.135	.26
The brand has post-purchase service. (item 33)	1	5	3.15	.922	-.021	-.361	.29
The brand gives you the best offer. (item 34)	1	5	3.00	.785	-.234	-.466	.26
The brand has many communication channels. (item 35)	1	5	2.96	.769	.072	-.643	.26
Brand resonance $\alpha = .828$	1.00	4.83	2.91	.639	-.036	1.022	.22
I would like to buy brand... (P2_1)	1	5	3.19	.866	-.065	.313	.27
I consider myself to be loyal to brand... (P2_2)	1	5	2.90	.820	-.271	.451	.28
I am willing to recommend brand... to my friends. (P2_3)	1	5	2.85	.829	.037	.399	.29
I am used to brand... (P2_4)	1	5	2.78	.889	.213	-.176	.32
Brand...would be my first choice. (P2_5)	1	5	2.79	.901	.271	-.032	.32
I will not buy other brands if brand...is available at the store. (P2_6)	1	5	2.95	.918	.175	.148	.31
N = 215							

Table 5.48: Correlation matrix of SME brand equity in case of consumers with low brand engagement level

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Brand awareness																								
1.Pl_12	-																							
2.Pl_13	.606	-																						
3.Pl_14	.420	.588	-																					
4.Pl_15	.497	.616	.675	-																				
5.Pl_16	.515	.622	.620	.746	-																			
Brand functionality																								
6.Item 16	.219	.205	.218	.230	.192	-																		
7.Item 17	.302	.268	.278	.305	.250	.764	-																	
8.Item 20	.246	.252	.312	.294	.284	.368	.498	-																
9.Item 21	.257	.240	.200	.294	.328	.212	.343	.579	-															
10.Item22	.316	.313	.349	.366	.389	.299	.411	.532	.649	-														
Brand authenticity																								
11.Item 8	.299	.369	.266	.340	.363	.305	.296	.377	.402	.424	-													
12.Item 9	.216	.209	.262	.217	.239	.273	.332	.324	.260	.371	.528	-												
13.Item27	.297	.277	.164	.217	.265	.203	.313	.285	.260	.361	.320	.390	-											
Brand attentiveness																								
14.Item32	.275	.288	.237	.309	.286	.222	.230	.349	.355	.317	.398	.374	.373	-										
15.Item33	.092	.000	.014	.045	.068	.173	.197	.191	.282	.266	.221	.228	.264	.321	-									
16.Item34	.067	.077	-.013	.110	.065	.175	.187	.178	.277	.277	.264	.237	.342	.310	.497	-								
17.Item35	.261	.236	.228	.260	.242	.275	.334	.289	.307	.416	.308	.235	.380	.347	.385	.557	-							

Table 5.48: --continued

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Brand resonance																								
18_P2_1	.304	.271	.282	.291	.355	.271	.232	.198	.167	.290	.272	.317	.282	.160	.145	.124	.152	-	-	-	-	-	-	-
19_P2_2	.154	.114	.232	.146	.126	.176	.265	.311	.179	.280	.204	.304	.331	.205	.268	.269	.186	.554	-	-	-	-	-	-
20_P2_3	.305	.344	.284	.315	.308	.210	.199	.205	.163	.230	.186	.248	.292	.253	.195	.258	.188	.507	.507	-	-	-	-	-
21_P2_4	.403	.306	.280	.352	.295	.165	.239	.245	.313	.316	.281	.306	.334	.336	.264	.288	.273	.351	.449	.658	-	-	-	-
22_P2_5	.316	.369	.278	.349	.320	.147	.260	.392	.326	.353	.330	.274	.245	.312	.230	.258	.217	.326	.446	.546	.671	-	-	-
23_P2_6	.172	.198	.228	.086	.175	.214	.273	.297	.201	.235	.252	.291	.185	.244	.197	.162	.169	.300	.297	.254	.318	.529	-	-

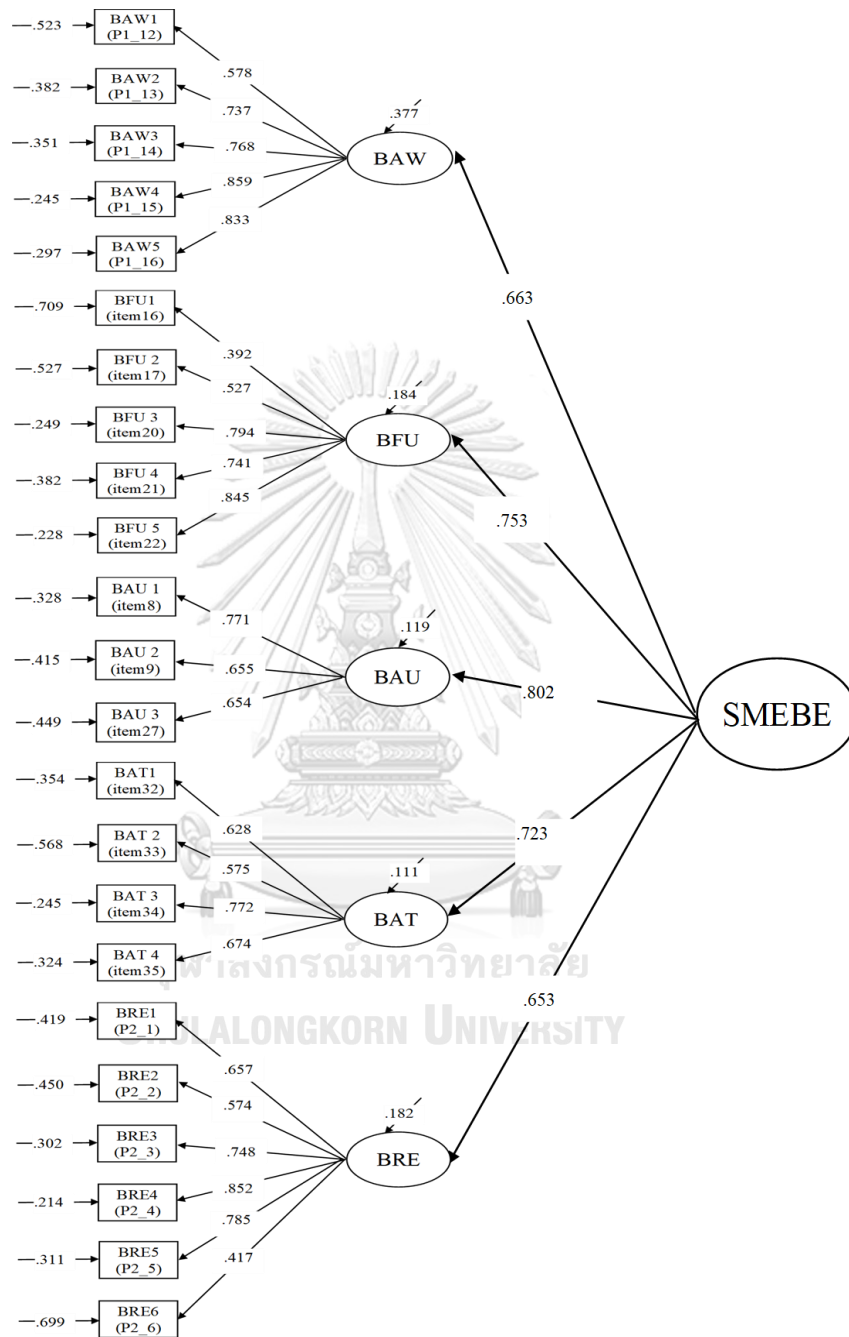
All correlations are significant ($p < .05$).



Table 5.49: SME brand equity model in case of consumers with the low brand engagement level

Variable	$\hat{\beta}$	<i>E</i>	<i>S.E.</i>	<i>t</i>	<i>R</i> ²
<i>Second-order confirmatory factor analysis</i>					
Components of SME brand equity (SMEBE)					
Brand awareness (BAW)	.663	.544	.064	8.561	.440
Brand functionality (BFU)	.753	.490	.052	9.412	.567
Brand authenticity (BAU)	.802	.464	.059	7.909	.643
Brand attentiveness (BAT)	.723	.348	.049	7.058	.523
Brand resonance (BRE)	.653	.368	.051	7.232	.426
<i>First-order confirmatory factor analysis</i>					
Brand awareness (BAW)					
BAW 1 (P1_12)	.578	.624	.070	8.913	.334
BAW 2 (P1_13)	.737	.821	.069	11.967	.543
BAW 3 (P1_14)	.768	.866	.068	12.834	.590
BAW 4 (P1_15)	.859	1.012	.068	14.835	.738
BAW 5 (P1_16)	.833	1.000			.694
Brand functionality (BFU)					
BFU 1 (item 16)	.392	.552	.101	5.445	.154
BFU 2 (item 17)	.527	.692	.096	7.199	.278
BFU 3 (item 20)	.794	1.000			.630
BFU 4 (item 21)	.741	1.046	.109	9.617	.549
BFU 5 (item 22)	.845	1.160	.113	10.281	.714
Brand authenticity (BAU)					
BAU 1 (item 8)	.771	1.198	.167	7.156	.594
BAU 2 (item 9)	.655	.967	.144	6.720	.429
BAU 3 (item 27)	.654	1.000			.428
Brand attentiveness (BAT)					
BAT 1 (item 32)	.628	1.000			.394
BAT 2 (item 33)	.575	1.100	.173	6.348	.331
BAT 3 (item 34)	.772	1.250	.177	7.079	.596
BAT 4 (item 35)	.674	1.080	.152	7.084	.454
Brand resonance (BRE)					
BRE 1 (P2_1)	.657	1.000			.432
BRE 2 (P2_2)	.574	.833	.108	7.693	.329
BRE 3 (P2_3)	.748	1.097	.138	7.930	.560
BRE 4 (P2_4)	.852	1.333	.165	8.067	.726
BRE 5 (P2_5)	.785	1.251	.163	7.698	.616
BRE 6 (P2_6)	.417	.680	.127	5.349	.174
$\chi^2 (193, N=215) = 216.419, p = .119; CFI = .989, TLI = .986, RMSEA = .024$					
All factor loadings are significant ($p < .05$).					

Figure 5.14: SME brand equity model in case of consumers with low brand engagement level



$\chi^2 (193, N=215) = 216.419, p = .119$ CFI = .989 TLI = .986 RMSEA = .024
 Note: All estimates are significant ($p < .05$).

Table 5.50: Summary of SMEBE model invariance testing for consumers with the different brand engagement level

Model Description	Groups	Comparative model	χ^2	<i>df</i>	$\Delta\chi^2$	Δdf	Statistical significance
1. Hypothesized model (Model 1)	High brand engagement, low brand engagement	-	803.851	438	-	-	-
2. Factor loadings, variances, and covariances constrained equal	High brand engagement, low brand engagement	Model 1	873.585	465	69.734	27	$p < .05$
3. Factor loadings constrained equal	High brand engagement, low brand engagement	Model 1	817.381	459	13.53	21	NS

Part 6 Relationship of SME brand equity and consumer response factors

To understand the relationship of SME brand equity and consumers' brand responses, the researcher chose three variables that are suitable for the SME setting. All consumer responses studied here included brand preference, brand loyalty, and word of mouth.

The relationship of SME brand equity and three consumer response variables was examined in the context of three business sectors including manufacturing (see Figure 5.6.1), service (see Figure 5.6.2), and trade (see Figure 5.6.3) SMEs. The data for each industry were 184 customers assessing the SME brand equity of a selected brand. Tofusan, Santa fe', and Eveandboy were chosen for the manufacturing, service, and trade sector, respectively. The descriptive statistics and the correlation matrix of the three brands' SEM models were provided here for the replication of the future research (Table 5.51 and Table 5.52 for Tofusan; Table 5.54 and Table 5.55 for Santa fe'; Table 5.57 and Table 5.58 for Eveandboy).

The structural equation modeling (SEM) was analyzed via the IBM SPSS AMOS 22. The quality model should have a significant Likelihood-ratio chi-square (P -value), less than .06 Root-mean-square error of approximation (RMSEA), and at least .95 Comparative fit index (CFI) (McCoach et al., 2013).

The findings showed that the structural equation models depicting the relationship of SME brand equity and consumer response factors of the three SME brands fitted well with the empirical evidence or the opinion of their customers (Tofusan: $\chi^2 (270, N=184) = 301.240, p = .093; CFI = .988, RMSEA = .025$ [see Table 5.53]) (Santa fe': $\chi^2 (247, N=184) = 276.888, p = .093; CFI = .993, RMSEA$

= .026 [see Table 5.56]) (Eveandboy: χ^2 (264, $N=184$) = 295.190, $p = .091$; CFI = .988, RMSEA = .025 [see Table 5.59]).

Since all three models were congruent with the empirical data, it can be concluded that SME brand equity could lead to consumer positive responses within the context of the manufacturing, service, and trade business.

In the case of the manufacturing brand, the consumer response variable most explained by SME brand equity is word of mouth. In particular, 65.9 percent of the variance of word of mouth was explained by Tofusan's brand equity ($R^2 = .659$).

In the setting of the service and trade SMEs, SME brand equity explained the variance of brand preference in the largest amount. Brand preference's variance was explained by SME brand equity 84.1 percent and 57.6 percent in the case of Santa fe' ($R^2 = .841$) and Eveandboy ($R^2 = .576$), respectively.

Table 5.51: Descriptive statistics of the selected manufacturing SME's brand equity and its consumer response factors (Tofusan)

Variable	Min	Max	M	SD	Sk	Ku	CV
SME brand equity	1.74	5.00	3.17	.571	.470	.433	.18
Brand awareness $\alpha = .882$	1.20	5.00	3.06	.788	.261	-.063	.26
Brand...is familiar. (P1_12)	1	5	3.16	.913	.118	.108	.29
Brand...is well known. (P1_13)	1	5	3.15	.899	.060	-.082	.29
Brand...is visible. (P1_14)	1	5	3.18	1.048	.008	-.530	.33
Brand...is heard a lot. (P1_15)	1	5	2.94	.948	.159	-.282	.32
Brand...is famous. (P1_16)	1	5	2.88	.968	.243	-.356	.34
Brand functionality $\alpha = .779$	1.80	5.00	3.30	.658	.080	-.489	.20
The brand's products/ services are safe. (item 16)	1	5	3.80	.890	-.498	.052	.23
The brand offers quality product/service. (item 17)	2	5	3.52	.816	-.114	-.481	.23
The brand's products and services are actually useful. (item 20)	1	5	3.15	.874	.245	-.508	.28
The brand's marketing claims are accurate. (item 21)	1	5	2.97	.972	.163	-.347	.33
The brand maintains the quality of its product/service. (item 22)	1	5	3.06	.953	.186	-.340	.31
Brand authenticity $\alpha = .743$	1.00	5.00	3.04	.768	.216	-.254	.25
The brand is famous for its product/service. (item 8)	1	5	3.01	.958	.167	-.404	.32
The brand is the original of the particular product/ service. (item 9)	1	5	3.02	.941	.235	-.262	.31
The brand gives you an experience you never had before. (item 27)	1	5	3.10	.936	-.035	-.319	.30
Brand attentiveness $\alpha = .794$	1.50	5.00	3.16	.685	.169	-.143	.22
The brand keeps your privacy. (item 32)	1	5	3.21	.830	.176	-.028	.26
The brand has post-purchase service. (item 33)	1	5	3.20	.880	-.015	-.371	.27
The brand gives you the best offer. (item 34)	1	5	3.15	.886	-.208	-.195	.28
The brand has many communication channels. (item 35)	1	5	3.10	.888	.233	-.485	.29
Brand resonance $\alpha = .868$	1.00	5.00	3.19	.720	.051	.307	.23
I would like to buy brand... (P2_1)	1	5	3.46	.916	-.430	-.124	.26
I consider myself to be loyal to brand... (P2_2)	1	5	3.18	.915	-.061	.076	.29
I am willing to recommend brand... to my friends. (P2_3)	1	5	3.11	.874	-.015	.092	.28
I am used to brand... (P2_4)	1	5	3.14	.963	-.016	-.528	.31
Brand...would be my first choice. (P2_5)	1	5	2.98	.941	.243	-.217	.32
I will not buy other brands if brand...is available at the store. (P2_6)	1	5	3.26	.950	-.184	-.322	.29

Table 5.51:--continued

Variable	Min	Max	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>CV</i>
Consumer Response factors							
Brand preference (BPR) $\alpha = .832$	1.00	5.00	3.14	.723	-.065	.634	.23
I think brand ... is superior to other competing brands. (P2_7)	1	5	3.18	.973	-.151	-.200	.31
I prefer brand ... (P2_8)	1	5	3.15	.905	.007	-.212	.29
When considering purchasing ..., I would consider brand ... first. (P2_9)	1	5	3.06	.953	.071	-.229	.31
I am not interested in trying other brands. (P2_10)	1	5	3.19	.900	-.158	-.107	.28
I will not replace brand ... with other brands. (P2_11)	1	5	3.12	.945	-.006	-.100	.30
Brand loyalty (BLO) $\alpha = .809$	1.00	5.00	3.06	.805	.103	-.355	.26
I consider myself to be loyal to brand ... (P2_12)	1	5	3.09	.933	-.023	-.475	.30
Brand...would be my first choice. (P2_13)	1	5	3.11	.963	.151	-.654	.31
I will not buy other brands if brand ...is available at the store. (P2_14)	1	5	2.98	.944	.269	-.504	.32
Word of mouth (BWO) $\alpha = .760$	1.75	5.00	3.34	.692	.221	-.345	.21
I encourage friends and family to buy brand ... (P2_15)	1	5	2.93	1.030	.173	-.425	.35
I recommend brand ...whenever anyone seeks my advice. (P2_16)	1	5	3.83	.861	-.497	.222	.22
If the brand has been mentioned in a conversation, I would recommend brand ... (P2_17)	2	5	3.40	.863	-.003	-.671	.25
I have actually recommended brand ...to my friends or family or both. (P2_18)	1	5	3.21	.864	.447	-.102	.27
<i>N</i> = 184							

Table 5.52: --continued

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26		
Brand resonance																												
18.P2_1	.292	.418	.396	.504	.443	.231	.180	.281	.302	.438	.386	.413	.298	.299	.353	.197	.274	-	-	-	-	-	-	-	-	-	-	
19.P2_2	.280	.319	.375	.418	.457	.265	.263	.376	.313	.439	.416	.357	.382	.390	.369	.317	.321	.717	-	-	-	-	-	-	-	-	-	
20.P2_3	.364	.354	.372	.371	.403	.168	.181	.393	.364	.425	.403	.383	.341	.323	.341	.331	.282	.545	.638	-	-	-	-	-	-	-	-	
21.P2_4	.353	.359	.483	.482	.464	.152	.209	.410	.419	.438	.449	.389	.404	.327	.374	.386	.298	.412	.537	.690	-	-	-	-	-	-	-	
22.P2_5	.345	.376	.422	.452	.471	.171	.250	.456	.334	.422	.394	.365	.331	.328	.336	.404	.290	.373	.494	.614	.733	-	-	-	-	-	-	
23.P2_6	.292	.418	.396	.504	.443	.338	.294	.249	.215	.273	.399	.349	.242	.307	.285	.174	.223	.412	.431	.361	.404	.520	-	-	-	-	-	
Consumer response factors																												
24.BPref	.445	.448	.361	.445	.448	.250	.282	.424	.478	.455	.510	.383	.466	.423	.380	.371	.330	.490	.591	.633	.608	.607	.533	-	-	-	-	-
25.BLoy	.438	.433	.344	.438	.433	.197	.212	.419	.426	.470	.486	.438	.512	.324	.368	.408	.320	.475	.579	.614	.588	.615	.363	.665	-	-	-	
26.Wom	.454	.427	.400	.454	.427	.345	.385	.455	.432	.443	.332	.358	.439	.311	.359	.360	.354	.292	.429	.534	.491	.498	.279	.521	.613	-	-	

All correlations are significant ($p < .05$).

BPref = Brand preference; BLoy = Brand loyalty; Wom = Word-of-mouth

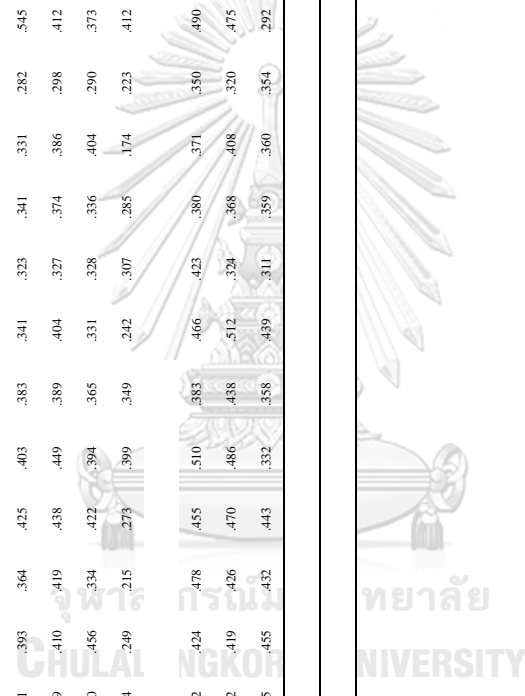


Table 5.53: Structural equation model of Tofusan's brand equity and its consumer response factors

Variable	$\hat{\beta}$	<i>E</i>	<i>S.E.</i>	<i>t</i>	<i>R</i> ²
<i>Second-order confirmatory factor analysis</i>					
Components of SME brand equity (SMEBE)					
Brand awareness (BAW)	.731	.590	.063	9.340	.534
Brand functionality (BFU)	.770	.475	.057	8.284	.593
Brand authenticity (BAU)	.822	.443	.061	7.234	.676
Brand attentiveness (BAT)	.694	.411	.055	7.448	.482
Brand resonance (BRE)	.897	.509	.061	8.272	.805
<i>First-order confirmatory factor analysis</i>					
Brand awareness (BAW)					
BAW 1 (P1_12)	.623	.454	.114	3.968	.388
BAW 2 (P1_13)	.685	.540	.101	5.356	.469
BAW 3 (P1_14)	.813	1.000	-	-	.661
BAW 4 (P1_15)	.853	1.204	.132	9.141	.728
BAW 5 (P1_16)	.836	1.251	.131	9.533	.699
Brand functionality (BFU)					
BFU 1 (item 16)	.319	.454	.114	3.968	.102
BFU 2 (item 17)	.412	.540	.101	5.356	.170
BFU 3 (item 20)	.709	1.000	-	-	.503
BFU 4 (item 21)	.766	1.204	.132	9.141	.587
BFU 5 (item 22)	.813	1.251	.131	9.533	.661
Brand authenticity (BAU)					
BAU 1 (item 8)	.798	1.410	.184	7.654	.637
BAU 2 (item 9)	.745	1.290	.174	7.401	.555
BAU 3 (item 27)	.583	1.000	-	-	.340
Brand attentiveness (BAT)					
BAT 1 (item 32)	.717	1.000	-	-	.514
BAT 2 (item 33)	.780	1.155	.135	8.583	.608
BAT 3 (item 34)	.609	.894	.126	7.121	.371
BAT 4 (item 35)	.602	.894	.127	7.015	.362
Brand resonance (BRE)					
BRE 1 (P2_1)	.617	1.000	-	-	.381
BRE 2 (P2_2)	.729	1.163	.104	11.181	.531
BRE 3 (P2_3)	.839	1.289	.147	8.761	.704
BRE 4 (P2_4)	.790	1.326	.157	8.464	.624
BRE 5 (P2_5)	.738	1.216	.151	8.053	.545
BRE 6 (P2_6)	.544	1.000	-	-	.296

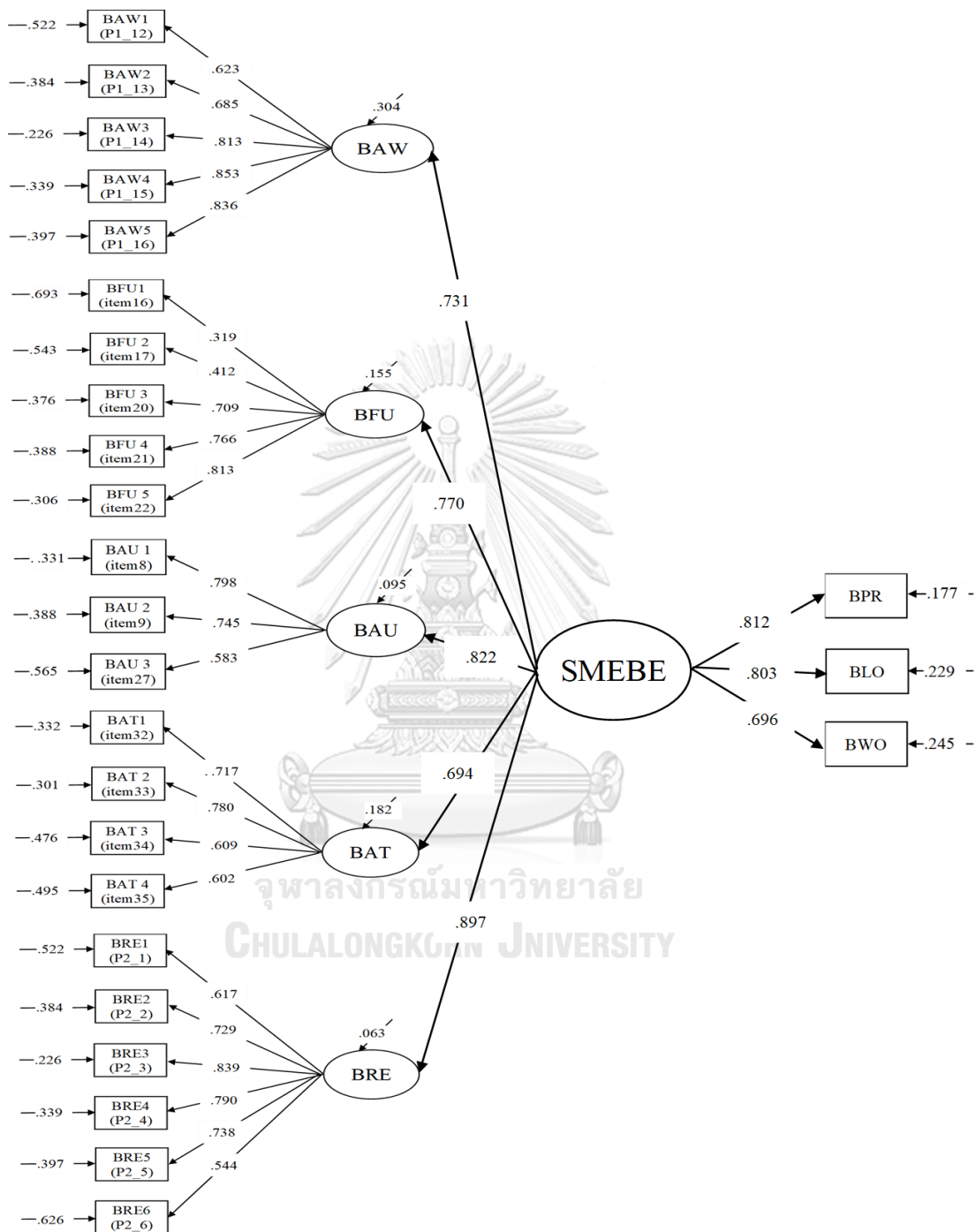
All factor loadings are significant ($p < .05$).

Table 5.53: --continued

Effects of SME brand equity on consumer response factors				
IV DV	SME brand equity (SMEBE)			<i>R</i> ²
	Total effect	Indirect effect	Direct effect	
Brand preference (BPR)	.696	-	.696	.484
	.585	-	.585	
Brand loyalty (BLO)	.803	-	.803	.645
	.645	-	.645	
Word-of-mouth (BWO)	.812	-	.812	.659
	.480	-	.480	

$\chi^2(270, N=184) = 301.240, p = .093; CFI = .988, TLI = .985, RMSEA = .025$
 All standardized effects are significant ($p < .05$).
 IV = Independent variable; DV = Dependent variable
 First line = Standardized estimates
 Second line = Estimates

Figure 5.15: Structural equation model of Tofusan’s brand equity and its consumer response factors



$\chi^2 (270, N=184) = 301.240, p = .093; CFI = .988, TLI = .985, RMSEA = .025$

Note: All estimates are significant ($p < .05$).

Table 5.54: Descriptive statistics of the selected service SME's brand equity and its consumer response factors (Santa fe')

Variable	Min	Max	M	SD	Sk	Ku	CV
SME brand equity	1.00	5.00	3.46	.622	1.00	2.564	.18
Brand awareness $\alpha = .923$	1.00	5.00	3.51	.766	-.389	1.079	.22
Brand...is familiar. (P1_12)	1	5	3.47	.855	-.074	.137	.25
Brand...is well known. (P1_13)	1	5	3.62	.840	-.541	.799	.23
Brand...is visible. (P1_14)	1	5	3.54	.822	-.391	.451	.23
Brand...is heard a lot. (P1_15)	1	5	3.48	.935	-.419	-.003	.27
Brand...is famous. (P1_16)	1	5	3.42	.926	-.401	-.067	.27
Brand functionality $\alpha = .880$	1.00	5.00	3.54	.663	-.592	2.128	.19
The brand's products/ services are safe. (item 16)	1	5	3.76	.766	-.520	.944	.20
The brand offers quality product/service. (item 17)	1	5	3.59	.798	-.614	1.148	.22
The brand's products and services are actually useful. (item 20)	1	5	3.42	.820	-.204	.004	.24
The brand's marketing claims are accurate. (item 21)	1	5	3.46	.809	-.453	.379	.23
The brand maintains the quality of its product/service. (item 22)	1	5	3.47	.836	-.509	.490	.24
Brand authenticity $\alpha = .800$	1.00	5.00	3.42	.701	-.585	1.297	.21
The brand is famous for its product/service. (item 8)	1	5	3.46	.781	-.167	.298	.23
The brand is the original of the particular product/ service. (item 9)	1	5	3.42	.819	-.428	.509	.24
The brand gives you an experience you never had before. (item 27)	1	5	3.38	.885	-.492	.075	.26
Brand attentiveness $\alpha = .835$	1.00	5.00	3.38	.643	-.664	1.861	.19
The brand keeps your privacy. (item 32)	1	5	3.44	.737	-.496	.932	.21
The brand has post-purchase service. (item 33)	1	5	3.35	.802	-.456	.430	.24
The brand gives you the best offer. (item 34)	1	5	3.36	.798	-.361	.253	.24
The brand has many communication channels. (item 35)	1	5	3.37	.806	-.391	.188	.24
Brand resonance $\alpha = .911$	1.00	5.00	3.37	.714	-.636	1.410	.21
I would like to buy brand... (P2_1)	1	5	3.46	.767	-.403	.728	.22
I consider myself to be loyal to brand... (P2_2)	1	5	3.35	.843	-.580	.816	.25
I am willing to recommend brand... to my friends. (P2_3)	1	5	3.33	.826	-.273	.027	.25
I am used to brand... (P2_4)	1	5	3.36	.906	-.328	-.051	.27
Brand...would be my first choice. (P2_5)	1	5	3.42	.908	-.486	.219	.27
I will not buy other brands if brand...is available at the store. (P2_6)	1	5	3.31	.891	-.371	.321	.27

Table 5.54:--continued

Variable	Min	Max	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>CV</i>
Consumer Response factors							
Brand preference (BPR) $\alpha = .893$	1.00	5.00	3.30	.750	-.726	1.188	.23
I think brand ... is superior to other competing brands. (P2_7)	1	5	3.42	.845	-.646	.734	.25
I prefer brand ... (P2_8)	1	5	3.31	.834	-.522	.517	.25
When considering purchasing ..., I would consider brand ... first. (P2_9)	1	5	3.34	.884	-.477	.612	.26
I am not interested in trying other brands. (P2_10)	1	5	3.22	.946	-.617	-.064	.29
I will not replace brand ... with other brands. (P2_11)	1	5	3.20	.963	-.562	.058	.30
Brand loyalty (BLO) $\alpha = .866$	1.00	5.00	3.28	.819	-.645	.769	.25
I consider myself to be loyal to brand ... (P2_12)	1	5	3.23	.930	-.553	.203	.29
Brand...would be my first choice. (P2_13)	1	5	3.33	.914	-.533	.253	.27
I will not buy other brands if brand ...is available at the store. (P2_14)	1	5	3.28	.921	-.423	.102	.28
Word of mouth (BWO) $\alpha = .831$	1.00	5.00	3.35	.716	-.666	1.267	.21
I encourage friends and family to buy brand ... (P2_15)	1	5	3.31	.915	-.396	.080	.28
I recommend brand ...whenever anyone seeks my advice. (P2_16)	1	5	3.45	.828	-.659	1.034	.24
If the brand has been mentioned in a conversation, I would recommend brand ... (P2_17)	1	5	3.33	.865	-.750	.598	.26
I have actually recommended brand ...to my friends or family or both. (P2_18)	1	5	3.32	.906	-.189	.368	.27
<i>N</i> = 184							

Table 5.55: --continued

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26		
Brand resonance																												
18. P2_1	.560	.649	.579	.521	.572	.540	.542	.577	.552	.522	.626	.616	.483	.561	.433	.539	.539	-	-	-	-	-	-	-	-	-	-	
19. P2_2	.464	.427	.434	.434	.409	.436	.486	.597	.548	.460	.492	.687	.551	.531	.577	.547	.531	.620	-	-	-	-	-	-	-	-	-	
20. P2_3	.620	.645	.589	.506	.573	.445	.424	.599	.599	.619	.527	.561	.567	.495	.485	.554	.546	.623	.600	-	-	-	-	-	-	-	-	
21. P2_4	.619	.623	.605	.613	.599	.360	.440	.574	.596	.539	.516	.599	.551	.474	.466	.528	.513	.557	.641	.724	-	-	-	-	-	-	-	
22. P2_5	.539	.544	.524	.514	.548	.365	.368	.620	.617	.544	.500	.608	.515	.467	.474	.505	.452	.564	.641	.674	.720	-	-	-	-	-	-	
23. P2_6	.474	.521	.517	.377	.469	.429	.457	.567	.561	.477	.557	.563	.459	.557	.475	.517	.471	.647	.617	.595	.552	.697	-	-	-	-	-	
Consumer response factors																												
24. BPref	.520	.560	.522	.462	.508	.391	.482	.650	.627	.559	.537	.707	.615	.556	.555	.561	.538	.627	.751	.664	.672	.707	.706	-	-	-	-	-
25. BLoy	.486	.472	.453	.407	.435	.412	.477	.649	.576	.521	.482	.704	.643	.519	.539	.570	.540	.581	.689	.629	.676	.740	.701	.842	-	-	-	-
26. Wom	.580	.576	.531	.492	.494	.558	.605	.656	.626	.584	.645	.680	.629	.589	.517	.627	.589	.665	.677	.704	.711	.677	.688	.743	.761	-	-	-

All correlations are significant (p < .05).

BPref = Brand preference; BLoy = Brand loyalty; Wom = Word-of-mouth

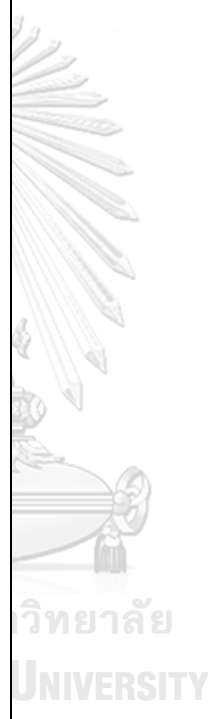


Table 5.56: Structural equation model of Santa fe's brand equity and its consumer response factors

Variable	$\hat{\beta}$	<i>E</i>	<i>S.E.</i>	<i>t</i>	<i>R</i> ²
<i>Second-order confirmatory factor analysis</i>					
Components of SME brand equity (SMEBE)					
Brand awareness (BAW)	.793	.600	.058	10.364	.629
Brand functionality (BFU)	.917	.637	.051	12.429	.841
Brand authenticity (BAU)	.983	.641	.057	11.297	.966
Brand attentiveness (BAT)	.931	.499	.048	10.456	.867
Brand resonance (BRE)	.949	.586	.047	12.361	.901
<i>First-order confirmatory factor analysis</i>					
Brand awareness (BAW)					
BAW 1 (P1_12)	.797	.893	.071	12.629	.635
BAW 2 (P1_13)	.891	.982	.066	14.877	.794
BAW 3 (P1_14)	.833	.901	.067	13.408	.694
BAW 4 (P1_15)	.799	.983	.068	14.415	.638
BAW 5 (P1_16)	.822	1.000			.676
Brand functionality (BFU)					
BFU 1 (item 16)	.642	.689	.072	9.527	.412
BFU 2 (item 17)	.693	.789	.075	10.535	.480
BFU 3 (item 20)	.839	1.000			.704
BFU 4 (item 21)	.843	.979	.070	13.958	.711
BFU 5 (item 22)	.770	.910	.074	12.247	.593
Brand authenticity (BAU)					
BAU 1 (item 8)	.748	.890	.087	10.269	.560
BAU 2 (item 9)	.810	1.014	.090	11.235	.656
BAU 3 (item 27)	.740	1.000			.548
Brand attentiveness (BAT)					
BAT 1 (item 32)	.732	1.000			.536
BAT 2 (item 33)	.693	1.029	.113	9.101	.480
BAT 3 (item 34)	.744	1.101	.113	9.705	.554
BAT 4 (item 35)	.724	1.082	.115	9.442	.524
Brand resonance (BRE)					
BRE 1 (P2_1)	.806	1.000			.650
BRE 2 (P2_2)	.788	1.071	.088	12.211	.621
BRE 3 (P2_3)	.798	1.066	.086	12.433	.637
BRE 4 (P2_4)	.831	1.213	.103	11.721	.691
BRE 5 (P2_5)	.824	1.209	.102	11.887	.679
BRE 6 (P2_6)	.793	1.141	.092	12.341	.629

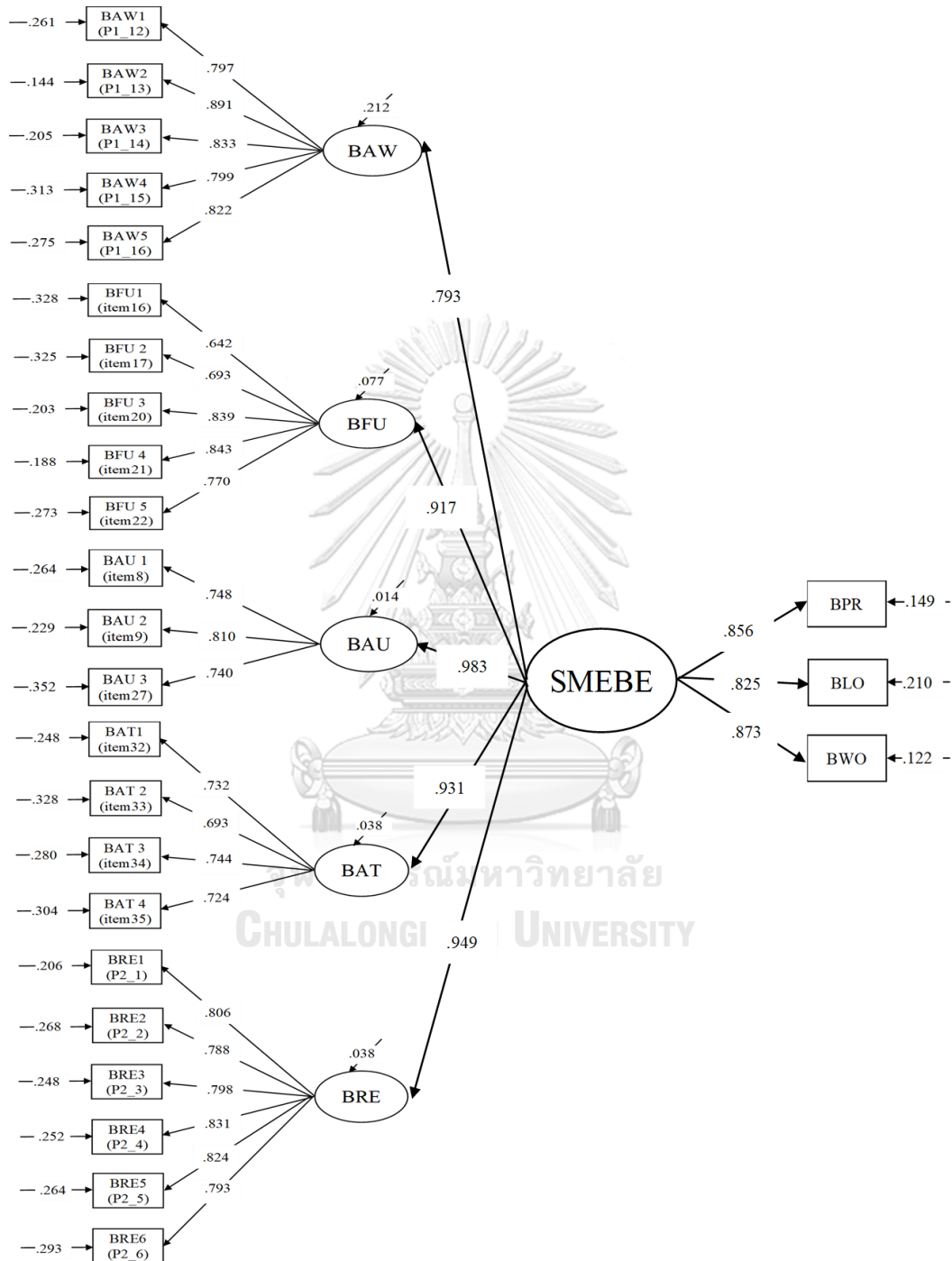
All factor loadings are significant ($p < .05$).

Table 5.56: --continued

Effects of SME brand equity on consumer response factors				
IV DV	SME brand equity (SMEBE)			<i>R</i> ²
	Total effect	Indirect effect	Direct effect	
Brand preference (BPR)	.917 .637	-	.917 .637	.841
Brand loyalty (BLO)	.825 .668	-	.825 .668	.681
Word-of-mouth (BWO)	.873 .624	-	.873 .624	.762

$\chi^2(247, N=184) = 276.888, p = .093; CFI = .993, TLI = .990, RMSEA = .026$
 All standardized effects are significant ($p < .05$).
 IV = Independent variable; DV = Dependent variable
 First line = Standardized estimates
 Second line = Estimates

Figure 5.16: Structural equation model of Santa fe’s brand equity and its consumer response factors



$\chi^2 (247, N=184) = 276.888, p = .093; CFI = .993, TLI = .990, RMSEA = .026$

Note: All estimates are significant ($p < .05$).

Table 5.57: Descriptive statistics of the selected trade SME's brand equity and its consumer response factors (Eveandboy)

Variable	Min	Max	M	SD	Sk	Ku	CV
SME brand equity	1.91	4.70	3.40	.545	-.024	-.120	.16
Brand awareness $\alpha = .846$	1.60	5.00	3.30	.695	-.057	-.239	.21
Brand...is familiar. (P1_12)	1	5	3.42	.792	-.229	.154	.23
Brand...is well known. (P1_13)	1	5	3.37	.826	-.017	-.299	.25
Brand...is visible. (P1_14)	1	5	3.21	.888	.008	-.375	.28
Brand...is heard a lot. (P1_15)	1	5	3.30	.913	-.107	-.455	.28
Brand...is famous. (P1_16)	1	5	3.25	.988	-.039	-.432	.30
Brand functionality $\alpha = .837$	1.80	5.00	3.44	.657	-.197	.027	.19
The brand's products/ services are safe. (item 16)	2	5	3.49	.761	.319	-.323	.22
The brand offers quality product/service. (item 17)	2	5	3.48	.823	.040	-.507	.24
The brand's products and services are actually useful. (item 20)	1	5	3.34	.898	-.228	-.165	.27
The brand's marketing claims are accurate. (item 21)	1	5	3.52	.849	-.349	-.043	.24
The brand maintains the quality of its product/service. (item 22)	2	5	3.39	.854	.016	-.647	.25
Brand authenticity $\alpha = .788$	1.33	5.00	3.41	.748	-.260	-.276	.22
The brand is famous for its product/service. (item 8)	1	5	3.46	.892	-.164	-.334	.26
The brand is the original of the particular product/ service. (item 9)	1	5	3.42	.878	-.354	-.142	.26
The brand gives you an experience you never had before. (item 27)	1	5	3.34	.910	-.073	-.530	.27
Brand attentiveness $\alpha = .748$	1.50	4.75	3.49	.610	-.382	.576	.17
The brand keeps your privacy. (item 32)	1	5	3.32	.856	-.141	-.600	.26
The brand has post-purchase service. (item 33)	1	5	3.82	.813	-.952	1.914	.21
The brand gives you the best offer. (item 34)	1	5	3.47	.746	-.127	.556	.21
The brand has many communication channels. (item 35)	1	5	3.33	.812	-.184	.512	.24
Brand resonance $\alpha = .833$	1.17	4.83	3.40	.643	-.188	.806	.19
I would like to buy brand... (P2_1)	1	5	3.66	.827	-.239	.156	.23
I consider myself to be loyal to brand... (P2_2)	1	5	3.48	.816	-.313	.705	.23
I am willing to recommend brand... to my friends. (P2_3)	1	5	3.30	.883	.050	.092	.27
I am used to brand... (P2_4)	1	5	3.32	.905	-.219	-.267	.27
Brand...would be my first choice. (P2_5)	1	5	3.28	.926	-.079	-.174	.28
I will not buy other brands if brand...is available at the store. (P2_6)	1	5	3.34	.860	-.256	-.167	.26

Table 5.57:--continued

Variable	Min	Max	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>	<i>CV</i>
Consumer Response factors							
Brand preference (BPR) $\alpha = .849$	1.00	5.00	3.33	.709	-.273	.163	.21
I think brand ... is superior to other competing brands. (P2_7)	1	5	3.35	.886	-.506	.169	.26
I prefer brand ... (P2_8)	1	5	3.38	.915	-.252	-.222	.27
When considering purchasing ..., I would consider brand ... first. (P2_9)	1	5	3.26	.955	-.152	-.165	.29
I am not interested in trying other brands. (P2_10)	1	5	3.34	.828	-.304	.304	.25
I will not replace brand ... with other brands. (P2_11)	1	5	3.33	.907	-.204	-.043	.27
Brand loyalty (BLO) $\alpha = .838$	1.00	5.00	3.22	.800	-.408	.158	.25
I consider myself to be loyal to brand ... (P2_12)	1	5	3.21	.918	-.165	-.206	.29
Brand...would be my first choice. (P2_13)	1	5	3.22	.935	-.256	-.041	.29
I will not buy other brands if brand ...is available at the store. (P2_14)	1	5	3.24	.910	-.361	.119	.28
Word of mouth (BWO) $\alpha = .786$	1.00	5.00	3.49	.661	-.791	1.413	.19
I encourage friends and family to buy brand ... (P2_15)	1	5	3.83	.795	-.676	1.008	.21
I recommend brand ...whenever anyone seeks my advice. (P2_16)	1	5	3.56	.808	-.605	.664	.23
If the brand has been mentioned in a conversation, I would recommend brand ... (P2_17)	1	5	3.26	.841	-.191	.083	.26
I have actually recommended brand ...to my friends or family or both. (P2_18)	1	5	3.32	.934	-.344	-.196	.28
<i>N</i> = 184							

Table 5.58: --continued

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26		
Brand resonance																												
18. P2_1	.567	.295	.319	.373	.365	.301	.270	.259	.288	.317	.323	.296	.372	.285	.137	.150	.200	-	-	-	-	-	-	-	-	-	-	
19. P2_2	.243	.220	.404	.260	.208	.185	.305	.392	.331	.397	.314	.399	.409	.309	.197	.273	.227	.526	-	-	-	-	-	-	-	-	-	
20. P2_3	.313	.335	.465	.411	.459	.397	.396	.374	.281	.288	.254	.435	.498	.429	.113	.276	.349	.476	.519	-	-	-	-	-	-	-	-	
21. P2_4	.349	.319	.395	.421	.419	.328	.376	.445	.385	.308	.360	.402	.472	.419	.144	.218	.385	.457	.503	.675	-	-	-	-	-	-	-	
22. P2_5	.340	.330	.395	.367	.450	.308	.420	.510	.456	.410	.340	.446	.497	.397	.088	.270	.393	.358	.545	.560	.561	-	-	-	-	-	-	
23. P2_6	.310	.298	.336	.377	.310	.207	.308	.392	.385	.429	.384	.400	.401	.414	.198	.294	.337	.232	.323	.210	.338	.532	-	-	-	-	-	
Consumer response factors																												
24. BPref	.384	.328	.527	.507	.514	.304	.380	.521	.528	.528	.528	.521	.564	.550	.217	.309	.599	.442	.458	.437	.452	.518	.568	-	-	-	-	-
25. BLoy	.398	.263	.468	.407	.427	.198	.343	.525	.558	.447	.464	.464	.503	.504	.260	.334	.398	.321	.481	.395	.464	.563	.542	.781	-	-	-	
26. Wom	.265	.161	.345	.219	.259	.204	.279	.362	.398	.361	.402	.402	.384	.418	.269	.354	.400	.240	.433	.388	.407	.377	.375	.549	.596	-	-	

All correlations are significant (p < .05).

BPref = Brand preference; BLoy = Brand loyalty; Wom = Word-of-mouth

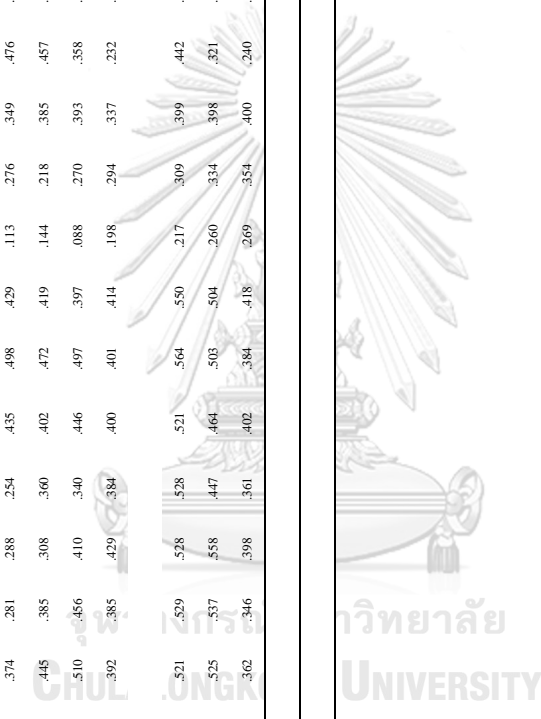


Table 5.59: Structural equation model of Eveandboy's brand equity and its consumer response factors

Variable	$\hat{\beta}$	<i>E</i>	<i>S.E.</i>	<i>t</i>	<i>R</i> ²
<i>Second-order confirmatory factor analysis</i>					
Components of SME brand equity (SMEBE)					
Brand awareness (BAW)	.797	.668	.064	10.502	.635
Brand functionality (BFU)	.892	.629	.058	10.913	.796
Brand authenticity (BAU)	.990	.704	.058	12.155	.980
Brand attentiveness (BAT)	.936	.622	.056	11.142	.876
Brand resonance (BRE)	.817	.341	.052	6.578	.667
<i>First-order confirmatory factor analysis</i>					
Brand awareness (BAW)					
BAW 1 (P1_12)	.557	.521	.067	7.815	.310
BAW 2 (P1_13)	.633	.623	.068	9.168	.401
BAW 3 (P1_14)	.726	.767	.069	11.042	.527
BAW 4 (P1_15)	.809	.879	.069	12.768	.654
BAW 5 (P1_16)	.850	1.000			.722
Brand functionality (BFU)					
BFU 1 (item 16)	.538	.581	.080	7.248	.289
BFU 2 (item 17)	.648	.752	.081	9.269	.420
BFU 3 (item 20)	.794	1.000			.630
BFU 4 (item 21)	.796	.952	.085	11.253	.634
BFU 5 (item 22)	.708	.857	.086	9.918	.501
Brand authenticity (BAU)					
BAU 1 (item 8)	.666	.832	.089	9.312	.444
BAU 2 (item 9)	.700	.861	.087	9.882	.490
BAU 3 (item 27)	.784	1.000			.615
Brand attentiveness (BAT)					
BAT 1 (item 32)	.778	1.000			.605
BAT 2 (item 33)	.276	.337	.097	3.469	.076
BAT 3 (item 34)	.477	.535	.088	6.107	.228
BAT 4 (item 35)	.614	.754	.094	8.022	.377
Brand resonance (BRE)					
BRE 1 (P2_1)	.505	1.000			.255
BRE 2 (P2_2)	.602	1.177	.157	7.519	.362
BRE 3 (P2_3)	.805	1.685	.241	6.997	.648
BRE 4 (P2_4)	.792	1.714	.245	6.990	.627
BRE 5 (P2_5)	.738	1.625	.235	6.928	.545
BRE 6 (P2_6)	.662	1.345	.221	6.092	.438

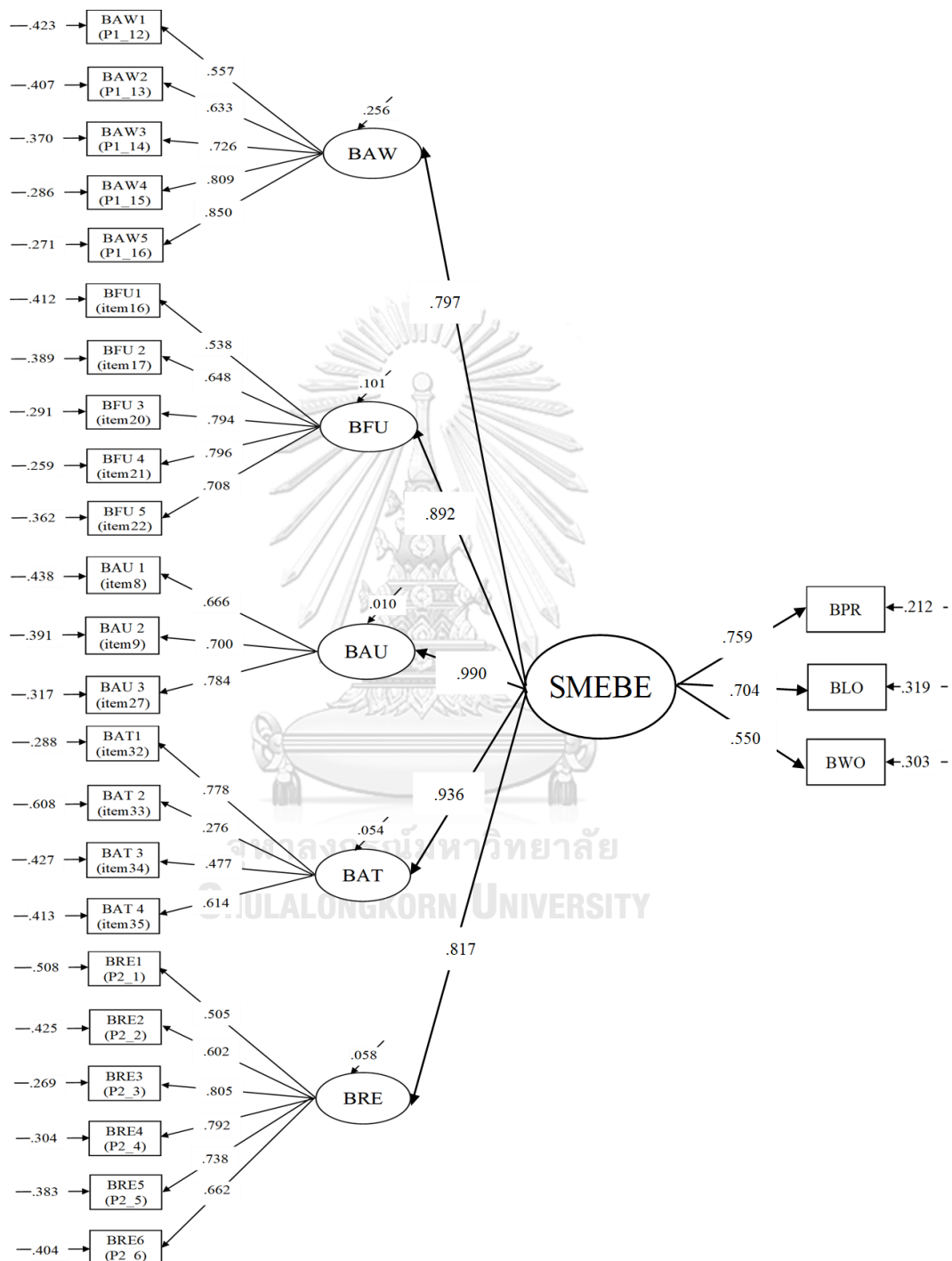
All factor loadings are significant ($p < .05$).

Table 5.59: --continued

<u>Effects of SME brand equity on consumer response factors</u>				
IV DV	SME brand equity (SMEBE)			<i>R</i> ²
	Total effect	Indirect effect	Direct effect	
Brand preference (BPR)	.759	-	.759	.576
	.537		.537	
Brand loyalty (BLO)	.704	-	.704	.496
	.561		.561	
Word-of-mouth (BWO)	.550	-	.550	.303
	.363		.363	

$\chi^2(264, N=184) = 295.190, p = .091; CFI = .988, TLI = .985, RMSEA = .025$
 All standardized effects are significant ($p < .05$).
 IV = Independent variable; DV = Dependent variable
 First line = Standardized estimates
 Second line = Estimates

Table 5.60: Structural equation model of Eveandboy's brand equity and its consumer response factors



$\chi^2 (264, N=184) = 295.190, p = .091; CFI = .988, TLI = .985, RMSEA = .025$

Note: All estimates are significant ($p < .05$).

Chapter 6

Discussion

The two main purposes of this study were (1) The development of SME brand equity measurement model and (2) the examination of the relationship between SME brand equity and consumer response factors. Both qualitative and quantitative research were conducted to obtain a valid, reliable, and generalizable results summarized and reported in the beginning of this chapter. Based on the research findings, worth discussing issues were presented here in five parts as follows.

Part 1 Components of SME brand equity measurement model

Part 2 Construct of SME brand equity measurement model

Part 3 Application of SME brand equity measurement model across different business sectors

Part 4 Application of SME brand equity measurement model to consumers varying in their characteristics

Part 5 Relationship of SME brand equity and consumer response factors

Limitations, recommendations for the future research, and suggestions for the managerial application were also noted.

Summary of the findings

The first step of the study was carried on to get a pool of initial item of SME brand equity. Qualitative data from documents of forty awarded SME brands and actual consumers varying in their demographic characteristics were collected by three techniques including document analysis, semi-structured interview, and focus group. Finally, 41 initial items of SME brand equity obtained (see Table 6.1).

The items derived from the first step were analyzed by the exploratory and confirmatory factor analyses. After the respecification, the measurement model of SME brand equity developed in this study fits well with the empirical data (χ^2 [37, $N=419$] = 40.220, $p = .330$; CFI = .999, RMSEA = .014). The confirmatory construct of SME brand equity consisted of 12 items that can be grouped into three components defined as brand functionality, brand authenticity, and brand attentiveness (see Table 6.2).

Then, this study examined three competing models consisting of a second-order factor model, a causal model, and a causal model with relationships between dimensions. Among three competing models of SME brand equity, only the second-order factor model (Model 1) fitted with the data (χ^2 [37, $N=419$] = 40.220, $p = .330$; CFI = .999, RMSEA = .014). The causal model (Model 2) (χ^2 [85, $N=419$] = 574.045, $p = .000$; CFI = .868, RMSEA = .117) and the causal model with relationships between dimensions (Model 3) (χ^2 [36, $N=419$] = 58.221, $p = .011$; CFI = .992, RMSEA = .038) differed significantly from the empirical evidence.

According to the pattern of the best-fitting model, SME brand equity was set to be a second-order latent variable. The five first-order latent variables consisted of

brand functionality, brand authenticity, and brand attentiveness which were three components obtained from the confirmatory factor analysis, plus two dimensions including brand awareness and brand resonance for the theory testing purpose.

For the examination of measurement invariance across business sectors, the SME brand equity model was checked whether its factor loadings and factor patterns are invariant between manufacturing, service, and trade settings. The data for each group of business sectors were 184 customers assessing the SME brand equity of a specific brand. Tofusan, Santa fe', and Eveandboy were three SME brands selected by focus group and survey participants for the manufacturing, service, and trade sectors, respectively. The findings showed that three brands' SME brand equity models fit well with the empirical data or the opinion of their customers (Tofusan: χ^2 [204, $N=184$] = 210.241, $p = .367$; CFI = .997, RMSEA = .013) (Santa fe': χ^2 [194, $N=184$] = 219.594, $p = .100$; CFI = .992, RMSEA = .027) (Eveandboy: χ^2 [202, $N=184$] = 203.404, $p = .459$; CFI = .999, RMSEA = .037). Moreover, the SME brand equity measurement models of all three selected brands shared the same pattern of SME brand equity factors which can be interpreted as SME brand equity measurement model's configural invariance across the three different business sectors. The results of metric invariance testing indicated that item loadings on first-order and second-order factors measuring SME brand equity were partially equal across three business sectors (see Figure 6.1). These findings mean some items are the fundamental criteria customers adopted to assess the SME brand equity within every business context, but some items should be interpreted differently in each sector of SMEs.

Among individuals with different characteristics, the measurement invariance was performed in an overall manner. Mean was used as a cut-off value to split all

consumers into two groups which are the respondents who score high and those who score low on product involvement ($M = 3.54$), brand engagement ($M = 3.31$), and SME brand equity ($M = 3.25$). The findings showed that the SME brand equity model fitted well with the empirical data or the opinion of the six customer groups varying in the degree of SME brand equity (High: $\chi^2 [197, N=303] = 213.287, p = .203$; CFI = .992 RMSEA = .017, Low: $\chi^2 [193, N=249] = 221.865, p = .076$; CFI = .986, RMSEA = .025), product involvement (High: $\chi^2 [194, N=298] = 216.174, p = .132$, CFI = .993, RMSEA = .020, Low: $\chi^2 [188, N=222] = 211.952, p = .111$; CFI = .989, RMSEA = .024), and brand engagement (High: $\chi^2 [200, N=295] = 225.211, p = .107$, CFI = .990, RMSEA = .021, Low: $\chi^2 [193, N=215] = 216.419, p = .119$; CFI = .989, RMSEA = .024).

Further analysis showed that the SME brand equity measurement model was invariant among consumers with high and low SME brand equity, product involvement, and brand engagement. The metric invariance of SME brand equity measurement model can imply that consumers varying in the degree of SME brand equity, product involvement, and brand engagement interpreted the scale of SME brand equity in the same way. The valid, reliable, and generalizable SME brand equity measurement model developed in this study was presented in Table 6.3.

To understand the relationship of SME brand equity and consumers' brand responses, the researcher chose three variables that are suitable for the SME setting. All consumer responses that were studied here included brand preference, brand loyalty, and word of mouth. The findings showed that the structural equation models depicting the relationship of SME brand equity and consumer response factors of the three SME brands fitted well with the empirical evidence or the opinion of their

customers (Tofusan: χ^2 [270, $N=184$] = 301.240, $p = .093$; CFI = .988, RMSEA = .025) (Santa fe': χ^2 [247, $N=184$] = 276.888, $p = .0931$; CFI = .993, RMSEA = .026) (Eveandboy: χ^2 [264, $N=184$] = 295.190, $p = .091$; CFI = .988, RMSEA = .025). In the case of the manufacturing brand, the consumer response variable most explained by SME brand equity is word of mouth. In particular, 65.9 percent of the variance of word of mouth was explained by Tofusan's brand equity ($R^2 = .659$). In the setting of the service and trade SMEs, SME brand equity explained the variance of brand preference in the largest amount. Brand preference's variance was explained by SME brand equity 84.1 percent and 57.6 percent in the case of Santa fe' ($R^2 = .841$) and Eveandboy ($R^2 = .576$), respectively.

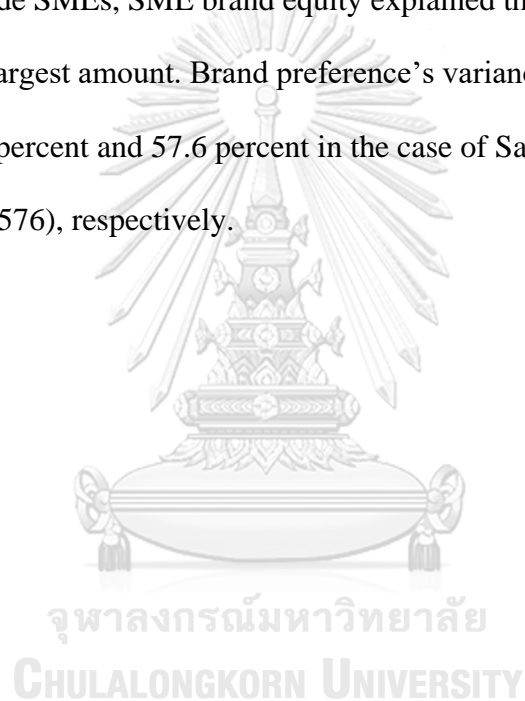


Table 6.1.: Initial items of SME brand equity obtained from the qualitative research

Item
1. The brand is unique. มีเอกลักษณ์ที่แตกต่างจากแบรนด์อื่น ๆ
2. The brand is the expert in its field. มีความเชี่ยวชาญในการผลิตสินค้า/บริการประเภทนั้น
3. The brand met certain quality standards. ผ่านการรับรองคุณภาพจากหน่วยงานที่น่าเชื่อถือ
4. The brand is famous for its product/service. โด่งดังในการผลิตสินค้า/บริการประเภทนั้น
5. The brand builds its product/service meticulously. สร้างสรรค์สินค้า/บริการอย่างดี เข้าถึงรายละเอียดของลูกค้า
6. The brand is involved in its local community. ช่วยสนับสนุนผู้คนในท้องถิ่น
7. The brand has a fresh appearance. มีความทันสมัย
8. The brand fits into your lifestyle. สอดคล้องกับการใช้ชีวิต (ไลฟ์สไตล์) ของคุณ
9. The brand creatively produces new product/service. มีสินค้า/บริการ ที่แปลกใหม่
10. The brand offers a wide variety of the particular product/service. มีสินค้า/บริการ ให้เลือกหลากหลาย
11. The brand's products/ services are safe. สินค้า/บริการ มีความปลอดภัย
12. The brand does not harm the environment. ไม่ทำลายสิ่งแวดล้อม
13. The brand determines reasonable pricing. สินค้า/บริการ มีคุณภาพเหมาะสมกับราคา
14. The brand provides helpful information on buying product/service. แนะนำข้อมูลที่เป็นประโยชน์ในการเลือกซื้อสินค้า/บริการ
15. The brand makes you happy. ทำให้คุณรู้สึกมีความสุขเมื่อใช้แบรนด์นี้
16. The brand offers quality product/service. สินค้า/บริการมีคุณภาพดี
17. The brand's products/services are worth buying. สินค้า/บริการ ทำให้คุณรู้สึกคุ้มค่า
18. The brand continuously improves itself. มีการพัฒนาอย่างต่อเนื่อง
19. The brand has product/service that impresses you. มีสินค้า/บริการ ที่คุณภูมิใจ
20. The brand's products and services are actually useful. สินค้า/บริการ มีประโยชน์ใช้งานได้จริง
21. The brand has something that cannot be found elsewhere. มีสิ่งที่เป็นแบรนด์อื่น ๆ ยังไม่มี
22. The brand gives you an experience you never had before. ทำให้คุณได้ประสบการณ์แปลกใหม่อย่างที่ไม่เคยได้รับมาก่อน
23. The brand exceeds your expectations. ทำให้คุณพอใจเกินความคาดหมาย
24. The brand is friendly. ให้ความรู้สึกเป็นกันเอง

Table 6.1: --continued

Item
25. The brand expresses its willingness to help. ให้ความช่วยเหลือคุณอย่างเต็มที่
26. The brand answers your questions frankly. ให้ข้อมูลเกี่ยวกับสินค้า/บริการตามความเป็นจริง
27. The brand keeps your privacy. รักษาความเป็นส่วนตัวของคุณ
28. The brand has post-purchase services, such as return and refund. มีบริการหลังการขาย เช่น ให้เปลี่ยนสินค้าหรือคืนเงิน
29. The brand responds positively to your special request. คุณสามารถปรับเปลี่ยนรูปแบบของสินค้า/บริการได้ตามคำสั่งซื้อ
30. The brand matches your taste. ตรงกับรสนิยมของคุณ
31. The brand's marketing claims are accurate. มีสินค้า/บริการ ที่ตรงตามคำโฆษณา
32. The brand maintains the quality of its product/service. รักษามาตรฐานของสินค้า/บริการ
33. The brand gives you the best offer. ให้สิทธิพิเศษคุณได้มากกว่าแบรนด์อื่น ๆ
34. It is convenient to purchase products/services of the brand. สินค้า/บริการ หาซื้อได้ง่าย
35. The brand is the original of the particular product/service. เป็นต้นตำรับของสินค้า/บริการชนิดนั้น
36. The brand uses customer feedback to improve its business. นำความคิดเห็นของลูกค้ามาปรับปรุงพัฒนา
37. The brand takes social responsibility to its heart. มีความรับผิดชอบต่อสังคม
38. You can easily communicate with the brand. มีช่องทางให้คุณติดต่อสื่อสารได้อย่างสะดวก
39. The brand does not harm the environment. ไม่ทำลายสิ่งแวดล้อม
40. The brand takes social responsibility to its heart. มีความรับผิดชอบต่อสังคม
41. The brand helps improve the society. ช่วยเหลือและทำประโยชน์ให้สังคม

Table 6.2: Confirmatory constructs of SME brand equity

Variable	Min	Max	M	SD	Sk	Ku	CV
Brand functionality $\alpha = .892$							
The brand's products/ services are safe. (item 16)	2	5	4.55	.656	-1.195	.439	.14
The brand offers quality product/service. (item 17)	2	5	4.55	.656	-1.195	.439	.14
The brand's products and services are actually useful. (item 20)	2	5	4.48	.689	-1.138	.679	.15
The brand's marketing claims are accurate. (item 21)	2	5	4.44	.694	-.933	-.043	.16
The brand maintains the quality of its product/service. (item 22)	1	5	4.51	.703	-1.303	1.277	.16
Brand authenticity $\alpha = .732$							
The brand is famous for its product/service. (item 8)	1	5	4.03	.880	-.701	.334	.22
The brand is the original of the particular product/service. (item 9)	1	5	3.85	.983	-.660	.294	.26
The brand gives you an experience you never had before. (item 27)	1	5	4.18	.854	-.871	.549	.20
Brand attentiveness $\alpha = .839$							
4.2 The brand keeps your privacy. (item 32)	1	5	4.44	.737	-1.193	1.075	.17
4.3 The brand has post-purchase service. (item 33)	1	5	4.34	.792	-1.065	.843	.18
4.4 The brand gives you the best offer. (item 34)	1	5	4.15	.847	-.862	.679	.20
4.5 The brand has many communication channels. (item 35)	1	5	4.41	.748	-1.219	1.515	.17
N = 419							
Variable	$\hat{\beta}$	E	S.E.	t	R ²		
<i>Second-order confirmatory factor analysis</i>							
Components of SME brand equity (SMEBE)							
Brand functionality (BFU)	.897	.507	.032	15.769	.805		
Brand authenticity (BAU)	.762	.397	.042	9.394	.581		
Brand attentiveness (BAT)	.978	.579	.035	16.630	.956		
<i>First-order confirmatory factor analysis</i>							
Brand functionality (BFU)							
BFU 1 (item 16)	.730	.845	.053	15.824	.533		
BFU 2 (item 17)	.778	.901	.052	17.484	.605		
BFU 3 (item 20)	.821	1.000			.674		
BFU 4 (item 21)	.778	.952	.054	17.555	.605		
BFU 5 (item 22)	.781	.969	.055	17.573	.610		
Brand authenticity (BAU)							
BAU 1 (item 8)	.679	1.145	.134	8.548	.461		
BAU 2 (item 9)	.388	.732	.120	6.089	.151		
BAU 3 (item 27)	.615	1.000			.378		
Brand attentiveness (BAT)							
BAT 1 (item 32)	.804	1.000			.646		
BAT 2 (item 33)	.807	1.078	.062	17.308	.651		
BAT 3 (item 34)	.574	.816	.072	11.306	.329		
BAT 4 (item 35)	.757	.956	.059	16.202	.573		
$\chi^2 (37, N=419) = 40.220, p = .330$ CFI = .999 TLI = .998 RMSEA = .014							
All factor loadings are significant ($p < .05$).							

Figure 6.1: Summary of invariance and non-invariance parts of SMEBE models in case of SME brands in different sectors

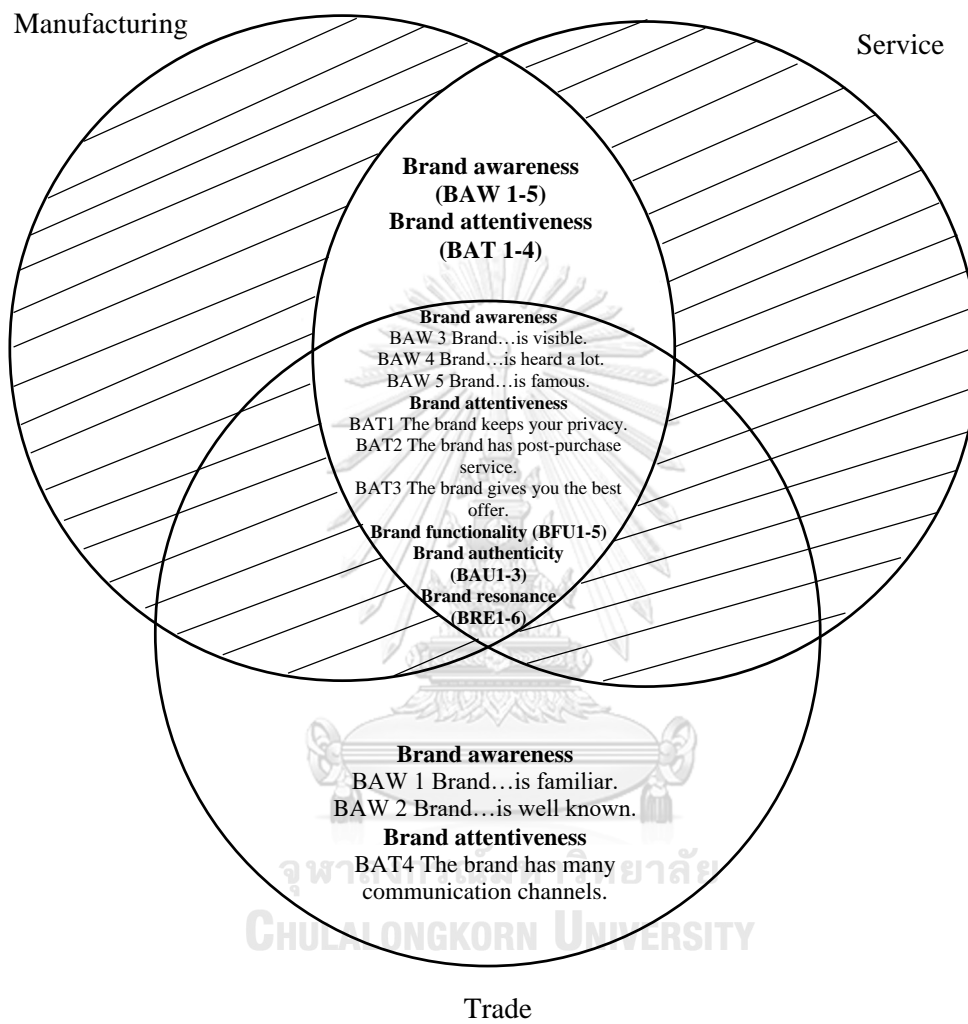


Table 6.3: Summary of definitions and items of SME brand equity measurement model

นิยาม Definition	ข้อคำถาม Items
Complex latent variable	
<u>SME brand equity</u>	
The value added by consumers to a brand that is operated by small and medium-sized enterprises. SME brand equity measurement model developed here consisted of five sub-components including Brand awareness, Brand functionality, Brand authenticity, Brand attentiveness, and Brand resonance. All 23 SME brand equity items measured by five-point Likert's scale.	
ตัวแปรหลัก	
<u>คุณค่าตราสินค้าเอสเอ็มอี</u>	
ระดับความเป็นที่ชื่นชอบ โดดเด่น และน่าจดจำที่ตราสินค้าเอสเอ็มอีหนึ่ง ๆ มีเหนือกว่าตราสินค้าเอสเอ็มอีอื่น ๆ ซึ่งประเมินจากความคิดเห็นของผู้บริโภคใน 5 องค์ประกอบย่อย 23 ข้อคำถาม ได้แก่ 1) ความตระหนักรู้ตราสินค้า (Brand awareness) 2) ความใช้ได้จริงของตราสินค้า (Brand functionality) 3) ความเป็นของแท้ของตราสินค้า (Brand authenticity) 4) ความใส่ใจของตราสินค้า (Brand attentiveness) และ 5) การสะท้อนความสัมพันธ์กับตราสินค้า (Brand resonance) ด้วยมาตราวัด 5 ระดับคะแนน	
องค์ประกอบย่อย	
<u>Sub-components</u>	
<u>1) Brand awareness</u>	
The ability of consumers to identify a brand after prior exposure	
<u>1) ความตระหนักรู้ตราสินค้า</u>	
ระดับการรับรู้ของผู้บริโภคว่า ตราสินค้าเป็นที่แพร่หลายทั่วไป ผู้คนส่วนใหญ่คุ้นเคย และผู้บริโภคเองก็รู้จัก เคยพบเห็น ได้ยินชื่อ รวมถึงชื่อเสียงของตราสินค้านั้น	
<ol style="list-style-type: none"> 1. Brand X is well known. X เป็นแบรนด์ที่เป็นที่รู้จัก 2. Brand X is visible. X เป็นแบรนด์ที่พบเห็นได้ทั่วไป 3. Brand X is heard a lot. X เป็นแบรนด์ที่ได้ยินชื่อบ่อย ๆ 4. Brand X is famous. X เป็นแบรนด์ที่มีชื่อเสียง 5. Brand X is familiar. X เป็นแบรนด์ที่ใคร ๆ คุ้นเคย 	

Table 6.3: --continued

นิยาม Definition	ข้อคำถาม Items
องค์ประกอบย่อย Sub-components	
<p>2) Brand functionality How well an SME brand can fulfill the fundamental needs of consumers by providing the product/service that is suitable for the purpose it was designed for</p> <p>2) ความสำเร็จได้จริงของตราสินค้า ระดับการรับรู้ของผู้บริโภคว่า ตราสินค้าตอบสนองความต้องการของตนได้อย่างมีประสิทธิภาพ</p>	<p>6. Brand X's products/ services are safe. X มี (ประเภทสินค้า/บริการ) ที่ปลอดภัย</p> <p>7. Brand X offers quality product/service. X มี (ประเภทสินค้า/บริการ) ที่คุณภาพดี</p> <p>8. Brand X's products and services are actually useful. X มี (ประเภทสินค้า/บริการ) ที่มีประโยชน์อย่างแท้จริง</p> <p>9. Brand X's marketing claims are accurate. X มี (ประเภทสินค้า/บริการ) ที่ตรงตามคำโฆษณา</p> <p>10. Brand X maintains the quality of its product/service. X รักษามาตรฐานของการ (ผลิต/ให้บริการ/จำหน่าย) (ประเภทสินค้า/บริการ)</p>
<p>3) Brand authenticity How well an SME brand is true to its nature and uniquely and freshly delivers its promise without imitating other brands</p> <p>3) ความเป็นของแท้ของตราสินค้า ระดับการรับรู้ของผู้บริโภคว่า ตราสินค้าโด่งดัง เป็นต้นตำรับ ของสินค้า/บริการประเภทนั้น และสามารถมอบประสบการณ์ที่ผู้บริโภคไม่เคยได้รับจากตราสินค้าอื่น ๆ</p>	<p>11. Brand X is famous for its product/service. X โด่งดังในการ (ผลิต/ให้บริการ/จำหน่าย) (ประเภทสินค้า/บริการ)</p> <p>12. Brand X is the original of the particular product/ service. X เป็นต้นตำรับของการ (ผลิต/ให้บริการ/จำหน่าย) (ประเภทสินค้า/บริการ)</p> <p>13. Brand X gives you an experience you never had before. X ทำให้คุณได้ประสบการณ์แปลกใหม่อย่างที่ไม่เคยได้รับมาก่อน</p>
<p>4) Brand attentiveness How well an SME is helpful and makes sure that its customers get what they need</p> <p>4) ความใส่ใจของตราสินค้า ระดับการรับรู้ของผู้บริโภคว่า ตราสินค้าดูแลคุ้มครองผู้บริโภคให้ปลอดภัย และได้รับความ</p>	<p>14. Brand X keeps your privacy. X รักษาความลับและไม่เผยแพร่ข้อมูลส่วนตัวของลูกค้า</p> <p>15. Brand X has post-purchase service. X มีบริการหลังการขาย เช่น ให้เปลี่ยน (ประเภทสินค้า/บริการ) หรือคืนเงิน</p> <p>16. Brand X gives you the best offer. X ให้สิทธิพิเศษคุณได้มากกว่าแบรนด์อื่น ๆ</p>

สะดวกสบาย ตลอดกระบวนการซื้อสินค้า/บริการ

17. Brand X has many communication channels.

X มีช่องทางให้คุณติดต่อสื่อสารได้อย่างสะดวก

Table 6.3: --continued

นิยาม Definition	ข้อความ Items
องค์ประกอบย่อย Sub-components	
<p>5) Brand resonance The psychological and behavioral loyalty that customers have with a brand</p> <p>5) การสะท้อนความสัมพันธ์กับตราสินค้า</p> <p>ระดับทัศนคติและพฤติกรรมเชิงบวก ของผู้บริโภคที่มีต่อตราสินค้า</p>	<p>18. I would like to buy brand X. คุณอยากซื้อสินค้าจาก X</p> <p>19. I consider myself to be loyal to brand X. เป็นลูกค้าประจำของ X</p> <p>20. I am willing to recommend brand X to my friends. คุณยินดีจะแนะนำ X ให้เพื่อนรู้จัก</p> <p>21. I am used to brand X. คุณคุ้นเคยกับ X</p> <p>22. Brand X would be my first choice. คุณจะเลือก X เป็นอันดับแรกถ้าจะ (ซื้อสินค้า.../รับบริการ.../เข้าร้านขาย...)</p> <p>23. I will not buy other brands if brand X is available at the store. คุณจะไม่ซื้อแบรนด์อื่นถ้ามี X (วางขาย/ให้บริการ/ตั้งร้านค้า) อยู่ใกล้ๆ</p>

Discussions

Two main parts of the discussions are presented here according to two research objectives. One addressed the first research purpose about the development of a generalizable SME brand equity measurement model. The other discussed the second research objective regarding the relationship between SME brand equity and consumer response factors.

Part 1 The development of SME brand equity measurement model

SME brand equity measurement model developed in this study was able to achieve validity, reliability, and generalizability stated in the first research goal. Issues worth discussing here included components and construct of SME brand equity measurement model as well as its application to different business sectors and consumers varying in their characteristics

Components of SME brand equity measurement model

SME brand equity measurement model successfully developed here consists of five components. Three of them named brand functionality, brand authenticity, and brand attentiveness were derived from data collected from actual consumers, while the other two components, brand awareness and brand resonance, were selected from the literature of brand equity measurement to empirically examine Keller's (2001) brand resonance model.

The findings indicated that all five components mentioned can effectively explain the concept of SME brand equity and support the notion that brand equity is a multi-dimensional concept (e.g., Aaker, 1991; Blackston, 1992; 1995; Farquhar, 1989; Keller, 1993; Lassar et al., 1995).

Moreover, this study provided some empirical evidence for Keller's (2001) concept of brand equity pyramid, as the conceptual and operational definitions of SME brand equity measurement model can empirically tap each brand equity building block. In particular, *brand awareness* refers to brand salience at the base of the pyramid. *Brand functionality* should be in the block of brand performance which refers to the basic benefits of product that fulfill consumers' primary need. *Brand authenticity*, which is the consumer perception of the brand's originality, could be put into the block of brand imagery, or the extrinsic product attributes that meet customers' abstract psychological or social needs. *Brand attentiveness* located in the block of brand judgments, as consumers probably perceive the helpfulness of the brand based on their different brand functionality and brand authenticity associations. Lastly, *brand resonance* in SME brand equity model is similar to brand resonance on top of the brand equity pyramid.

Besides contributing to the theory of brand equity measurement, each component of SME brand equity measurement model reflects the unique characteristic of small and medium enterprises. The first component, brand functionality, measures how well an SME brand can fulfill the fundamental needs of consumers by providing the product/service that is suitable for the purpose it was designed for. The definition of brand functionality relates to small and medium firms' operation ability. Due to the small size, most SMEs serve specific segments of

consumers (OSMEP, 2016) in a particular market (Carson, 1990) and effectively respond to their customers' needs. The smaller size of business also helps SMEs fulfill the expectations of consumers in a more flexible and creative way than large companies (Escriba'-Esteve et al., 2008; Krake, 2005; Steffens, et al., 2009). Therefore, the ability to produce high-quality goods is one of SMEs' competitive advantages that appears in the form of brand functionality, one of the five components adopted by consumers to assess the brand equity of SMEs.

Brand authenticity, the second component of SME brand equity, measures how well an SME brand is true to its nature and uniquely and freshly delivers its promise without imitating other brands. This brand equity component is suitable for SMEs which are often recognized for the innovativeness and uniqueness of their products and their brand personality. As the small and medium companies often owned by one person or a very few people, and often operated directly by their owner(s) (Phawakanan, 2010), most entrepreneurs independently execute their ideas (Kuhn, 1989) and control all resources by themselves (Scarborough & Zimmerer, 2006). The independence and freedom of entrepreneurs to manage their businesses probably stimulate the creation of products and services that have the aura of originality. Moreover, each SME brand has its unique brand personality influenced by the characteristics of its owner(s) (Centeno et al., 2013; Krake, 2005; Resnick et al., 2016). Since SME brands tend to be original in some way, it is not surprising that brand authenticity is one of the five criteria that consumers use to evaluate SME brand equity.

The third factor of SME brand equity was called brand attentiveness assessing how well an SME is helpful and makes sure that its customers get what they need.

The brand attentiveness shows the nature of SME owners' friendly and empathetic management style. In other words, owners of small companies manage their businesses in a personalized way. More often, they participate in all aspects of business management (Schollhammer & Kuriloff, 1979, as cited in Carson, 1990), for example, taking care of customers and building customer networks (Jack et al., 2010; Moriarty et al., 2009). Some SME entrepreneurs even gather market information, obtain feedback, and test their business ideas with the customers by themselves (Gilmore et al., 2001; Stokes, 2000). As an SME brand often shows its customers that it really cares, it should be assessed a part of the consumer-based brand equity through items regarding brand attentiveness.

For testing Keller's (2001) concept of brand equity, brand awareness and brand resonance were added to measure SME brand equity besides the three core dimensions discussed above. The confirmatory factor analysis showed that both brand awareness and brand resonance are the components that reflect SME brand equity.

Brand awareness occurs when consumers can identify a brand after prior exposure (Keller, 2001). The ability to recognize a brand is the first step that leads to other aspects of brand evaluation. Therefore, brand awareness was the all-time favorite component that was included in many brand equity measurement models, for instances, Yoo and Donthu's (2001), Bauer et al.'s (2005), Rios and Riquelme's (2010), Jara and Cliquet (2012)'s, Kumar et al.'s (2013), and Khan et al.'s (2015). As this study successfully integrated brand awareness into its SME brand equity measurement model, it can be concluded that SME brand equity model's fundamental characteristics are in line with the mainstream of brand equity measurements existing in the branding literature.

Another dimension added to the SME brand equity model to examine Keller's (2001) concept of brand equity is brand resonance or the psychological and behavioral loyalty that customers have with a brand. In contrast to brand awareness, brand resonance was rarely empirically investigated (Aziz & Yasin, 2010). The findings of this study not only provided the empirical evidence for the concept of brand resonance but also highlighted its role in measuring SME brand equity.

Although brand resonance is located on the top of Keller's (2001) brand equity pyramid, it can measure the equity of small and medium brands. Face-to-face communication and social media adopted by SMEs for their brand communication probably are the reasons why brand resonance is one of the five components of SME brand equity. In particular, SMEs' branding activities mostly were personal, face-to-face communication done for enhancing brand favorabilities, for example, trade and consumer shows, and product demonstrations (Centeno & Hart, 2012; Krake, 2005). Moreover, social media connect SME brands to existing and potential customers (Jones et al., 2015), These online tools benefit SMEs not only in conveying their brand identity (Nimsuwan & Polnigongit, 2013) but also in developing interactive brand engagement with customers (Renton et al., 2015). The more effective two-way brand communication an SME brand practiced, the more positive resonance from consumers it gains. Therefore, brand resonance is one of the component that can empirically measure the level of SME brand equity.

Construct of SME brand equity measurement model

Previous studies on the assessment of consumer-based brand equity for SMEs are scarce. Due to the lack of empirical evidence, this study, therefore, explored the

construct of SME brand equity by proposing three competing models which are the second-order factor model, the causal model, and the causal model with the relationship between dimensions. However, only the second-order factor model fitted with the empirical data.

The findings of this study show that SME brand equity construct tends to be a complex variable that is reflected by five sub-components or the first-order latent variables including brand functionality, brand authenticity, brand attentiveness, brand awareness, and brand resonance. These components reflect rather than forming the SME brand equity variable. Moreover, each component of SME brand equity does not interrelate but works independently in the measurement model.

The pattern of SME brand equity model is congruent with the form of many brand equity measurement models in the prior research. The second-order factor model is the modeling technique that have been used to operationalize brand equity since the 1990s (Aziz & Yasin, 2010; Baalbaki & Guzmán, 2016; Lassar et al., 1995; Vázquez et al., 2002; Yoo & Donthu, 2001). Similarly, SME brand equity can be most effectively explained by the second-order factor model.

Another aspect worth discussing here is the empirical examination of Keller's (2001) brand equity pyramid within the context of SMEs. This study attempted to provide the empirical evidence for the brand equity concept of Keller (2001) by proposing the causal links between SME brand equity's dimensions in the way that referred to the six hierarchical brand building blocks in the brand equity pyramid. According to the goodness-of-fit statistical values, the causal model with the relationship between dimension poorly explained the construct of SME brand equity.

Although SME brand equity measurement model contains five main components referring to the brand building blocks of the brand equity pyramid, these components did not relate to each other. In particular, brand functionality, brand authenticity, brand attentiveness, brand awareness, and brand resonance only reflected SME brand equity with no causal relationship between them. Therefore, this study found some empirical evidence for Keller's (2001) concept in the aspect that the brand-building blocks of the brand equity pyramid can be operationalized to measure brand equity. However, the hierarchical relationship between each block did not appear in the context of SME brand equity measurement.

Application of SME brand equity measurement model across different business sectors

The model invariance testing results indicated that SME brand equity measurement model developed here achieved the configural invariance within the different business contexts. The configural invariance means that SME brand equity model does not change its pattern, number of components, and number of questions when being used to measure brand equity of an SME brand belonging to different industries. Therefore, this study's SME brand equity measurement model can be applied to all three business sectors including manufacturing, service, and trade. The similarity of the measurement model form across three SME sectors implies that the SME brand equity model of this study effectively reflects the true nature of the brand equity underlying small and medium brands varying in their business types.

Although sharing the similar model pattern and number of questions measuring SME brand equity, the three business sectors can partly compare their

SME brand equity scores with each other's. According to the metric invariance testing conducted after achieving the configural model, some components of SME brand equity were interpreted differently across business sectors. In particular, consumers have a common understanding when rating SME brand equity of different business types in the aspect of brand functionality, brand authenticity, and brand resonance. In the domain of brand awareness and brand attentiveness, consumers adopted the same evaluation standard for manufacturing and service SMEs but not for the trade ones.

Based on the literature regarding consumer behavior, the needs for something special might be the reason why brand functionality, brand authenticity, and brand resonance were the common standards adopted by consumers for evaluating brand equity of every SME no matter what business sector it belongs to.

In the aspect of brand functionality, consumers who choose to buy from small brands definitely agree that SME brands in every kind of business should be able to fulfill their needs, as they prefer products with the high quality (Levy & Powell, 1998). These customers, moreover, need SMEs to satisfy their unique preferences unmet by large companies in the marketplace. Thus, brand functionality, or the ability to fulfill customer needs, is vital for building consumer-based SME brand equity of any business sector.

Another component necessary for all industries of SMEs is brand authenticity. As consumers of SME brands tend to be specific segments of individuals who seek for the difference (Carson, 1990; OSMEP, 2016), they often expect SMEs to uniquely and freshly delivers the brand promises without imitating other brands. Brand authenticity, therefore, becomes one of the important factors creating SME brand equity across industries.

The last component that consumers assessed in the same way despite the difference in the business sector of SME brands is brand resonance, or the positive psychological and behavioral responses of customers toward a brand. In the setting of SME brands, customers incline to support their favorite brands in many ways, for example, clicking the like button on the brand's Facebook fan page (Wallace et al., 2016). Some SME consumers become the brand advocates by spreading the positive word of mouth about a brand to others (Nakara et al., 2012). These practices of SME consumers are the reason why brand resonance plays a crucial role in measuring SME brand equity across business types.

In contrast to the three components mentioned, brand awareness and brand attentiveness were interpreted similarly only within the context of manufacturing and service SMEs. In case of trade SMEs, consumers assessed brand awareness and brand attentiveness with the different standard. The non-invariance across industries occurred probably because of the distinct characteristics of the trade businesses.

According to the invariance analysis of items measuring brand awareness, three of five items were interpreted in the same way across three SME sectors, while the other three questions were assessed differently within the trade setting. Specifically, two items about brand exposure and one item about brand fame belonging to brand awareness (P1_14 Brand...is visible., P1_15 Brand...is heard a lot, P1_16 Brand...is famous.) have the same degree of importance for creating SME brand equity in the context of the manufacturing, service, and trade. Logically, the item regarding brand fame in the component of brand awareness (P1_16 Brand...is famous.) should be necessary for all business sectors in the same way as the item about brand fame in the dimension of brand authenticity was (Item 8 The brand is

famous for its product/service.). The two items about brand exposure (P1_14 Brand...is visible., P1_15 Brand...is heard a lot.) were similarly evaluated across business groups because the visibility and the frequency of mention are the fundamental steps leading to brand awareness compared with the two items about the brand familiarity and the quality of being well known (P1_12 Brand...is familiar., P1_13 Brand...is well known.).

Another reason that probably explains why consumers interpreted some brand awareness items differently in the setting of trade SMEs is that a retail brand has distinct brand associations. Unlike manufacturing and service brands, none of a retail brand's associations links to products (Jara & Cliquet, 2012). Since trade SMEs do not have their own products, consumers tend to remember a trade brand through many manufacturing and service brands sold in its store. The lack of product-related brand associations perhaps leads to the different interpretation of retailers' brand awareness when consumers evaluate SME brand equity.

In the aspect of brand attentiveness, consumers agree that all SME brands should protect customer privacy (Item 32 The brand keeps your privacy.), have post-purchase services (Item 33 The brand has a post-purchase service.), and provide customer privileges (Item 34 The brand gives you the best offer.). However, consumers perceived the difference of trade brands' communication channels (Item 35 The brand has many communication channels.) compared to manufacturing and service SMEs.

The item 32, 33, and 34 of brand attentiveness were interpreted similarly when consumers evaluate SME brand equity of all businesses due to customers' purchase activities and consumption patterns. In particular, the item regarding consumers'

privacy (Item 32 The brand keeps your privacy.) is vital across three business sectors because modern consumers tend to know their rights and concern about sharing and protecting their personal information (Macdonald & Uncles, 2007).

The item about post-purchase services (Item 33 The brand has a post-purchase service.) was also similarly assessed among three industries. This consensus of opinion implies that most consumers expect post-purchase services from manufacturing, service, and retailer brands. In the context of product and service consumption, consumers often expect manufacturers or service providers to give a warranty that the product will perform its intended function under normal condition of use during the warranty period (Karim & Suzuki, 2005), while the post-purchase policies of a retailer might be returns and refunds in case of item damage or faulty. As such, when evaluating SME brand equity, consumers interpreted the item regarding post-purchase services of retail SMEs similarly across three domains of business.

Turning to the issue of customer privileges (Item 34 The brand gives you the best offer.), most consumers are happy when they get some special treats from an SME brand no matter what sector it belongs to. In the context of retailer brands, special offers might be sales promotions due to intense price competition occurring often between shops (Martenson, 2007). In the case of manufacturers and service providers, consumers probably expect both hot deals and exclusive products or services. Thus, when rating the item about customer privileges measuring brand attentiveness, consumers incline to apply the same standard to manufacturing, service, and retailer SME brands.

The non-invariant item of brand attentiveness is about communication channel (Item 35 The brand has many communication channels.). In the setting of product and service brands, consumers can communicate with the brands via many channels, for example, service staffs, customer-care hotline, emails, and the brand's social media sites. However, manufacturing and service brands use less amount of external brand communications compared to the retailer ones. SME retail brands rely heavily on the offline communication channels such as the store environment (Mitchell et al., 2015), price tags, and window display (Mitchell, Hutchinson, & Bishop, 2012). Due to the distinct communication channels adopted by retail businesses, consumers evaluated the item regarding communication channels of a trade SME in a dissimilar way they did to that of the manufacturing and service one.

***Application of SME brand equity measurement model to consumers
varying in their characteristics***

Based on the model invariance testing, SME brand equity measurement model developed in this study achieved both configural and metric invariance among consumers varying in the degree of SME brand equity, product involvement, and brand engagement.

SME brand equity measurement model's metric invariance across consumers varying in their characteristics means that five SME brand equity components, including brand awareness, brand functionality, brand authenticity, brand attentiveness, and brand resonance, equally contributed to the construct of SME brand equity despite the difference in characteristics of consumers. Furthermore, the metric invariance of SME brand equity measurement model can imply that consumers

varying in the degree of SME brand equity, product involvement, and brand engagement interpreted the scale of SME brand equity in the same way.

The carefully designed data collection method of this study might be one factor that contributes to the measurement invariance across consumer groups of the SME brand equity model. In particular, initial items of SME brand equity were obtained from both SME brands and consumers. Document analysis of 40 SME brands belonging to the manufacturing, service, and trade sectors was conducted to get the first glimpse of SME brand equity items. Then, personal interviews with consumer participants were done to obtain additional items, and to ensure that the items analyzed from the documents were attributes that are necessary for creating SME brand value in the eyes of consumers. The use of multiple data collection methods to obtain a pool of items from different sources helped enhance content validity as well as the understanding of SME brand equity from various perspectives.

Furthermore, this study acknowledged the influence of demographic variables on brand equity evaluation. As prior literature noticed that gender and age could affect the assessment of consumer-based brand equity (Netemeyer et al., 2004), forty individuals who had experience of SME brand consumption and were selected to interview here consisted of male and female shoppers divided equally into four generations. Therefore, the items obtained from the interviews represented the opinions about SME brand equity of consumers varying in their demographic characteristics and were generalizable enough to be applied to consumers differing in the level of SME brand equity, product involvement, and brand engagement.

All in all, the SME brand equity measurement model developed here meets the first research objective because its items were qualitatively derived from consumer participants varying in their demographic characteristics. Moreover, the quantitative research was conducted with actual customers to gain the empirical evidence. Series of exploratory and confirmatory factor analysis as well as the competing measurement models ensured the construct validity of SME brand equity measurement model while the scale reliability was achieved through Cronbach's alpha test and the analysis of corrected item-total correlations. The generalizability of SME brand equity measurement model was checked by the multi-group confirmatory analyses to provide the empirical evidence that the model is generalizable enough to be apply across the manufacturing, service, and trade businesses as well as across consumers differing in the level of SME brand equity, product involvement, and brand engagement.

The conceptual definition of SME brand equity was summarized and depicted in the diagram that resembles the construct of SME brand equity. Five subdimensions including brand awareness, brand functionality, brand authenticity, brand attentiveness, and brand resonance reflect the complex variable or SME brand equity (see Figure 6.2).

Moreover, a ready-to-use version of SME brand equity measurement scales and the score calculation method are provided in Table 6.4. Total 23 items measuring five dimensions of SME brand equity. *Brand awareness* or the ability of consumers to identify a brand after prior exposure was measured by the first five items. *Brand functionality* was reflected by item 6 to 10 about how well an SME brand can fulfill the fundamental needs of consumers by providing the product/service that is suitable for the purpose it was designed for. *Brand authenticity* or how well an SME brand is

true to its nature and uniquely and freshly delivers its promise without imitating other brands was measured by item 11 to item 13. *Brand attentiveness* was operated by item 14 to item 17 regarding how well an SME is helpful and makes sure that its customers get what they need. Lastly, *brand resonance* or the psychological and behavioral loyalty that customers have with a brand was measured by item 18 to item 23 (see Table 6.4).

The SME brand equity score can be computed by calculating the mean value or average. First, sum up the score of total items or some items of the dimension needed to be specifically analyzed. Then, divide the sum of scores by the number of items that were summed up. The mean value of SME brand equity can be used for the comparison between brands in the same product category or in the same business sector (see Table 6.4).

Figure 6.2: Conceptual definition of SME brand equity

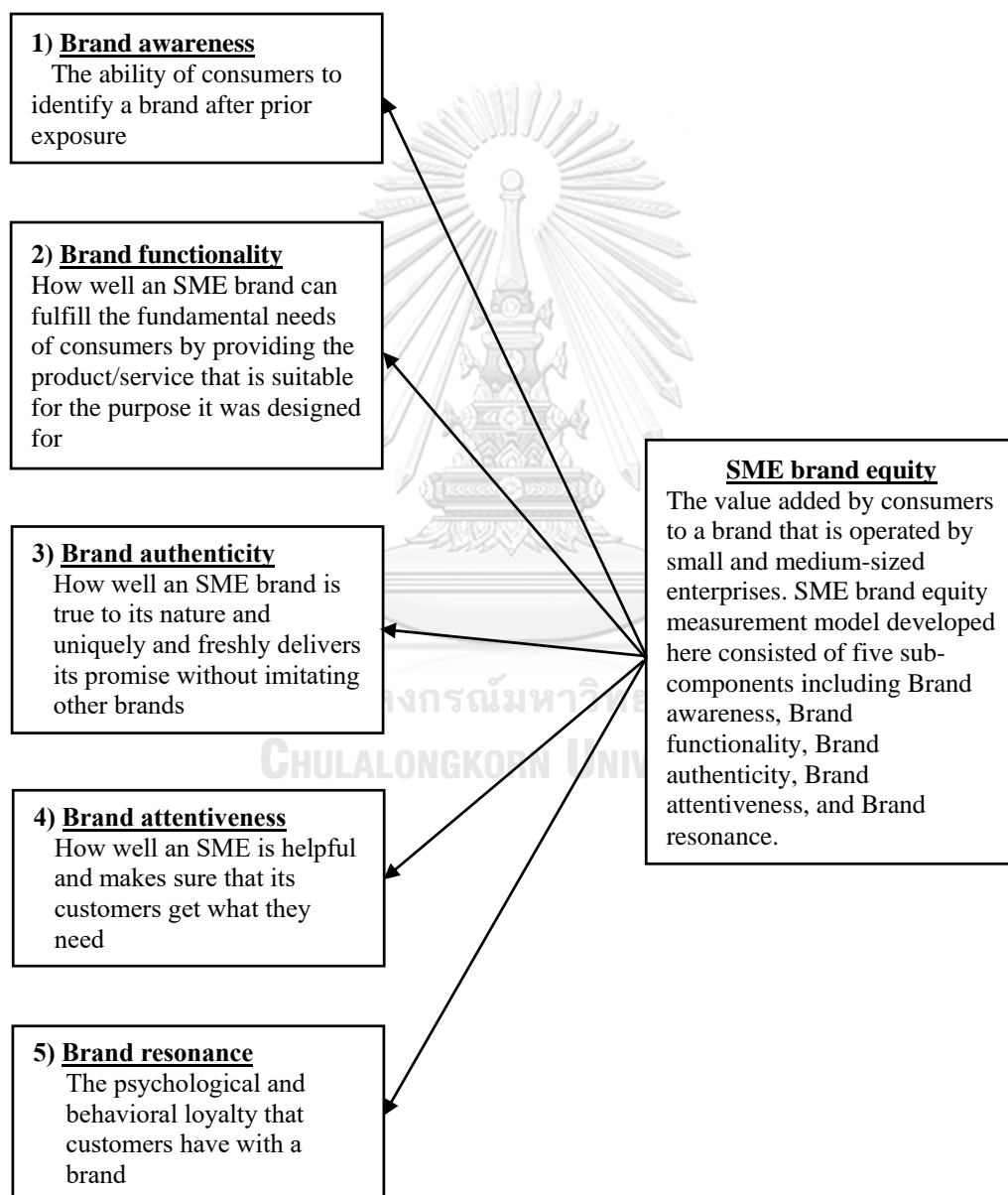


Table 6.4: A ready-to-use version of SME brand equity measurement scales

แบบสอบถามเพื่อศึกษาความคิดเห็นของผู้บริโภคที่มีต่อตราสินค้า X

คำชี้แจง คุณเห็นด้วยกับข้อความต่อไปนี้มากน้อยเพียงใด กรุณาเลือกโดยวงกลม ล้อมตัวเลขที่ตรงกับระดับความคิดเห็นของคุณมากที่สุด โดยที่

1	หมายถึง คุณ	“ไม่เห็นด้วยเลย”	กับข้อความนั้น
2	หมายถึง คุณ	“ไม่ค่อยเห็นด้วย”	กับข้อความนั้น
3	หมายถึง คุณ	“เห็นด้วยปานกลาง”	กับข้อความนั้น
4	หมายถึง คุณ	“เห็นด้วยมาก”	กับข้อความนั้น
5	หมายถึง คุณ	“เห็นด้วยมากที่สุด”	กับข้อความนั้น

คำชี้แจง คุณเห็นด้วยกับข้อความต่อไปนี้มากน้อยเพียงใด

	เห็นด้วยมากที่สุด					ไม่เห็นด้วยเลย				
1. X เป็นแบรนด์ที่เป็นที่รู้จัก	5	4	3	2	1	5	4	3	2	1
2. X เป็นแบรนด์ที่พบเห็นได้ทั่วไป	5	4	3	2	1	5	4	3	2	1
3. X เป็นแบรนด์ที่ได้ยินชื่อบ่อย ๆ	5	4	3	2	1	5	4	3	2	1
4. X เป็นแบรนด์ที่มีชื่อเสียง	5	4	3	2	1	5	4	3	2	1
5. X เป็นแบรนด์ที่ใคร ๆ ก็คุ้นเคย	5	4	3	2	1	5	4	3	2	1
6. X มี (ประเภทสินค้า/บริการ) ที่ปลอดภัย	5	4	3	2	1	5	4	3	2	1
7. X มี (ประเภทสินค้า/บริการ) ที่คุณภาพดี	5	4	3	2	1	5	4	3	2	1
8. X มี (ประเภทสินค้า/บริการ) ที่มีประโยชน์อย่างแท้จริง	5	4	3	2	1	5	4	3	2	1
9. X มี (ประเภทสินค้า/บริการ) ที่ตรงตามคำโฆษณา	5	4	3	2	1	5	4	3	2	1
10. X รักษามาตรฐานของการ (ผลิต/ให้บริการ/จำหน่าย) (ประเภทสินค้า/บริการ)	5	4	3	2	1	5	4	3	2	1

11. X โต้ตั้งในการ (ผลิต/ให้บริการ/จำหน่าย) (ประเภทสินค้า/บริการ)	5	4	3	2	1
12. X เป็นต้นตำรับของการ (ผลิต/ให้บริการ/จำหน่าย) (ประเภทสินค้า/บริการ)	5	4	3	2	1
13. X ทำให้คุณได้ประสบการณ์แปลกใหม่อย่างไม่เคยได้รับมาก่อน	5	4	3	2	1

Table 6.4: --continued

	เห็นด้วยมากที่สุด			ไม่เห็นด้วยเลย		
14. X รักษาความลับและไม่เผยแพร่ข้อมูลส่วนตัวของลูกค้า	5	4	3	2	1	
15. X มีบริการหลังการขาย เช่น ให้เปลี่ยน (ประเภทสินค้า/บริการ) หรือคืนเงิน	5	4	3	2	1	
16. X ให้สิทธิพิเศษคุณได้มากกว่าแบรนด์อื่น ๆ	5	4	3	2	1	
17. X มีช่องทางให้คุณติดต่อสื่อสารได้อย่างสะดวก	5	4	3	2	1	
18. คุณอยากซื้อสินค้าจาก X	5	4	3	2	1	
19. เป็นลูกค้าประจำของ X	5	4	3	2	1	
20. คุณยินดีจะแนะนำ X ให้เพื่อนรู้จัก	5	4	3	2	1	
21. คุณคุ้นเคยกับ X	5	4	3	2	1	
22. คุณจะเลือก X เป็นอันดับแรกถ้าจะ (ซื้อสินค้า.../รับบริการ.../เข้าร้านขาย...)	5	4	3	2	1	
23. คุณจะไม่ซื้อแบรนด์อื่นถ้ามี X (วางขาย/ให้บริการ/ตั้งร้านค้า) อยู่ใกล้ๆ	5	4	3	2	1	

หมายเหตุ:

ตัวแปรหลัก

คุณค่าตราสินค้าของวิสาหกิจขนาดกลางและขนาดย่อม (เอสเอ็มอี) คำถามรวม 23 ข้อ

ระดับความเป็นที่ชื่นชอบ โดดเด่น และน่าจดจำที่ตราสินค้าเอสเอ็มอีหนึ่ง ๆ มีเหนือกว่าตราสินค้าเอสเอ็มอี

อื่น ๆ ซึ่งประเมินจากความคิดเห็นของผู้บริโภคใน 5 องค์ประกอบย่อย ได้แก่ 1) ความตระหนักรู้ตราสินค้า (Brand awareness) 2) ความใช้ได้จริงของตราสินค้า (Brand functionality) 3) ความเป็นของแท้ของตราสินค้า (Brand authenticity) 4) ความใส่ใจของตราสินค้า (Brand attentiveness) และ 5) การสะท้อนความสัมพันธ์กับตราสินค้า (Brand resonance) ด้วยมาตราวัด 5 ระดับคะแนน

องค์ประกอบย่อย

1) ความตระหนักรู้ตราสินค้า คำถาม 5 ข้อ (ข้อ 1 ถึง ข้อ 5)

ระดับการรับรู้ของผู้บริโภคว่า ตราสินค้าเป็นที่แพร่หลายทั่วไป ผู้คนส่วนใหญ่คุ้นเคย และผู้บริโภคเองก็รู้จัก เคยพบเห็น ได้ยินชื่อ รวมถึงชื่อเสียงของสินค้านั้น

2) ความใช้ได้จริงของตราสินค้า คำถาม 5 ข้อ (ข้อ 6 ถึง ข้อ 10)

ระดับการรับรู้ของผู้บริโภคว่า ตราสินค้าตอบสนองความต้องการของตนได้อย่างมีประสิทธิภาพ

3) ความเป็นของแท้ของตราสินค้า คำถาม 3 ข้อ (ข้อ 11 ถึง ข้อ 13)

ระดับการรับรู้ของผู้บริโภคว่า ตราสินค้าโด่งดัง เป็นต้นตำรับ ของสินค้า/บริการประเภทนั้น และสามารถมอบประสบการณ์ที่ผู้บริโภคไม่เคยได้รับจากตราสินค้าอื่น ๆ

4) ความใส่ใจของตราสินค้า คำถาม 4 ข้อ (ข้อ 14 ถึง ข้อ 17)

ระดับการรับรู้ของผู้บริโภคว่า ตราสินค้าดูแลคุ้มครองผู้บริโภคให้ปลอดภัย และได้รับความสะดวกสบาย ตลอดจนกระบวนการซื้อสินค้า/บริการ

5) การสะท้อนความสัมพันธ์กับตราสินค้า คำถาม 6 ข้อ (ข้อ 18 ถึง ข้อ 23)

ระดับทัศนคติและพฤติกรรมเชิงบวกของผู้บริโภคที่มีต่อตราสินค้า

วิธีการคำนวณคะแนนคุณค่าตราสินค้าของเอสเอ็มอี

ระดับคุณค่าตราสินค้าของเอสเอ็มอีสามารถคำนวณได้จาก การคิดคะแนนเฉลี่ย ซึ่งเกิดจากการหารผลรวมของคะแนนจากข้อคำถามทั้งหมด หรือข้อคำถามของด้านที่สนใจศึกษาด้วยจำนวนข้อคำถาม ค่าเฉลี่ยของคุณค่าตราสินค้าเอสเอ็มอีสามารถนำไปใช้ในการเปรียบเทียบระดับคุณค่าตราสินค้าภายในประเภทผลิตภัณฑ์เดียวกัน หรือภายในภาคธุรกิจเดียวกัน

Part 2 Relationship of SME brand equity and consumer response factors

This part of the discussion addressed the second research objective regarding the examination of the relationship between SME brand equity and consumer response factors.

The findings indicated that SME brand equity had significant direct effect on consumers' positive responses including brand preference, brand loyalty, and word of mouth within all three industries which are the manufacturing, service, and trade.

The impact of SME brand equity on consumer positive responses toward the brand provided the empirical evidence for several theoretical concepts of consumer-based brand equity that often postulate the influence of brand equity on consumer behaviors (Aaker, 1991; Keller, 1993; Christodoulides & de Chernatony, 2010).

Moreover, the results obtained implied that SME brand equity measurement model developed here tapped the attributes that truly reflect SME brand value in the consumer perception because the SME brand equity variable significantly influenced consumers to respond positively to the brand belonging to any business sector.

Further analysis revealed that SME brand equity affected three consumer response factors differently across three types of industry. In the case of the manufacturing brand, the consumer response variable most explained by SME brand

equity is word of mouth, while SME brand equity explained the variance of brand preference in the largest amount within the setting of the service and trade SMEs.

The varying in the effect of SME brand equity on consumer response factors across SME industries might be explained by the distinct characteristics of three business sectors within the context of Thai SMEs. The manufacturing SMEs' brand equity mainly affected word of mouth because the positive brand information that consumers tell others (Castellanos-Verdugo et al., 2009) can increase brand credibility (Stokes, 2000) and SMEs customer base through referrals and recommendations which greatly benefit manufacturing SME brands whenever they launch new products.

In the context of service and trade SMEs, brand equity explained a lot of brand preference. Both service and trade SME brands have numerous direct and indirect competitors. In particular, the majority of Thai SMEs are service businesses (OSMEP, 2017), and Trade SME brands are difficult to differentiate themselves from their rivals (Mitchell et al., 2015). Therefore, brand preference, the extent to which consumers have a bias for a particular brand (Ismail & Spinelli, 2012) when comparing to others in their consideration set (Hellier et al., 2003), was explained most by SME brand equity within the context of service and trade SMEs.

In sum, this study empirically found the direct effect of SME brand equity on consumers' positive responses including brand preference, brand loyalty, and word of mouth within all three business sectors. Therefore, the examination of the relationship between SME brand equity and consumer response factors or the second research objective was achieved.

Limitations and recommendations for future research

Since this study developed SME brand equity measurement model from scratch with the limited time and resources, most consumers participated were Bangkokians. Therefore, replication studies are encouraged to examine the construct of SME brand equity using nationwide samples.

As the generalizability of SME brand equity model developed here was tested with three selected brands representing three business sectors, future studies can help increase the reliability of this study's SME brand equity scale by using it to measure more SME brands belonging to the same product category or the same business sector.

SME brand equity measurement model of this study was developed in Thailand. Some cultural characteristics might affect the findings. For increasing the generalizability of the model, the replication studies conducted in the international setting are welcomed.

Lastly, SME brand equity measurement model developed in this study can be used to evaluate the brand performance of an SME in the long run. A longitudinal study can be conducted to track changes in the direction and the evolution of SME brand building by adopting the SME brand equity measurement model as a tool for doing the annual brand health check for a specific SME brand.

Suggestions for managerial applications

Based on the findings, several guidelines on building and measuring SME brand equity are suggested here for policymakers and SME entrepreneurs.

For SME brand equity building, all five sub-components of SME brand equity should be highlighted. In other words, SME brand building and brand communication

activities should be planned and practiced in a way that increases brand awareness, brand functionality, brand authenticity, brand attentiveness, and brand resonance.

In the context of manufacturing and service SME brands, consumers interpreted and evaluated five dimensions of SME brand equity similarly. Hence, it is possible for the policymakers and SME entrepreneurs of product and service SME brands to cooperate and share some resources relating to the brand building and brand communication.

In the setting of trade SMEs, all dimensions reflecting SME brand equity are necessary for SME trade brands. However, some aspects of SME brand equity should be treated differently in the context of retail brands. In particular, brand awareness issues of brand familiarity and quality of being well known as well as brand attentive issues about communication channels of SME retailers differ from that of SME manufacturers and service providers. Therefore, specific branding strategies on building brand awareness and brand attentiveness should be adopted in the context of trade SMEs.

Although all dimensions reflecting SME brand equity are necessary for SME brands belonging to any business sector, some of them should be treated differently in the context of the trade SMEs. In particular, brand awareness issues of brand familiarity and quality of being well known as well as brand attentive issues about communication channels of SME retailers differ from that of SME manufacturers and service providers. Therefore, specific branding strategies on building brand awareness and brand attentiveness should be adopted in the context of trade SMEs.

Besides being well aware of some difference branding practices across business sectors, policymakers and SME entrepreneurs should highlight the

importance of brand functionality, brand authenticity, brand resonance, brand awareness's issues about brand exposure and brand fame, as well as the aspects of consumer privacy, post-purchase services, and customer privileges in the dimension of brand attentiveness. Full attention should be paid to these three sub-dimensions and some items of SME brand equity because they are the core value underlying SME brands of all business sectors.

Specifically, the brand building and brand communication of SMEs should increase the consumer perception of brand functionality by emphasizing the quality of the product or service and the originality of an SME brand. Moreover, two-way communication should be used to encourage customers to have brand resonance or the active support for their favorite SME brands. Last but not least, an SME brand should boost their brand awareness by increasing their visibility and frequency of being mentioned and should improve the score of consumer privacy by protecting their customers' personal and confidential information.

In case of the comparison of SME brand equity score across business industry, it is highly recommended to use only the score of some dimensions and items including brand functionality, brand authenticity, brand resonance, brand awareness's issues about brand exposure and brand fame, as well as the aspects of consumer privacy, post-purchase services, and customer privileges in the dimension of brand attentiveness.

Another point worth mentioning here is the benefits of building and measuring SME brand equity. Since SME brand equity had a significant direct effect on consumers' positive responses including brand preference, brand loyalty, and word of mouth within all three industries, SME brand owners should build and measure their

businesses' customer-based brand equity which, in turn, influences the customers' positive responses that are the key drivers to SME brands' long-term competitive advantage.





APPENDICES

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

Appendix A

Questionnaire for exploring SME brand equity's dimensions and selecting brand stimuli within the manufacturing context

แบบสอบถามความคิดเห็นของผู้บริโภคต่อแบรนด์เอสเอ็มอีภาคการผลิตสินค้า

แบบสอบถามนี้เป็นส่วนหนึ่งของวิทยานิพนธ์เรื่องการวัดคุณค่าตราสินค้าวิสาหกิจขนาดกลางและขนาดย่อม คณะนิเทศศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย เพื่อศึกษาความคิดเห็นของผู้บริโภคที่มีต่อตราสินค้า จึงขอความกรุณาทุกท่านให้ความร่วมมือตอบแบบสอบถามให้ครบทุกข้อตามความเป็นจริง ผู้วิจัยขอรับรองว่า จะนำข้อมูลไปใช้ประโยชน์สำหรับการศึกษาวิจัยครั้งนี้เท่านั้น โดยจะเก็บข้อมูลทั้งหมดเป็นความลับและนำเสนอผลสรุปในภาพรวม ไม่มีการอ้างถึงคำตอบรายบุคคลแต่อย่างใด หากท่านมีข้อเสนอแนะ กรุณาติดต่อผู้วิจัยได้ที่ หมายเลขโทรศัพท์ 08-6500-8559 หรืออีเมล Nitcha.C@student.chula.ac.th

คำชี้แจง กรุณาอ่านข้อความต่อไปนี้ เมื่ออ่านจบแล้วให้ทำเครื่องหมาย ✓ ใน () หน้าข้อ เพื่อทำความเข้าใจก่อนตอบคำถาม

() **แบรนด์ (Brand)** ไม่ได้หมายถึงแค่ชื่อยี่ห้อเท่านั้น แต่เป็นภาพรวมของความคิด ความรู้สึกทั้งหมดที่ปรากฏขึ้นในใจคุณ เมื่อคุณนึกถึงธุรกิจรายใดรายหนึ่ง

แบรนด์เอสเอ็มอี หมายถึง ธุรกิจที่มีสินทรัพย์ถาวร 50-200 ล้านบาท โดยมีลักษณะเด่น คือ

- () 1. สินค้า/บริการมักทำได้ง่าย ไม่ใช่เครื่องจักรหรือเทคโนโลยีขั้นสูง หรือเป็นร้านค้าที่รับสินค้าจากร้านอื่น ๆ มาขาย
- () 2. มักสามารถบอกให้ร้านปรับเปลี่ยนรายละเอียดของสินค้า/บริการ ตามใจของเราได้ เช่น สั่งให้ปักชื่อลงบนหมวก
- () 3. มักมีสาขาเดียว หรือมีสาขาไม่มาก
- () 4. แทบไม่โฆษณาทางหนังสือพิมพ์ โทรทัศน์ช่องหลัก แต่มักโฆษณาผ่านอินเทอร์เน็ตผ่านหน้าร้าน
- () 5. เจ้าของกิจการมักประชาสัมพันธ์สินค้าด้วยตนเอง
- () 6. เป็นที่รู้จักจากการบอกต่อ หรือเป็นกระแสในโลกอินเทอร์เน็ต

() **แบรนด์เอสเอ็มอีภาคการผลิตสินค้า** หมายถึง ธุรกิจที่เกี่ยวข้องกับการผลิตสินค้าทุกประเภท โดยการผลิตสินค้าหมายถึง การเปลี่ยนรูปวัตถุดิบให้เป็นผลิตภัณฑ์ชนิดใหม่ด้วยเครื่องจักรกลหรือเคมีภัณฑ์ ซึ่งใช้เครื่องจักรหรือทำด้วยมือก็ได้ ทั้งนี้ ยังรวมถึง การแปรรูปผลิตผลการเกษตร การผลิตที่มีลักษณะเป็นวิสาหกิจชุมชน และการผลิตที่เป็นการประกอบอุตสาหกรรมในครัวเรือน

**ในฐานะที่คุณเป็นผู้บริโภค คุณคิดว่า แบรินด์เอสเอ็มอีภาคการผลิตสินค้าที่ดี
ควรมีลักษณะอย่างไร**

คำถาม ในฐานะที่คุณเป็นผู้บริโภค ตามความเห็นของคุณ แบรินด์เอสเอ็มอีภาคการผลิตสินค้าที่ดีควรมีลักษณะต่อไปนี้มากน้อยเพียงใด กรุณาเลือกโดยวงกลมล้อม ตัวเลขที่ตรงกับระดับความคิดเห็นของคุณมากที่สุด โดยที่

- 1 หมายถึง คุณคิดว่า แบรินด์เอสเอ็มอีภาคการผลิตสินค้าที่ดี ควรมีลักษณะนั้น "น้อยที่สุด"
- 2 หมายถึง คุณคิดว่า แบรินด์เอสเอ็มอีภาคการผลิตสินค้าที่ดี ควรมีลักษณะนั้น "น้อย"
- 3 หมายถึง คุณคิดว่า แบรินด์เอสเอ็มอีภาคการผลิตสินค้าที่ดี ควรมีลักษณะนั้น "ปานกลาง"
- 4 หมายถึง คุณคิดว่า แบรินด์เอสเอ็มอีภาคการผลิตสินค้าที่ดี ควรมีลักษณะนั้น "มาก"
- 5 หมายถึง คุณคิดว่า แบรินด์เอสเอ็มอีภาคการผลิตสินค้าที่ดี ควรมีลักษณะนั้น "มากที่สุด"

ตอนที่ 1 คุณเห็นว่า "แบรินด์เอสเอ็มอีภาคการผลิตสินค้าที่ดี" ควรมีลักษณะต่อไปนี้มากน้อยเพียงใด

	มากที่สุด			น้อยที่สุด		
1. มีเอกลักษณ์ที่แตกต่างจากแบรนด์อื่น ๆ	5	4	3	2	1	
2. มีความทันสมัย	5	4	3	2	1	
3. สอดคล้องกับลักษณะการใช้ชีวิต (ไลฟ์สไตล์) ของคุณ	5	4	3	2	1	
4. ตรงกับรสนิยมของคุณ	5	4	3	2	1	
5. ให้ความรู้สึกเป็นกันเอง	5	4	3	2	1	
6. หาซื้อได้ง่าย	5	4	3	2	1	
7. ผ่านการรับรองคุณภาพจากหน่วยงานที่น่าเชื่อถือ	5	4	3	2	1	
8. โดดงัดในสินค้าประเภทนั้น	5	4	3	2	1	
9. เป็นต้นตำรับของสินค้าชนิดนั้น	5	4	3	2	1	
10. คงจุดเด่นของแบรนด์ไว้ได้อย่างสม่ำเสมอ	5	4	3	2	1	
11. มีประวัติความเป็นมาที่น่าสนใจ	5	4	3	2	1	
12. สร้างสรรค์สินค้าอย่างดี เข้าถึงรายละเอียดของลูกค้ำ	5	4	3	2	1	
13. มีความเชี่ยวชาญในการผลิตสินค้าประเภทนั้น	5	4	3	2	1	

ตอนที่ 1 คุณเห็นว่า "แบรนด์เอสเอ็มอีภาคการผลิตสินค้าที่ดี" ควรมีลักษณะต่อไปนี้มากน้อยเพียงใด

	มากที่สุด			น้อยที่สุด		
14. มีสินค้าที่แปลกใหม่	5	4	3	2	1	
15. มีสินค้าให้เลือกหลากหลาย	5	4	3	2	1	
16. มีสินค้าที่ปลอดภัย	5	4	3	2	1	
17. มีสินค้าที่คุณภาพดี	5	4	3	2	1	
18. มีสินค้าที่คุณภาพเหมาะสมกับราคา	5	4	3	2	1	
19. มีสินค้าที่คุณถูกใจ	5	4	3	2	1	
20. มีสินค้าที่มีประโยชน์ใช้งานได้จริง	5	4	3	2	1	
21. มีสินค้าที่ตรงตามคำโฆษณา	5	4	3	2	1	
22. รักษามาตรฐานของสินค้า	5	4	3	2	1	
23. แนะนำข้อมูลที่เป็นประโยชน์ในการเลือกซื้อสินค้า	5	4	3	2	1	
24. ทำให้คุณรู้สึกมีความสุขเมื่อใช้แบรนด์นี้	5	4	3	2	1	
25. มีการพัฒนาอย่างต่อเนื่อง	5	4	3	2	1	
26. มีสิ่งแบรนด์อื่น ๆ ยังไม่มี	5	4	3	2	1	
27. ทำให้คุณได้ประสบการณ์แปลกใหม่อย่างไม่เคยได้รับมาก่อน	5	4	3	2	1	
28. ทำให้คุณพอใจเกินความคาดหมาย	5	4	3	2	1	
29. ให้ความช่วยเหลือคุณอย่างเต็มที่	5	4	3	2	1	
30. ให้ข้อมูลเกี่ยวกับสินค้าตามความเป็นจริง	5	4	3	2	1	
31. สามารถปรับเปลี่ยนรูปแบบของสินค้าได้ตามคำสั่งซื้อ	5	4	3	2	1	
32. รักษาความลับและไม่เผยแพร่ข้อมูลส่วนตัวของลูกค้า	5	4	3	2	1	
33. มีบริการหลังการขาย เช่น ให้เปลี่ยนสินค้าหรือคืนเงิน	5	4	3	2	1	
34. ให้สิทธิพิเศษคุณได้มากกว่าแบรนด์อื่น ๆ	5	4	3	2	1	
35. มีช่องทางให้คุณติดต่อสื่อสารได้อย่างสะดวก	5	4	3	2	1	

(โปรดพลิกหน้าต่อไป)

ตอนที่ 1 คุณเห็นว่า "แบรนด์เอสเอ็มอีภาคการผลิตสินค้าที่ดี" ควรมีลักษณะต่อไปนี้มากน้อยเพียงใด

	มากที่สุด			น้อยที่สุด		
36. นำความคิดเห็นของลูกค้ามาปรับปรุงพัฒนา	5	4	3	2	1	
37. ใส่ใจความต้องการของผู้บริโภค	5	4	3	2	1	
38. ช่วยสนับสนุนคนในท้องถิ่น	5	4	3	2	1	
39. ไม่ทำลายสิ่งแวดล้อม	5	4	3	2	1	
40. มีความรับผิดชอบต่อสังคม	5	4	3	2	1	
41. ช่วยเหลือและทำประโยชน์ให้สังคม	5	4	3	2	1	

ตอนที่ 2 คุณเห็นด้วยกับคำกล่าวต่อไปนี้มากน้อยเพียงใด กรุณาเลือกโดยวงกลมล้อม ตัวเลขที่ตรงกับระดับความคิดเห็นของคุณมากที่สุด

หากคุณ **ชอบ** แบรนด์เอสเอ็มอีภาคการผลิตสินค้าแบรนด์ใดแบรนด์หนึ่งแล้ว
คุณเห็นด้วยกับคำกล่าวต่อไปนี้มากน้อยเพียงใด

	เห็นด้วยมากที่สุด			เห็นด้วยน้อยที่สุด		
1. การซื้อแบรนด์เอสเอ็มอีภาคการผลิตสินค้าที่คุณชอบ แทนที่จะซื้อแบรนด์อื่น ๆ เป็นเรื่องที่เหมาะสม แม้ว่าสองแบรนด์นั้นจะเหมือนกันก็ตาม	5	4	3	2	1	
2. คุณอยากซื้อแบรนด์เอสเอ็มอีภาคการผลิตสินค้าที่คุณชอบ แม้ว่าแบรนด์อื่นจะมีคุณสมบัติเช่นเดียวกัน	5	4	3	2	1	
3. ถ้ามีแบรนด์อื่นที่ดีพอ ๆ กัน คุณก็ยังยืนยันที่จะเลือกแบรนด์เอสเอ็มอีภาคการผลิตสินค้าที่คุณชอบ	5	4	3	2	1	
4. คุณคิดว่า การซื้อแบรนด์เอสเอ็มอีภาคการผลิตสินค้าที่ฉันชอบ เป็นการตัดสินใจที่ชาญฉลาด หากแบรนด์ที่ชอบดูไม่แตกต่างจากแบรนด์อื่น ๆ เลย	5	4	3	2	1	

(โปรดพลิกหน้าต่อไป)

ตอนที่ 3 กรุณาทำเครื่องหมาย ✓ ใน () หน้าข้อเอสเอ็มอีภาคการผลิตสินค้าที่คุณ “เคยซื้อและชอบที่สุด”
เพียง 1 แปรนตร์

- () 1. น้ำเต้าหู้นางพยาบาล () 2. น้ำเต้าหู้โทฟูซัง () 3. น้ำเต้าหู้ฟองฟอง () 4. ไม่เคยซื้อเลย



ตอนที่ 4 กรุณาทำเครื่องหมาย ✓ ใน () หน้าข้อที่คุณต้องการเลือก

1. เพศ () 1. ชาย () 2. หญิง
2. อายุ () 1. 18 – 22 ปี () 2. 23 – 27 ปี
() 3. 28 – 32 ปี () 4. 33 – 37 ปี
() 5. 38 – 42 ปี () 6. 43 – 47 ปี
() 7. 48 – 52 ปี () 8. 53 – 55 ปี
3. การศึกษาสูงสุด () 1. ต่ำกว่าปริญญาตรี () 2. ปริญญาตรี
() 3. สูงกว่าปริญญาตรี
4. รายได้ () 1. ต่ำกว่า 10,000 บาท () 2. 10,000 – 20,000 บาท
() 3. 20,001 – 30,000 บาท () 4. 30,001 – 40,000 บาท
() 5. 40,001 – 50,000 บาท () 6. 50,001 บาท ขึ้นไป
5. อาชีพ () 1. นิสิตนักศึกษา () 2. รับราชการ / รัฐวิสาหกิจ
() 3. บริษัทเอกชน () 4. ธุรกิจส่วนตัว
() 5. รับจ้าง () 6. อื่นๆ (โปรดระบุ))

ขอขอบคุณอย่างยิ่งสำหรับความร่วมมือในการตอบแบบสอบถาม

Appendix B

Questionnaire for exploring SME brand equity's dimensions and selecting brand stimuli within the service context

แบบสอบถามความคิดเห็นของผู้บริโภคต่อแบรนด์เอสเอ็มอีภาคการบริการ

แบบสอบถามนี้เป็นส่วนหนึ่งของวิทยานิพนธ์เรื่องการวัดคุณค่าตราสินค้าวิสาหกิจขนาดกลางและขนาดย่อม คณะนิเทศศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย เพื่อศึกษาความคิดเห็นของผู้บริโภคที่มีต่อตราสินค้า จึงขอความกรุณาทุกท่านให้ความร่วมมือตอบแบบสอบถามให้ครบทุกข้อตามความเป็นจริง ผู้วิจัยขอรับรองว่า จะนำข้อมูลไปใช้ประโยชน์สำหรับการศึกษาวิจัยครั้งนี้เท่านั้น โดยจะเก็บข้อมูลทั้งหมดเป็นความลับและนำเสนอผลสรุปในภาพรวม ไม่มีการอ้างถึงคำตอบรายบุคคลแต่อย่างใด หากท่านมีข้อเสนอแนะ กรุณาติดต่อผู้วิจัยได้ที่ หมายเลขโทรศัพท์ 08-6500-8559 หรืออีเมล Nitcha.C@student.chula.ac.th

คำชี้แจง กรุณาอ่านข้อความต่อไปนี้ เมื่ออ่านจบแล้วให้ทำเครื่องหมาย ✓ ใน () หน้าข้อ เพื่อทำความเข้าใจก่อนตอบคำถาม

() **แบรนด์ (Brand)** ไม่ได้หมายถึงแค่ชื่อยี่ห้อเท่านั้น แต่เป็นภาพรวมของความคิด ความรู้สึกทั้งหมดที่ปรากฏขึ้นในใจคุณ เมื่อคุณนึกถึงธุรกิจรายใดรายหนึ่ง

แบรนด์เอสเอ็มอี หมายถึง ธุรกิจที่มีสินทรัพย์ถาวร 50-200 ล้านบาท โดยมีลักษณะเด่น คือ

- () 1. สินค้า/บริการมักทำได้ง่าย ไม่ใช่เครื่องจักรหรือเทคโนโลยีขั้นสูง หรือเป็นร้านค้าที่รับสินค้าจากร้านอื่น ๆ มาขาย
- () 2. มักสามารถบอกให้ร้านปรับเปลี่ยนรายละเอียดของสินค้า/บริการ ตามใจของเราได้ เช่น สั่งให้ปักชื่อลงบนหมวก
- () 3. มักมีสาขาเดียว หรือมีสาขาไม่มาก
- () 4. แทบไม่โฆษณาทางหนังสือพิมพ์ โทรทัศน์ช่องหลัก แต่มักโฆษณาผ่านอินเทอร์เน็ตผ่านหน้าร้าน
- () 5. เจ้าของกิจการมักประชาสัมพันธ์สินค้าด้วยตนเอง
- () 6. เป็นที่รู้จักจากการบอกต่อ หรือเป็นกระแสในโลกอินเทอร์เน็ต

() **แบรนด์เอสเอ็มอีภาคการบริการ** หมายถึง ธุรกิจที่เกี่ยวข้องกับการศึกษา การสุขภาพ การบันเทิง การขนส่ง การก่อสร้างและอสังหาริมทรัพย์ การโรงแรมและห้องพัก การภัตตาคาร การขายอาหาร การขายเครื่องดื่มของภัตตาคารและร้านอาหาร การให้บริการเช่าสิ่งบันเทิงและการพักผ่อนหย่อนใจ การให้บริการส่วนบุคคล บริการในครัวเรือน บริการที่ให้กับธุรกิจ การซ่อมแซมทุกชนิด และการท่องเที่ยว รวมถึงธุรกิจเกี่ยวกับการท่องเที่ยว

**ในฐานะที่คุณเป็นผู้บริโภค คุณคิดว่า แบรินด์เอสเอ็มอีภาคการบริการที่ดี
ควรมีลักษณะอย่างไร**

คำถาม ในฐานะที่คุณเป็นผู้บริโภค ตามความเห็นของคุณ แบรินด์เอสเอ็มอีภาคการบริการที่ดีควรมีลักษณะ
ต่อไปนี้มากน้อยเพียงใด กรุณาเลือกโดยวงกลมล้อม ตัวเลขที่ตรงกับระดับความคิดเห็นของคุณมากที่สุด
โดยที่

- 1 หมายถึง คุณคิดว่า แบรินด์เอสเอ็มอีภาคการบริการที่ดี ควรมีลักษณะนั้น "น้อยที่สุด"
- 2 หมายถึง คุณคิดว่า แบรินด์เอสเอ็มอีภาคการบริการที่ดี ควรมีลักษณะนั้น "น้อย"
- 3 หมายถึง คุณคิดว่า แบรินด์เอสเอ็มอีภาคการบริการที่ดี ควรมีลักษณะนั้น "ปานกลาง"
- 4 หมายถึง คุณคิดว่า แบรินด์เอสเอ็มอีภาคการบริการที่ดี ควรมีลักษณะนั้น "มาก"
- 5 หมายถึง คุณคิดว่า แบรินด์เอสเอ็มอีภาคการบริการที่ดี ควรมีลักษณะนั้น "มากที่สุด"

ตอนที่ 1 คุณเห็นว่า "แบรินด์เอสเอ็มอีภาคการบริการที่ดี" ควรมีลักษณะต่อไปนี้มากน้อยเพียงใด

	มากที่สุด					น้อยที่สุด				
1. มีเอกลักษณ์ที่แตกต่างจากแบรนด์อื่น ๆ	5	4	3	2	1	5	4	3	2	1
2. มีความทันสมัย	5	4	3	2	1	5	4	3	2	1
3. สอดคล้องกับลักษณะการใช้ชีวิต (ไลฟ์สไตล์) ของคุณ	5	4	3	2	1	5	4	3	2	1
4. ตรงกับรสนิยมของคุณ	5	4	3	2	1	5	4	3	2	1
5. ให้ความรู้สึกเป็นกันเอง	5	4	3	2	1	5	4	3	2	1
6. หาซื้อได้ง่าย	5	4	3	2	1	5	4	3	2	1
7. ผ่านการรับรองคุณภาพจากหน่วยงานที่น่าเชื่อถือ	5	4	3	2	1	5	4	3	2	1
8. โดดงัดในการบริการประเภทนั้น	5	4	3	2	1	5	4	3	2	1
9. เป็นต้นตำรับของการบริการชนิดนั้น	5	4	3	2	1	5	4	3	2	1
10. คงจุดเด่นของแบรนด์ไว้ได้อย่างสม่ำเสมอ	5	4	3	2	1	5	4	3	2	1
11. มีประวัติความเป็นมาที่น่าสนใจ	5	4	3	2	1	5	4	3	2	1
12. สร้างสรรค์การบริการอย่างดี เข้าถึงรายละเอียดของลูกค้า	5	4	3	2	1	5	4	3	2	1
13. มีความเชี่ยวชาญในการบริการประเภทนั้น	5	4	3	2	1	5	4	3	2	1

ตอนที่ 1 คุณเห็นว่า "แบรนด์เอสเอ็มอีภาคการบริการที่ดี" ควรมีลักษณะต่อไปนี้มากน้อยเพียงใด

	มากที่สุด		น้อยที่สุด		
14. มีการบริการที่แปลกใหม่	5	4	3	2	1
15. มีการบริการให้เลือกหลากหลาย	5	4	3	2	1
16. มีการบริการที่ปลอดภัย	5	4	3	2	1
17. มีการบริการที่คุณภาพดี	5	4	3	2	1
18. มีการบริการที่คุณภาพเหมาะสมกับราคา	5	4	3	2	1
19. มีการบริการที่คุณถูกใจ	5	4	3	2	1
20. มีการบริการที่มีประโยชน์ใช้งานได้จริง	5	4	3	2	1
21. มีการบริการที่ตรงตามคำโฆษณา	5	4	3	2	1
22. รักษามาตรฐานของการบริการ	5	4	3	2	1
23. แนะนำข้อมูลที่เป็นประโยชน์ในการเลือกซื้อ	5	4	3	2	1
24. ทำให้คุณรู้สึกมีความสุขเมื่อใช้แบรนด์นี้	5	4	3	2	1
25. มีการพัฒนาอย่างต่อเนื่อง	5	4	3	2	1
26. มีสิ่งแบรนด์อื่น ๆ ยังไม่มี	5	4	3	2	1
27. ทำให้คุณได้ประสบการณ์แปลกใหม่อย่างที่ไม่เคยได้รับมาก่อน	5	4	3	2	1
28. ทำให้คุณพอใจเกินความคาดหมาย	5	4	3	2	1
29. ให้ความช่วยเหลือคุณอย่างเต็มที่	5	4	3	2	1
30. ให้ข้อมูลเกี่ยวกับการบริการตามความเป็นจริง	5	4	3	2	1
31. สามารถปรับเปลี่ยนรูปแบบของการบริการได้ตามคำสั่งซื้อ	5	4	3	2	1
32. รักษาความลับและไม่เผยแพร่ข้อมูลส่วนตัวของลูกค้า	5	4	3	2	1
33. มีบริการหลังการขาย เช่น ให้เปลี่ยนสินค้าหรือคืนเงิน	5	4	3	2	1
34. ให้สิทธิพิเศษคุณได้มากกว่าแบรนด์อื่น ๆ	5	4	3	2	1
35. มีช่องทางให้คุณติดต่อสื่อสารได้อย่างสะดวก	5	4	3	2	1

ตอนที่ 1 คุณเห็นว่า "แบรนด์เอสเอ็มอีภาคการบริการที่ดี" ควรมีลักษณะต่อไปนี้มากน้อยเพียงใด

	มากที่สุด			น้อยที่สุด		
36. นำความคิดเห็นของลูกค้ามาปรับปรุงพัฒนา	5	4	3	2	1	
37. ใส่ใจความต้องการของผู้บริโภค	5	4	3	2	1	
38. ช่วยสนับสนุนคนในท้องถิ่น	5	4	3	2	1	
39. ไม่ทำลายสิ่งแวดล้อม	5	4	3	2	1	
40. มีความรับผิดชอบต่อสังคม	5	4	3	2	1	
41. ช่วยเหลือและทำประโยชน์ให้สังคม	5	4	3	2	1	

ตอนที่ 2 คุณเห็นด้วยกับคำกล่าวต่อไปนี้มากน้อยเพียงใด กรุณาเลือกโดยวงกลมล้อม ตัวเลขที่ตรงกับระดับความคิดเห็นของคุณมากที่สุด

หากคุณ ชอบ แบรนด์เอสเอ็มอีภาคการบริการแบรนด์ใดแบรนด์หนึ่งแล้ว
คุณเห็นด้วยกับคำกล่าวต่อไปนี้มากน้อยเพียงใด

	เห็นด้วยมากที่สุด			เห็นด้วยน้อยที่สุด		
1. การใช้บริการแบรนด์เอสเอ็มอีภาคการบริการที่คุณชอบ แทนที่จะซื้อแบรนด์อื่น ๆ เป็นเรื่องที่เหมาะสม แม้ว่าสองแบรนด์นั้นจะเหมือนกันก็ตาม	5	4	3	2	1	
2. คุณอยากใช้บริการแบรนด์เอสเอ็มอีภาคการบริการที่คุณชอบ แม้ว่าแบรนด์อื่นจะมีคุณสมบัติเช่นเดียวกัน	5	4	3	2	1	
3. ถ้ามีแบรนด์อื่นที่ดีพอ ๆ กัน คุณยังยืนยันที่จะเลือกแบรนด์เอสเอ็มอีภาคการบริการที่คุณชอบ	5	4	3	2	1	
4. คุณคิดว่า การใช้บริการแบรนด์เอสเอ็มอีภาคการบริการที่คุณชอบ เป็นการตัดสินใจที่ชาญฉลาด หากแบรนด์อื่น ๆ ดูไม่แตกต่างกันเลย	5	4	3	2	1	

(โปรดพลิกหน้าต่อไป)

ตอนที่ 3 กรุณาทำเครื่องหมาย ✓ ใน () หน้าข้อเอสเอ็มอีภาคการบริการที่คุณ “เคยใช้บริการและชอบที่สุด” เพียง 1 แบรินด์

() 1. ร้านเจฟเฟอร์ () 2. ร้านซานตาเฟ () 3. ร้านอีทแอมอาร์ () 4. ไม่เคยไปเลย



ตอนที่ 4 กรุณาทำเครื่องหมาย ✓ ใน () หน้าข้อที่คุณต้องการเลือก

1. เพศ () 1. ชาย () 2. หญิง
2. อายุ () 1. 18 – 22 ปี () 2. 23 – 27 ปี
() 3. 28 – 32 ปี () 4. 33 – 37 ปี
() 5. 38 – 42 ปี () 6. 43 – 47 ปี
() 7. 48 – 52 ปี () 8. 53 – 55 ปี
3. การศึกษาสูงสุด () 1. ต่ำกว่าปริญญาตรี () 2. ปริญญาตรี
() 3. สูงกว่าปริญญาตรี
4. รายได้ () 1. ต่ำกว่า 10,000 บาท () 2. 10,000 – 20,000 บาท
() 3. 20,001 – 30,000 บาท () 4. 30,001 – 40,000 บาท
() 5. 40,001 – 50,000 บาท () 6. 50,001 บาท ขึ้นไป
5. อาชีพ () 1. นิสิตนักศึกษา () 2. รับราชการ / รัฐวิสาหกิจ
() 3. บริษัทเอกชน () 4. ธุรกิจส่วนตัว
() 5. รับจ้าง () 6. อื่นๆ (โปรดระบุ))

ขอขอบคุณอย่างยิ่งสำหรับความร่วมมือในการตอบแบบสอบถาม

Appendix C

Questionnaire for exploring SME brand equity's dimensions and selecting brand stimuli within the trade context

แบบสอบถามความคิดเห็นของผู้บริโภคต่อแบรนด์เอสเอ็มอีภาคการค้า

แบบสอบถามนี้เป็นส่วนหนึ่งของวิทยานิพนธ์เรื่องการวัดคุณค่าตราสินค้าวิสาหกิจขนาดกลางและขนาดย่อม คณะนิเทศศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย เพื่อศึกษาความคิดเห็นของผู้บริโภคที่มีต่อตราสินค้า จึงขอความกรุณาทุกท่านให้ความร่วมมือตอบแบบสอบถามให้ครบทุกข้อตามความเป็นจริง ผู้วิจัยขอรับรองว่า จะนำข้อมูลไปใช้ประโยชน์สำหรับการศึกษาวิจัยครั้งนี้เท่านั้น โดยจะเก็บข้อมูลทั้งหมดเป็นความลับและนำเสนอผลสรุปในภาพรวม ไม่มีการอ้างถึงคำตอบรายบุคคลแต่อย่างใด หากท่านมีข้อเสนอแนะ กรุณาติดต่อผู้วิจัยได้ที่ หมายเลขโทรศัพท์ 08-6500-8559 หรืออีเมลล์

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คำชี้แจง กรุณาอ่านข้อความต่อไปนี้ เมื่ออ่านจบแล้วให้ทำเครื่องหมาย ✓ ใน () หน้าข้อ เพื่อทำความเข้าใจก่อนตอบคำถาม

() **แบรนด์ (Brand) ไม่ได้หมายถึงแค่ชื่อยี่ห้อเท่านั้น แต่เป็นภาพรวมของความคิด ความรู้สึกทั้งหมดที่ปรากฏขึ้นในใจคุณ เมื่อคุณนึกถึงธุรกิจรายใดรายหนึ่ง**

แบรนด์เอสเอ็มอี หมายถึง ธุรกิจที่มีสินทรัพย์ถาวร 50-200 ล้านบาท โดยมีลักษณะเด่น คือ

- () 1. สินค้า/บริการมักทำได้ง่าย ไม่ใช่เครื่องจักรหรือเทคโนโลยีขั้นสูง หรือเป็นร้านค้าที่รับสินค้าจากร้านอื่น ๆ มาขาย
- () 2. มักสามารถบอกให้ร้านปรับเปลี่ยนรายละเอียดของสินค้า/บริการ ตามใจของเราได้ เช่น สั่งให้ปักชื่อลงบนหมวก
- () 3. มักมีสาขาเดียว หรือมีสาขาไม่มาก
- () 4. แทบไม่โฆษณาทางหนังสือพิมพ์ โทรทัศน์ช่องหลัก แต่มักโฆษณาผ่านอินเทอร์เน็ตผ่านหน้าร้าน
- () 5. เจ้าของกิจการมักประชาสัมพันธ์สินค้าด้วยตนเอง
- () 6. เป็นที่รู้จักจากการบอกต่อ หรือเป็นกระแสในโลกอินเทอร์เน็ต

() **แบรนด์เอสเอ็มอีภาคการค้า หมายถึง ธุรกิจที่เกี่ยวข้องกับการค้าทั้งปลีกและส่ง โดยการค้าส่ง คือ การขายสินค้าใหม่และสินค้าใช้แล้วให้แก่ ผู้ค้าปลีก ผู้ใช้ในงานอุตสาหกรรม งานพาณิชย์กรรม สถาบัน ผู้ใช้ในงานวิชาชีพ รวมทั้งผู้ค้าส่งด้วยตนเอง ส่วนการค้าปลีก หมายถึง การขายโดยไม่เปลี่ยนรูปสินค้า ทั้งสินค้าใหม่และสินค้าใช้แล้ว ให้ประชาชนเพื่อการบริโภค หรือการใช้ประโยชน์เฉพาะส่วนบุคคลในครัวเรือน**

**ในฐานะที่คุณเป็นผู้บริโภค คุณคิดว่า แบรินด์เอสเอ็มอีภาคการค้าที่ดี
ควรมีลักษณะอย่างไร**

คำถาม ในฐานะที่คุณเป็นผู้บริโภค ตามความเห็นของคุณ แบรินด์เอสเอ็มอีภาคการค้าที่ดีควรมีลักษณะ
ต่อไปนี้มากน้อยเพียงใด กรุณาเลือกโดยวงกลมล้อม ตัวเลขที่ตรงกับระดับความคิดเห็นของคุณมากที่สุด
โดยที่

- 1 หมายถึง คุณคิดว่า แบรินด์เอสเอ็มอีภาคการค้าที่ดี ควรมีลักษณะนั้น "น้อยที่สุด"
- 2 หมายถึง คุณคิดว่า แบรินด์เอสเอ็มอีภาคการค้าที่ดี ควรมีลักษณะนั้น "น้อย"
- 3 หมายถึง คุณคิดว่า แบรินด์เอสเอ็มอีภาคการค้าที่ดี ควรมีลักษณะนั้น "ปานกลาง"
- 4 หมายถึง คุณคิดว่า แบรินด์เอสเอ็มอีภาคการค้าที่ดี ควรมีลักษณะนั้น "มาก"
- 5 หมายถึง คุณคิดว่า แบรินด์เอสเอ็มอีภาคการค้าที่ดี ควรมีลักษณะนั้น "มากที่สุด"

ตอนที่ 1 คุณเห็นว่า "แบรินด์เอสเอ็มอีภาคการค้าที่ดี" ควรมีลักษณะต่อไปนี้มากน้อยเพียงใด

	มากที่สุด			น้อยที่สุด		
1. มีเอกลักษณ์ที่แตกต่างจากแบรนด์อื่น ๆ	5	4	3	2	1	
2. มีความทันสมัย	5	4	3	2	1	
3. สอดคล้องกับลักษณะการใช้ชีวิต (ไลฟ์สไตล์) ของคุณ	5	4	3	2	1	
4. ตรงกับรสนิยมของคุณ	5	4	3	2	1	
5. ให้ความรู้สึกเป็นกันเอง	5	4	3	2	1	
6. หาซื้อได้ง่าย	5	4	3	2	1	
7. ผ่านการรับรองคุณภาพจากหน่วยงานที่น่าเชื่อถือ	5	4	3	2	1	
8. โดดงัดในการจำหน่ายสินค้าประเภทนั้น	5	4	3	2	1	
9. เป็นต้นตำรับของการจำหน่ายสินค้าชนิดนั้น	5	4	3	2	1	
10. คงจุดเด่นของแบรนด์ไว้ได้อย่างสม่ำเสมอ	5	4	3	2	1	
11. มีประวัติความเป็นมาที่น่าสนใจ	5	4	3	2	1	
12. จัดการจำหน่ายสินค้าอย่างดี เข้าถึงรายละเอียด ของลูกค้า	5	4	3	2	1	
13. มีความเชี่ยวชาญในการจำหน่ายสินค้าประเภทนั้น	5	4	3	2	1	

ตอนที่ 1 คุณเห็นว่า "แบรนด์เอสเอ็มอีภาคการค้าที่ดี" ควรมีลักษณะต่อไปนี้มากน้อยเพียงใด

	มากที่สุด			น้อยที่สุด		
14. มีสินค้าที่แปลกใหม่	5	4	3	2	1	
15. มีสินค้าให้เลือกหลากหลาย	5	4	3	2	1	
16. มีสินค้าที่ปลอดภัย	5	4	3	2	1	
17. มีสินค้าที่คุณภาพดี	5	4	3	2	1	
18. มีสินค้าที่คุณภาพเหมาะสมกับราคา	5	4	3	2	1	
19. มีสินค้าที่คุณถูกใจ	5	4	3	2	1	
20. มีสินค้าที่มีประโยชน์ใช้งานได้จริง	5	4	3	2	1	
21. มีสินค้าที่ตรงตามคำโฆษณา	5	4	3	2	1	
22. รักษามาตรฐานของการจำหน่ายสินค้า	5	4	3	2	1	
23. แนะนำข้อมูลที่เป็นประโยชน์ในการเลือกซื้อ	5	4	3	2	1	
24. ทำให้คุณรู้สึกมีความสุขเมื่อใช้แบรนด์นี้	5	4	3	2	1	
25. มีการพัฒนาอย่างต่อเนื่อง	5	4	3	2	1	
26. มีสิ่งที่แบรนด์อื่น ๆ ยังไม่มี	5	4	3	2	1	
27. ทำให้คุณได้ประสบการณ์แปลกใหม่อย่างที่ไม่เคยได้รับมาก่อน	5	4	3	2	1	
28. ทำให้คุณพอใจเกินความคาดหมาย	5	4	3	2	1	
29. ให้ความช่วยเหลือคุณอย่างเต็มที่	5	4	3	2	1	
30. ให้ข้อมูลเกี่ยวกับสินค้าตามความเป็นจริง	5	4	3	2	1	
31. สามารถปรับเปลี่ยนรูปแบบของสินค้าได้ตามคำสั่งซื้อ	5	4	3	2	1	
32. รักษาความลับและไม่เผยแพร่ข้อมูลส่วนตัวของลูกค้า	5	4	3	2	1	
33. มีบริการหลังการขาย เช่น ให้เปลี่ยนสินค้าหรือคืนเงิน	5	4	3	2	1	
34. ให้สิทธิพิเศษคุณได้มากกว่าแบรนด์อื่น ๆ	5	4	3	2	1	
35. มีช่องทางให้คุณติดต่อสื่อสารได้อย่างสะดวก	5	4	3	2	1	

ตอนที่ 1 คุณเห็นว่า "แบรนด์เอสเอ็มอีภาคการค้าที่ดี" ควรมีลักษณะต่อไปนี้มากน้อยเพียงใด

	มากที่สุด			น้อยที่สุด		
36. นำความคิดเห็นของลูกค้ามาปรับปรุงพัฒนา	5	4	3	2	1	
37. ใส่ใจความต้องการของผู้บริโภค	5	4	3	2	1	
38. ช่วยสนับสนุนคนในท้องถิ่น	5	4	3	2	1	
39. ไม่ทำลายสิ่งแวดล้อม	5	4	3	2	1	
40. มีความรับผิดชอบต่อสังคม	5	4	3	2	1	
41. ช่วยเหลือและทำประโยชน์ให้สังคม	5	4	3	2	1	

ตอนที่ 2 คุณเห็นด้วยกับคำกล่าวต่อไปนี้มากน้อยเพียงใด กรุณาเลือกโดยวงกลมล้อม ตัวเลขที่ตรงกับระดับความคิดเห็นของคุณมากที่สุด

หากคุณ ชอบ แบรนด์เอสเอ็มอีภาคการค้า แบรนด์ใด แบรนด์หนึ่งแล้ว
 คุณเห็นด้วยกับคำกล่าวต่อไปนี้มากน้อยเพียงใด

	เห็นด้วยมากที่สุด			เห็นด้วยน้อยที่สุด		
1. การซื้อสินค้าจากแบรนด์เอสเอ็มอีภาคการค้าที่คุณชอบ แทนที่จะซื้อจากร้านอื่น ๆ เป็นเรื่องที่เหมาะสม แม้ว่าสองร้านนั้นจะเหมือนกันก็ตาม	5	4	3	2	1	
2. คุณอยากซื้อสินค้าจากแบรนด์เอสเอ็มอีภาคการค้าที่คุณชอบ แม้ว่าร้านอื่นจะมีคุณสมบัติเช่นเดียวกัน	5	4	3	2	1	
3. ถ้ามีร้านอื่นที่ดีพอ ๆ กัน คุณยังยืนยันที่จะเลือกซื้อสินค้าจากแบรนด์เอสเอ็มอีภาคการค้าที่คุณชอบ	5	4	3	2	1	
4. คุณคิดว่า การซื้อสินค้าจากแบรนด์เอสเอ็มอีภาคการค้าที่คุณชอบเป็นการตัดสินใจที่ชาญฉลาด หากร้านอื่น ๆ ดูไม่แตกต่างกันเลย	5	4	3	2	1	

(โปรดพลิกหน้าต่อไป)

ตอนที่ 3 กรุณาทำเครื่องหมาย ✓ ใน () หน้าข้อเอสเอ็มอีภาคการค้าที่คุณ “เคยไปซื้อและชอบที่สุด”
เพียง 1 แบรินด์

() 1. ร้านอีฟแอนด์บอย () 2. ร้านเจ้เลี้ยง () 3. ร้านบิวเทรียม () 4. ไม่เคยไปเลย

EVEANDBOY



ตอนที่ 4 กรุณาทำเครื่องหมาย ✓ ใน () หน้าข้อที่คุณต้องการเลือก

1. เพศ () 1. ชาย () 2. หญิง
2. อายุ () 1. 18 – 22 ปี () 2. 23 – 27 ปี
() 3. 28 – 32 ปี () 4. 33 – 37 ปี
() 5. 38 – 42 ปี () 6. 43 – 47 ปี
() 7. 48 – 52 ปี () 8. 53 – 55 ปี
3. การศึกษาสูงสุด () 1. ต่ำกว่าปริญญาตรี () 2. ปริญญาตรี
() 3. สูงกว่าปริญญาตรี
4. รายได้ () 1. ต่ำกว่า 10,000 บาท () 2. 10,000 – 20,000 บาท
() 3. 20,001 – 30,000 บาท () 4. 30,001 – 40,000 บาท
() 5. 40,001 – 50,000 บาท () 6. 50,001 บาท ขึ้นไป
5. อาชีพ () 1. นิสิตนักศึกษา () 2. รับราชการ / รัฐวิสาหกิจ
() 3. บริษัทเอกชน () 4. ธุรกิจส่วนตัว
() 5. รับจ้าง () 6. อื่นๆ (โปรดระบุ))

ขอขอบคุณอย่างยิ่งสำหรับความร่วมมือในการตอบแบบสอบถาม

Appendix D

Questionnaire for measuring brand equity of the selected manufacturing SME brands (Tofusan)

แบบสอบถามเพื่อคัดเลือกกลุ่มตัวอย่าง

แบบสอบถามนี้เป็นส่วนหนึ่งของวิทยานิพนธ์เรื่องการวัดคุณค่าตราสินค้าวิสาหกิจขนาดกลางและขนาดย่อม คณะนิเทศศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย เพื่อศึกษาความคิดเห็นของผู้บริโภคที่มีต่อตราสินค้า จึงขอความกรุณาทุกท่านให้ความร่วมมือตอบแบบสอบถามให้ครบทุกข้อตามความเป็นจริง ผู้วิจัยขอรับรองว่า จะนำข้อมูลไปใช้ประโยชน์สำหรับการศึกษาวิจัยครั้งนี้เท่านั้น โดยจะเก็บข้อมูลทั้งหมดเป็นความลับและนำเสนอผลสรุปในภาพรวม ไม่มีการอ้างถึงคำตอบรายบุคคลแต่อย่างใด หากท่านมีข้อเสนอแนะ กรุณาติดต่อผู้วิจัยได้ที่ หมายเลขโทรศัพท์ 08-6500-8559 หรืออีเมล Niticha.C@student.chula.ac.th



1. ภายในระยะเวลา 1 เดือนนี้ คุณได้ซื้อน้ำเต้าหู้บรรจุขวด โทฟูซัง (Tofusan) หรือไม่

() 1. ซื้

() 2. ไม่ได้ซื้อ (ปิดการสัมภาษณ์)

แบบสอบถามเพื่อศึกษาความคิดเห็นของผู้บริโภคที่มีต่อหน้าเต้าหู้บรรจุขวด “โทฟูซัง”

แบบสอบถามนี้เป็นส่วนหนึ่งของวิทยานิพนธ์เรื่องการวัดคุณค่าตราสินค้าวิสาหกิจขนาดกลาง และขนาดย่อม คณะนิเทศศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย เพื่อศึกษาความคิดเห็นของผู้บริโภคที่มีต่อตราสินค้า จึงขอความกรุณาทุกท่านให้ความร่วมมือตอบแบบสอบถามให้ครบทุกข้อตามความเป็นจริง ผู้วิจัยขอรับรองว่า จะนำข้อมูลไปใช้ประโยชน์สำหรับการศึกษาวิจัยครั้งนี้เท่านั้น โดยจะเก็บข้อมูลทั้งหมดเป็นความลับและนำเสนอผลสรุปในภาพรวม ไม่มีการอ้างถึงคำตอบรายบุคคลแต่อย่างใด หากท่านมีข้อเสนอแนะ กรุณาติดต่อผู้วิจัยได้ที่ หมายเลขโทรศัพท์ 08-6500-8559 หรืออีเมล Nitcha.C@student.chula.ac.th

คำชี้แจง คุณเห็นด้วยกับข้อความต่อไปนี้มากน้อยเพียงใด กรุณาเลือกโดยวงกลม ล้อมตัวเลขที่ตรงกับระดับความคิดเห็นของคุณมากที่สุด โดยที่

- | | | | |
|---|-------------|---------------------|----------------|
| 1 | หมายถึง คุณ | “ไม่เห็นด้วยเลย” | กับข้อความนั้น |
| 2 | หมายถึง คุณ | “ไม่ค่อยเห็นด้วย” | กับข้อความนั้น |
| 3 | หมายถึง คุณ | “เห็นด้วยปานกลาง” | กับข้อความนั้น |
| 4 | หมายถึง คุณ | “เห็นด้วยมาก” | กับข้อความนั้น |
| 5 | หมายถึง คุณ | “เห็นด้วยมากที่สุด” | กับข้อความนั้น |

ตอนที่ 1 คุณเห็นด้วยกับข้อความต่อไปนี้มากน้อยเพียงใด

	เห็นด้วยมากที่สุด		ไม่เห็นด้วยเลย		
1. เมื่อจะซื้อหน้าเต้าหู้บรรจุขวด คุณจะพิจารณาสินค้าแบรนด์ต่าง ๆ อย่างใส่ใจ	5	4	3	2	1
2. การเลือกหน้าเต้าหู้บรรจุขวดให้ได้สินค้าที่ดีเป็นเรื่องสำคัญ	5	4	3	2	1
3. คุณตระหนักถึงผลที่จะตามมาจากการซื้อหน้าเต้าหู้บรรจุขวด	5	4	3	2	1
4. คุณผูกพันกับโทฟูซังเป็นพิเศษ	5	4	3	2	1
5. โทฟูซังเป็นส่วนหนึ่งของความเป็นคุณ	5	4	3	2	1
6. คุณรู้สึกใกล้ชิดกับโทฟูซัง	5	4	3	2	1
7. โทฟูซังคือส่วนหนึ่งที่ช่วยนิยามความเป็นคุณ	5	4	3	2	1
8. คุณรู้สึกราวกับว่าโทฟูซังเป็นคนสนิทส่วนตัว	5	4	3	2	1

	เห็นด้วยมากที่สุด		ไม่เห็นด้วยเลย			
9. โทฟูซังมีสิ่งที่ดีตรงกับความเป็นคุณ	5	4	3	2	1	
10. โทฟูซังเกี่ยวข้องกับอาการบอกว่า คุณเป็นคนแบบไหน	5	4	3	2	1	
11. โทฟูซังเป็นสิ่งสำคัญที่กำหนดตัวตนของคุณ	5	4	3	2	1	
12. โทฟูซังเป็นแบรนด์ที่ใคร ๆ คุณเคย	5	4	3	2	1	
13. โทฟูซังเป็นแบรนด์ที่เป็นที่รู้จัก	5	4	3	2	1	
14. โทฟูซังเป็นแบรนด์ที่พบเห็นได้ทั่วไป	5	4	3	2	1	
15. โทฟูซังเป็นแบรนด์ที่ได้ยินชื่อบ่อย ๆ	5	4	3	2	1	
16. โทฟูซังเป็นแบรนด์ที่มีชื่อเสียง	5	4	3	2	1	

ตอนที่ 2 คุณเห็นด้วยกับข้อความต่อไปนี้มากน้อยเพียงใด

	เห็นด้วยมากที่สุด		ไม่เห็นด้วยเลย			
1. คุณอยากซื้อสินค้าจากโทฟูซัง	5	4	3	2	1	
2. คุณเป็นลูกค้าประจำของโทฟูซัง	5	4	3	2	1	
3. คุณยินดีจะแนะนำโทฟูซังให้เพื่อนรู้จัก	5	4	3	2	1	
4. คุณคุ้นเคยกับโทฟูซัง	5	4	3	2	1	
5. คุณจะเลือกโทฟูซังเป็นอันดับแรก ถ้าจะซื้อน้ำเต้าหู้บรรจุขวด	5	4	3	2	1	
6. คุณจะไม่ซื้อแบรนด์อื่นถ้ามีโทฟูซังอยู่ในร้าน	5	4	3	2	1	
7. คุณคิดว่า โทฟูซังเหนือกว่าแบรนด์คู่แข่ง	5	4	3	2	1	
8. คุณชอบโทฟูซังมากกว่าแบรนด์อื่น ๆ	5	4	3	2	1	
9. โทฟูซังเป็นอันดับหนึ่งในใจคุณสำหรับสินค้าประเภทน้ำเต้าหู้บรรจุขวด	5	4	3	2	1	
10. คุณไม่สนใจจะลองแบรนด์อื่น ๆ นอกจากโทฟูซัง	5	4	3	2	1	
11. แบรนด์ไหน ๆ ก็ใช้แทนโทฟูซังไม่ได้	5	4	3	2	1	
12. คุณเป็นลูกค้าที่ไม่เปลี่ยนใจไปจากโทฟูซัง	5	4	3	2	1	
13. หากจะซื้อน้ำเต้าหู้บรรจุขวด คุณจะมองหาโทฟูซังก่อน	5	4	3	2	1	
14. ถ้ามีโทฟูซังวางขาย คุณจะซื้อแบรนด์อื่น ๆ เลย	5	4	3	2	1	
15. คุณสนับสนุนให้เพื่อนและครอบครัวของคุณซื้อโทฟูซัง	5	4	3	2	1	

	เห็นด้วยมากที่สุด		ไม่เห็นด้วยเลย		
16. คุณแนะนำโทฟุซังทุกครั้งถ้ามีคนมาขอคำแนะนำ	5	4	3	2	1
17. คุณจะแนะนำโทฟุซัง ถ้ามีคนพูดถึงแบรนด์อื่น ๆ	5	4	3	2	1
18. คุณเคยแนะนำโทฟุซังให้เพื่อนหรือ/ และครอบครัวแล้ว	5	4	3	2	1

ตอนที่ 3 คุณเห็นด้วยกับข้อความต่อไปนี้มากน้อยเพียงใด

	เห็นด้วยมากที่สุด		ไม่เห็นด้วยเลย		
1. โทฟุซังมีเอกลักษณ์ที่แตกต่างจากแบรนด์อื่น ๆ	5	4	3	2	1
2. โทฟุซังมีความทันสมัย	5	4	3	2	1
3. โทฟุซังสอดคล้องกับลักษณะการใช้ชีวิต (ไลฟ์สไตล์) ของคุณ	5	4	3	2	1
4. โทฟุซังตรงกับรสนิยมของคุณ	5	4	3	2	1
5. โทฟุซังให้ความรู้สึกเป็นกันเอง	5	4	3	2	1
6. โทฟุซังหาซื้อได้ง่าย	5	4	3	2	1
7. โทฟุซังผ่านการรับรองคุณภาพจากหน่วยงานที่น่าเชื่อถือ	5	4	3	2	1
8. โทฟุซังโด่งดังในสินค้าประเภทน้ำเต้าหู้บรรจุขวด	5	4	3	2	1
9. โทฟุซังเป็นต้นตำรับของน้ำเต้าหู้บรรจุขวด	5	4	3	2	1
10. โทฟุซังคงจุดเด่นของแบรนด์ไว้ได้อย่างสม่ำเสมอ	5	4	3	2	1
11. โทฟุซังมีประวัติความเป็นมาที่น่าสนใจ	5	4	3	2	1
12. โทฟุซังสร้างสรรค์น้ำเต้าหู้บรรจุขวดอย่างดี เข้าถึงรายละเอียดของลูกค้า	5	4	3	2	1
13. โทฟุซังมีความเชี่ยวชาญในการผลิตน้ำเต้าหู้บรรจุขวด	5	4	3	2	1
14. โทฟุซังมีน้ำเต้าหู้บรรจุขวดที่แปลกใหม่	5	4	3	2	1
15. โทฟุซังมีน้ำเต้าหู้บรรจุขวดให้เลือกหลากหลาย	5	4	3	2	1

	เห็นด้วยมากที่สุด		ไม่เห็นด้วยเลย			
16. โทฟุซังมีน้ำเต้าหู้บรรจุขวดที่ปลอดภัย	5	4	3	2	1	
17. โทฟุซังมีน้ำเต้าหู้บรรจุขวดที่คุณภาพดี	5	4	3	2	1	
18. โทฟุซังมีน้ำเต้าหู้บรรจุขวดที่คุณภาพเหมาะสมกับราคา	5	4	3	2	1	
19. โทฟุซังมีน้ำเต้าหู้บรรจุขวดที่คุณถูกใจ	5	4	3	2	1	
20. โทฟุซังมีน้ำเต้าหู้บรรจุขวดที่มีประโยชน์อย่างแท้จริง	5	4	3	2	1	
21. โทฟุซังมีน้ำเต้าหู้บรรจุขวดที่ตรงตามคำโฆษณา	5	4	3	2	1	
22. โทฟุซังรักษามาตรฐานของน้ำเต้าหู้บรรจุขวด	5	4	3	2	1	
23. โทฟุซังแนะนำข้อมูลที่เป็นประโยชน์ในการเลือกซื้อน้ำเต้าหู้บรรจุขวด	5	4	3	2	1	
24. โทฟุซังทำให้คุณรู้สึกมีความสุขเมื่อดื่มน้ำเต้าหู้บรรจุขวด	5	4	3	2	1	
25. โทฟุซังมีการพัฒนาอย่างต่อเนื่อง	5	4	3	2	1	
26. โทฟุซังมีสิ่งที่เป็นแบรนด์อื่น ๆ ยังไม่มี	5	4	3	2	1	
27. โทฟุซังทำให้คุณได้ประสบการณ์แปลกใหม่อย่างที่ไม่เคยได้รับมาก่อน	5	4	3	2	1	
28. โทฟุซังทำให้คุณพอใจเกินความคาดหมาย	5	4	3	2	1	
29. โทฟุซังให้ความช่วยเหลือคุณอย่างเต็มที่	5	4	3	2	1	
30. โทฟุซังให้ข้อมูลเกี่ยวกับน้ำเต้าหู้บรรจุขวดตามความเป็นจริง	5	4	3	2	1	
31. โทฟุซังสามารถปรับเปลี่ยนรูปแบบของน้ำเต้าหู้บรรจุขวดได้ตามคำสั่งซื้อ	5	4	3	2	1	
32. คุณรู้สึกว่าคุณรักษาความลับและไม่เผยแพร่ข้อมูลส่วนตัวของคุณ	5	4	3	2	1	
33. โทฟุซังมีบริการหลังการขาย เช่น ให้เปลี่ยนน้ำเต้าหู้บรรจุขวดหรือคืนเงิน	5	4	3	2	1	
34. โทฟุซังให้สิทธิพิเศษคุณได้มากกว่าแบรนด์อื่น ๆ	5	4	3	2	1	
35. โทฟุซังมีช่องทางให้คุณติดต่อสื่อสารได้อย่างสะดวก	5	4	3	2	1	
36. โทฟุซังนำความคิดเห็นของลูกค้ามาปรับปรุงพัฒนา	5	4	3	2	1	

	เห็นด้วยมากที่สุด		ไม่เห็นด้วยเลย		
37. โทฟุซังใส่ใจความต้องการของผู้บริโภค	5	4	3	2	1
38. โทฟุซังช่วยสนับสนุนคนในท้องถิ่น	5	4	3	2	1
39. โทฟุซังไม่ทำลายสิ่งแวดล้อม	5	4	3	2	1
40. โทฟุซังมีความรับผิดชอบต่อสังคม	5	4	3	2	1
41. โทฟุซังช่วยเหลือและทำประโยชน์ให้สังคม	5	4	3	2	1

ตอนที่ 4 คุณเห็นด้วยกับข้อความต่อไปนี้มากน้อยเพียงใด

	เห็นด้วยมากที่สุด		ไม่เห็นด้วยเลย		
1. การซื้อโทฟุซังแทนที่จะซื้อแบรนด์อื่น ๆ เป็นเรื่องที่เหมาะสม แม้ว่าสองแบรนด์นั้นจะเหมือนกันก็ตาม	5	4	3	2	1
2. คุณอยากซื้อโทฟุซัง แม้ว่าแบรนด์อื่นจะมีคุณสมบัติเช่นเดียวกัน	5	4	3	2	1
3. ถ้ามีแบรนด์อื่นที่ดีพอ ๆ กัน คุณยังยืนยันที่จะเลือกโทฟุซัง	5	4	3	2	1
4. คุณคิดว่า การซื้อโทฟุซังเป็นการตัดสินใจที่ชาญฉลาด ในกรณีที่แบรนด์อื่น ๆ ดูไม่แตกต่างกันเลย	5	4	3	2	1

ตอนที่ 5 กรุณาทำเครื่องหมาย (✓) หน้าข้อที่คุณต้องการเลือก

1. เพศ () 1. ชาย () 2. หญิง
2. อายุ () 1. 18 – 22 ปี () 2. 23 – 27 ปี
 () 3. 28 – 32 ปี () 4. 33 – 37 ปี
 () 5. 38 – 42 ปี () 6. 43 – 47 ปี
 () 7. 48 – 52 ปี () 8. 53 – 55 ปี
3. การศึกษาสูงสุด () 1. ต่ำกว่าปริญญาตรี () 2. ปริญญาตรี
 () 3. สูงกว่าปริญญาตรี

4. รายได้
- | | |
|----------------------------|----------------------------|
| () 1. ต่ำกว่า 10,000 บาท | () 2. 10,000 – 20,000 บาท |
| () 3. 20,001 – 30,000 บาท | () 4. 30,001 – 40,000 บาท |
| () 5. 40,001 – 50,000 บาท | () 6. 50,001 บาท ขึ้นไป |
5. อาชีพ
- | | |
|----------------------|--------------------------------|
| () 1. นิสิตนักศึกษา | () 2. รับราชการ / รัฐวิสาหกิจ |
| () 3. บริษัทเอกชน | () 4. ธุรกิจส่วนตัว |
| () 5. รับจ้าง | () 6. อื่นๆ (โปรดระบุ) |

ขอขอบคุณอย่างยิ่งสำหรับความร่วมมือในการตอบแบบสอบถาม



Appendix E

Questionnaire for measuring brand equity of the selected service SME brands (Santa fe´)

แบบสอบถามเพื่อคัดเลือกกลุ่มตัวอย่าง

แบบสอบถามนี้เป็นส่วนหนึ่งของวิทยานิพนธ์เรื่องการวัดคุณค่าตราสินค้าวิสาหกิจขนาดกลางและขนาดย่อม คณะนิเทศศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย เพื่อศึกษาความคิดเห็นของผู้บริโภคที่มีต่อตราสินค้า จึงขอความกรุณาทุกท่านให้ความร่วมมือตอบแบบสอบถามให้ครบทุกข้อตามความเป็นจริง ผู้วิจัยขอรับรองว่า จะนำข้อมูลไปใช้ประโยชน์สำหรับการศึกษาวิจัยครั้งนี้เท่านั้น โดยจะเก็บข้อมูลทั้งหมดเป็นความลับและนำเสนอผลสรุปในภาพรวม ไม่มีการอ้างถึงคำตอบรายบุคคลแต่อย่างใด หากท่านมีข้อเสนอแนะ กรุณาติดต่อผู้วิจัยได้ที่ หมายเลขโทรศัพท์ 08-6500-8559 หรืออีเมลล์ Nitcha.C@student.chula.ac.th



1. ภายในระยะเวลา 2 เดือนนี้ คุณได้ใช้บริการร้านซานตาเฟ (Santa fe´) หรือไม่

() 1. ใช่บริการ

() 2. ไม่ได้ใช้บริการ (ปิดการสัมภาษณ์)

แบบสอบถามเพื่อศึกษาความคิดเห็นของผู้บริโภคที่มีต่อร้าน “ซานตา เฟ”

แบบสอบถามนี้เป็นส่วนหนึ่งของวิทยานิพนธ์เรื่องการวัดคุณค่าตราสินค้าวิสาหกิจขนาดกลาง และขนาดย่อม คณะนิเทศศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย เพื่อศึกษาความคิดเห็นของผู้บริโภคที่มีต่อตราสินค้า จึงขอความกรุณาทุกท่านให้ความร่วมมือตอบแบบสอบถามให้ครบทุกข้อตามความเป็นจริง ผู้วิจัยขอรับรองว่า จะนำข้อมูลไปใช้ประโยชน์สำหรับการศึกษาวิจัยครั้งนี้เท่านั้น โดยจะเก็บข้อมูลทั้งหมดเป็นความลับและนำเสนอผลสรุปในภาพรวม ไม่มีการอ้างถึงคำตอบรายบุคคลแต่อย่างใด หากท่านมีข้อเสนอแนะ กรุณาติดต่อผู้วิจัยได้ที่ หมายเลขโทรศัพท์ 08-6500-8559 หรืออีเมล Nitcha.C@student.chula.ac.th

คำชี้แจง คุณเห็นด้วยกับข้อความต่อไปนี้มากน้อยเพียงใด กรุณาเลือกโดยวงกลม ล้อมตัวเลขที่ตรงกับระดับความคิดเห็นของคุณมากที่สุด โดยที่

- | | | | |
|---|-------------|---------------------|----------------|
| 1 | หมายถึง คุณ | “ไม่เห็นด้วยเลย” | กับข้อความนั้น |
| 2 | หมายถึง คุณ | “ไม่ค่อยเห็นด้วย” | กับข้อความนั้น |
| 3 | หมายถึง คุณ | “เห็นด้วยปานกลาง” | กับข้อความนั้น |
| 4 | หมายถึง คุณ | “เห็นด้วยมาก” | กับข้อความนั้น |
| 5 | หมายถึง คุณ | “เห็นด้วยมากที่สุด” | กับข้อความนั้น |

ตอนที่ 1 คุณเห็นด้วยกับข้อความต่อไปนี้มากน้อยเพียงใด

	เห็นด้วยมากที่สุด		ไม่เห็นด้วยเลย		
1. เมื่อจะไปใช้บริการร้านสเต็ก (Steak) คุณจะพิจารณาแบรนด์ต่าง ๆ อย่างใส่ใจ	5	4	3	2	1
2. การเลือกร้านสเต็กให้ได้ร้านที่ดีเป็นเรื่องสำคัญ	5	4	3	2	1
3. คุณตระหนักถึงผลที่จะตามมาจากการใช้บริการร้านสเต็ก	5	4	3	2	1
4. คุณผูกพันกับซานตา เฟเป็นพิเศษ	5	4	3	2	1
5. ซานตา เฟเป็นส่วนหนึ่งของความเป็นคุณ	5	4	3	2	1
6. คุณรู้สึกใกล้ชิดกับซานตา เฟ	5	4	3	2	1
7. ซานตา เฟคือส่วนหนึ่งที่ช่วยนิยามความเป็นคุณ	5	4	3	2	1
8. คุณรู้สึกราวกับว่า ซานตา เฟเป็นคนสนิทส่วนตัว	5	4	3	2	1

	เห็นด้วยมากที่สุด			ไม่เห็นด้วยเลย		
9. ซานตา เฟมีสิ่งیที่ตรงกันกับความเป็นคุณ	5	4	3	2	1	
10. ซานตา เฟเกี่ยวข้องกับการบอกว่า คุณเป็นคนแบบไหน	5	4	3	2	1	
11. ซานตา เฟเป็นสิ่งสำคัญที่กำหนดตัวตนของคุณ	5	4	3	2	1	
12. ซานตา เฟเป็นแบรนด์ที่ใคร ๆ ค้นเคย	5	4	3	2	1	
13. ซานตา เฟเป็นแบรนด์ที่เป็นที่รู้จัก	5	4	3	2	1	
14. ซานตา เฟเป็นแบรนด์ที่พบเห็นได้ทั่วไป	5	4	3	2	1	
15. ซานตา เฟเป็นแบรนด์ที่ได้ยินชื่อบ่อย ๆ	5	4	3	2	1	
16. ซานตา เฟเป็นแบรนด์ที่มีชื่อเสียง	5	4	3	2	1	

ตอนที่ 2 คุณเห็นด้วยกับข้อความต่อไปนี้มากน้อยเพียงใด

	เห็นด้วยมากที่สุด			ไม่เห็นด้วยเลย		
1. คุณอยากไปใช้บริการร้านเส็กซานตา เฟ	5	4	3	2	1	
2. คุณเป็นลูกค้าประจำของซานตา เฟ	5	4	3	2	1	
3. คุณยินดีจะแนะนำซานตา เฟให้เพื่อนรู้จัก	5	4	3	2	1	
4. คุณคุ้นเคยกับซานตา เฟ	5	4	3	2	1	
5. คุณจะเลือกซานตา เฟเป็นอันดับแรก ถ้าจะไปใช้บริการร้านเส็ก	5	4	3	2	1	
6. คุณจะไม่ว่านร้านเส็กอื่นถ้ามีร้านซานตา เฟตั้งอยู่ใกล้ ๆ	5	4	3	2	1	
7. คุณคิดว่า ซานตา เฟเหนือกว่าแบรนด์คู่แข่ง	5	4	3	2	1	
8. คุณชอบซานตา เฟมากกว่าแบรนด์อื่น ๆ	5	4	3	2	1	
9. ซานตา เฟเป็นอันดับหนึ่งในใจคุณสำหรับร้านเส็ก	5	4	3	2	1	
10. คุณไม่สนใจจะลองแบรนด์อื่น ๆ นอกจากซานตา เฟ	5	4	3	2	1	
11. แบรนด์ไหน ๆ ก็แทนซานตา เฟไม่ได้	5	4	3	2	1	
12. คุณเป็นลูกค้าที่ไม่เปลี่ยนใจไปจากซานตา เฟ	5	4	3	2	1	
13. หากจะใช้บริการร้านเส็ก คุณจะมองหาซานตา เฟก่อน	5	4	3	2	1	
14. ถ้ามีซานตา เฟ คุณจะไม่ว่านร้านเส็กอื่น ๆ เลย	5	4	3	2	1	
15. คุณสนับสนุนให้เพื่อนและครอบครัวคุณไปใช้บริการร้านซานตา เฟ	5	4	3	2	1	

	เห็นด้วยมากที่สุด		ไม่เห็นด้วยเลย		
16. คุณแนะนำซานตา เฟ่ทุกครั้งถ้ามีคนมาขอคำแนะนำ	5	4	3	2	1
17. คุณจะแนะนำซานตา เฟ่ ถ้ามีคนพูดถึงแบรนด์อื่น ๆ	5	4	3	2	1
18. คุณเคยแนะนำซานตา เฟ่ให้เพื่อนหรือ/ และครอบครัวแล้ว	5	4	3	2	1

ตอนที่ 3 คุณเห็นด้วยกับข้อความต่อไปนี้มากน้อยเพียงใด

	เห็นด้วยมากที่สุด		ไม่เห็นด้วยเลย		
1. ซานตา เฟ่มีเอกลักษณ์ที่แตกต่างจากแบรนด์อื่น ๆ	5	4	3	2	1
2. ซานตา เฟ่มีความทันสมัย	5	4	3	2	1
3. ซานตา เฟ่สอดคล้องกับลักษณะการใช้ชีวิต (ไลฟ์สไตล์) ของคุณ	5	4	3	2	1
4. ซานตา เฟ่ตรงกับรสนิยมของคุณ	5	4	3	2	1
5. ซานตา เฟ่ให้ความรู้สึกเป็นกันเอง	5	4	3	2	1
6. ซานตา เฟ่เป็นร้านที่หาได้ง่าย	5	4	3	2	1
7. ซานตา เฟ่ผ่านการรับรองคุณภาพจากหน่วยงานที่น่าเชื่อถือ	5	4	3	2	1
8. ซานตา เฟ่โด่งดังในร้านอาหารประเภทเด็ก	5	4	3	2	1
9. ซานตา เฟ่เป็นต้นตำรับของร้านเด็ก	5	4	3	2	1
10. ซานตา เฟ่คงจุดเด่นของแบรนด์ไว้ได้อย่างสม่ำเสมอ	5	4	3	2	1
11. ซานตา เฟ่มีประวัติความเป็นมาที่น่าสนใจ	5	4	3	2	1
12. ซานตา เฟ่เป็นร้านเด็กที่ให้บริการอย่างดี เข้าถึงรายละเอียดของลูกค้า	5	4	3	2	1
13. ซานตา เฟ่มีความเชี่ยวชาญในการให้บริการอาหารประเภทเด็ก	5	4	3	2	1
14. ซานตา เฟ่มีสติกที่แปลกใหม่	5	4	3	2	1
15. ซานตา เฟ่มีสติกให้เลือกหลากหลาย	5	4	3	2	1

	เห็นด้วยมากที่สุด		ไม่เห็นด้วยเลย			
16. ชานตา เฟมีสเด็กที่ปลอดภัย	5	4	3	2	1	
17. ชานตา เฟมีสเด็กที่คุณภาพดี	5	4	3	2	1	
18. ชานตา เฟมีสเด็กที่คุณภาพเหมาะสมกับราคา	5	4	3	2	1	
19. ชานตา เฟมีสเด็กที่คุณถูกใจ	5	4	3	2	1	
20. ชานตา เฟมีสเด็กที่มีประโยชน์อย่างแท้จริง	5	4	3	2	1	
21. ชานตา เฟมีสเด็กที่ตรงตามคำโฆษณา	5	4	3	2	1	
22. ชานตา เฟรักษามาตรฐานของการให้บริการอาหารประเภทเด็ก	5	4	3	2	1	
23. ชานตา เฟแนะนำข้อมูลที่เป็นประโยชน์ในการเลือกใช้บริการ	5	4	3	2	1	
24. ชานตา เฟทำให้คุณรู้สึกมีความสุขเมื่อไปใช้บริการ	5	4	3	2	1	
25. ชานตา เฟมีการพัฒนาอย่างต่อเนื่อง	5	4	3	2	1	
26. ชานตา เฟมีสิ่งที่น่าสนใจอื่น ๆ ยังไม่มี	5	4	3	2	1	
27. ชานตา เฟทำให้คุณได้ประสบการณ์แปลกใหม่อย่างที่ไม่เคยได้รับมาก่อน	5	4	3	2	1	
28. ชานตา เฟทำให้คุณพอใจเกินความคาดหมาย	5	4	3	2	1	
29. ชานตา เฟให้ความช่วยเหลือคุณอย่างเต็มที่	5	4	3	2	1	
30. ชานตา เฟให้ข้อมูลเกี่ยวกับอาหารตามความเป็นจริง	5	4	3	2	1	
31. ชานตา เฟสามารถปรับเปลี่ยนรูปแบบของอาหารได้ตามคำสั่งซื้อ	5	4	3	2	1	
32. คุณรู้สึกว่า ชานตา เฟรักษาความลับและไม่เผยแพร่ข้อมูลส่วนตัวของลูกค้า	5	4	3	2	1	
33. ชานตา เฟมีบริการหลังการขาย เช่น ให้เปลี่ยนอาหารหรือคืนเงิน	5	4	3	2	1	
34. ชานตา เฟให้สิทธิพิเศษคุณได้มากกว่าแบรนด์อื่น ๆ	5	4	3	2	1	
35. ชานตา เฟมีช่องทางให้คุณติดต่อสื่อสารได้อย่างสะดวก	5	4	3	2	1	
36. ชานตา เฟนำความคิดเห็นของลูกค้ามาปรับปรุงพัฒนา	5	4	3	2	1	

	เห็นด้วยมากที่สุด		ไม่เห็นด้วยเลย		
37. ชานตา เฟใส่ใจความต้องการของผู้บริโภค	5	4	3	2	1
38. ชานตา เฟช่วยสนับสนุนคนในท้องถิ่น	5	4	3	2	1
39. ชานตา เฟไม่ทำลายสิ่งแวดล้อม	5	4	3	2	1
40. ชานตา เฟมีความรับผิดชอบต่อสังคม	5	4	3	2	1
41. ชานตา เฟช่วยเหลือและทำประโยชน์ให้สังคม	5	4	3	2	1

ตอนที่ 4 คุณเห็นด้วยกับข้อความต่อไปนี้มากน้อยเพียงใด

	เห็นด้วยมากที่สุด		ไม่เห็นด้วยเลย		
1. การไปใช้บริการชานตา เฟแทนที่จะไปร้านอื่น ๆ เป็นเรื่องที่เหมาะสม แม้ว่าสองร้านนั้นจะมีอาหารเหมือนกันก็ตาม	5	4	3	2	1
2. คุณอยากไปใช้บริการชานตา เฟ แม้ว่าร้านอื่นจะมีคุณสมบัติเช่นเดียวกัน	5	4	3	2	1
3. ถ้ามีร้านอื่นที่ตีพอ ๆ กัน คุณยังยืนยันที่จะเลือกชานตา เฟ	5	4	3	2	1
4. คุณคิดว่า การเลือกใช้บริการชานตา เฟเป็นการตัดสินใจที่ชาญฉลาด ในกรณีที่ร้านอื่น ๆ ดูไม่แตกต่างกันเลย	5	4	3	2	1

ตอนที่ 5 กรุณาทำเครื่องหมาย (✓) หน้าข้อที่คุณต้องการเลือก

1. เพศ () 1. ชาย () 2. หญิง
2. อายุ () 1. 18 – 22 ปี () 2. 23 – 27 ปี
 () 3. 28 – 32 ปี () 4. 33 – 37 ปี
 () 5. 38 – 42 ปี () 6. 43 – 47 ปี
 () 7. 48 – 52 ปี () 8. 53 – 55 ปี
3. การศึกษาสูงสุด () 1. ต่ำกว่าปริญญาตรี () 2. ปริญญาตรี
 () 3. สูงกว่าปริญญาตรี

4. รายได้
- | | |
|----------------------------|----------------------------|
| () 1. ต่ำกว่า 10,000 บาท | () 2. 10,000 – 20,000 บาท |
| () 3. 20,001 – 30,000 บาท | () 4. 30,001 – 40,000 บาท |
| () 5. 40,001 – 50,000 บาท | () 6. 50,001 บาท ขึ้นไป |
5. อาชีพ
- | | |
|----------------------|---------------------------------|
| () 1. นิสิตนักศึกษา | () 2. รับราชการ / รัฐวิสาหกิจ |
| () 3. บริษัทเอกชน | () 4. ธุรกิจส่วนตัว |
| () 5. รับจ้าง | () 6. อื่นๆ (โปรดระบุ)) |

ขอขอบคุณอย่างยิ่งสำหรับความร่วมมือในการตอบแบบสอบถาม



Appendix F

Questionnaire for measuring brand equity of the selected trade SME brands (Eveandboy)

แบบสอบถามเพื่อคัดเลือกกลุ่มตัวอย่าง

แบบสอบถามนี้เป็นส่วนหนึ่งของวิทยานิพนธ์เรื่องการวัดคุณค่าตราสินค้าวิสาหกิจขนาดกลางและขนาดย่อม คณะนิเทศศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย เพื่อศึกษาความคิดเห็นของผู้บริโภคที่มีต่อตราสินค้า จึงขอความกรุณาทุกท่านให้ความร่วมมือตอบแบบสอบถามให้ครบทุกข้อตามความเป็นจริง ผู้วิจัยขอรับรองว่า จะนำข้อมูลไปใช้ประโยชน์สำหรับการศึกษาวิจัยครั้งนี้เท่านั้น โดยจะเก็บข้อมูลทั้งหมดเป็นความลับและนำเสนอผลสรุปในภาพรวม ไม่มีการอ้างถึงคำตอบรายบุคคลแต่อย่างใด หากท่านมีข้อเสนอแนะ กรุณาติดต่อผู้วิจัยได้ที่ หมายเลขโทรศัพท์ 08-6500-8559 หรืออีเมล Nitcha.C@student.chula.ac.th



จุฬาลงกรณ์มหาวิทยาลัย

Chulalongkorn University

1. ภายในระยะเวลา 3 เดือนนี้ คุณได้ซื้อสินค้าจากร้านอีฟแอนด์บอย (Eveandboy) หรือไม่

() 1. ซื้

() 2. ไม่ได้ซื้อ (ปิดการสัมภาษณ์)

แบบสอบถามเพื่อศึกษาความคิดเห็นของผู้บริโภคที่มีต่อร้าน “อีฟแอนด์บอย”

แบบสอบถามนี้เป็นส่วนหนึ่งของวิทยานิพนธ์เรื่องการวัดคุณค่าตราสินค้าวิสาหกิจขนาดกลางและขนาดย่อม คณะนิเทศศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย เพื่อศึกษาความคิดเห็นของผู้บริโภคที่มีต่อตราสินค้า จึงขอความกรุณาทุกท่านให้ความร่วมมือตอบแบบสอบถามให้ครบทุกข้อตามความเป็นจริง ผู้วิจัยขอรับรองว่า จะนำข้อมูลไปใช้ประโยชน์สำหรับการศึกษาวิจัยครั้งนี้เท่านั้น โดยจะเก็บข้อมูลทั้งหมดเป็นความลับและนำเสนอผลสรุปในภาพรวม ไม่มีการอ้างถึงคำตอบรายบุคคลแต่อย่างใด หากท่านมีข้อเสนอแนะ กรุณาติดต่อผู้วิจัยได้ที่ หมายเลขโทรศัพท์ 08-6500-8559 หรืออีเมล Nitcha.C@student.chula.ac.th

คำชี้แจง คุณเห็นด้วยกับข้อความต่อไปนี้มากน้อยเพียงใด กรุณาเลือกโดยวงกลม ล้อมตัวเลขที่ตรงกับระดับความคิดเห็นของคุณมากที่สุด โดยที่

1	หมายถึง คุณ	“ไม่เห็นด้วยเลย”	กับข้อความนั้น
2	หมายถึง คุณ	“ไม่ค่อยเห็นด้วย”	กับข้อความนั้น
3	หมายถึง คุณ	“เห็นด้วยปานกลาง”	กับข้อความนั้น
4	หมายถึง คุณ	“เห็นด้วยมาก”	กับข้อความนั้น
5	หมายถึง คุณ	“เห็นด้วยมากที่สุด”	กับข้อความนั้น

ตอนที่ 1 คุณเห็นด้วยกับข้อความต่อไปนี้มากน้อยเพียงใด

	เห็นด้วยมากที่สุด		ไม่เห็นด้วยเลย		
1. เมื่อจะเข้าร้านจำหน่ายผลิตภัณฑ์เกี่ยวกับความงามคุณจะพิจารณาร้านต่าง ๆ อย่างไร	5	4	3	2	1
2. การเลือกร้านจำหน่ายผลิตภัณฑ์เกี่ยวกับความงามให้ได้ร้านที่ดีเป็นเรื่องสำคัญ	5	4	3	2	1
3. คุณตระหนักถึงผลที่จะตามมาจากการไปซื้อสินค้าที่ร้านจำหน่ายผลิตภัณฑ์เกี่ยวกับความงาม	5	4	3	2	1
4. คุณผูกพันกับอีฟแอนด์บอยเป็นพิเศษ	5	4	3	2	1
5. อีฟแอนด์บอยเป็นส่วนหนึ่งของความเป็นคุณ	5	4	3	2	1
6. คุณรู้สึกใกล้ชิดกับอีฟแอนด์บอย	5	4	3	2	1
7. อีฟแอนด์บอยคือส่วนหนึ่งที่ช่วยนิยามความเป็นคุณ	5	4	3	2	1
8. คุณรู้สึกราวกับว่า อีฟแอนด์บอยเป็นคนสนิทส่วนตัว	5	4	3	2	1

	เห็นด้วยมากที่สุด			ไม่เห็นด้วยเลย		
9. อีฟแอนด์บอยมีสิ่งที่ตรงกันกับความเป็นคุณ	5	4	3	2	1	
10. อีฟแอนด์บอยเกี่ยวข้องกับบอกว่า คุณเป็นคนแบบไหน	5	4	3	2	1	
11. อีฟแอนด์บอยเป็นสิ่งสำคัญที่กำหนดตัวตนของคุณ	5	4	3	2	1	
12. อีฟแอนด์บอยเป็นแบรนด์ที่ใคร ๆ ค้นเคย	5	4	3	2	1	
13. อีฟแอนด์บอยเป็นแบรนด์ที่เป็นที่รู้จัก	5	4	3	2	1	
14. อีฟแอนด์บอยเป็นแบรนด์ที่พบเห็นได้ทั่วไป	5	4	3	2	1	
15. อีฟแอนด์บอยเป็นแบรนด์ที่ได้ยินชื่อบ่อย ๆ	5	4	3	2	1	
16. อีฟแอนด์บอยเป็นแบรนด์ที่มีชื่อเสียง	5	4	3	2	1	

ตอนที่ 2 คุณเห็นด้วยกับข้อความต่อไปนี้มากน้อยเพียงใด

	เห็นด้วยมากที่สุด			ไม่เห็นด้วยเลย		
1. คุณอยากซื้อสินค้าจากอีฟแอนด์บอย	5	4	3	2	1	
2. คุณเป็นลูกค้าประจำของอีฟแอนด์บอย	5	4	3	2	1	
3. คุณยินดีจะแนะนำอีฟแอนด์บอยให้เพื่อนรู้จัก	5	4	3	2	1	
4. คุณคุ้นเคยกับอีฟแอนด์บอย	5	4	3	2	1	
5. คุณจะเลือกอีฟแอนด์บอยเป็นอันดับแรก ถ้าจะเข้าร้านจำหน่ายผลิตภัณฑ์เกี่ยวกับความงาม	5	4	3	2	1	
6. คุณจะไม่ซื้อแบรนด์อื่นถ้ามีร้านอีฟแอนด์บอยตั้งอยู่ใกล้ ๆ	5	4	3	2	1	
7. คุณคิดว่า อีฟแอนด์บอยเหนือกว่าแบรนด์คู่แข่ง	5	4	3	2	1	
8. คุณชอบอีฟแอนด์บอยมากกว่าแบรนด์อื่น ๆ	5	4	3	2	1	
9. อีฟแอนด์บอยเป็นอันดับหนึ่งในใจคุณสำหรับร้านจำหน่ายสินค้าประเภทผลิตภัณฑ์เกี่ยวกับความงาม	5	4	3	2	1	
10. คุณไม่สนใจจะลองแบรนด์อื่น ๆ นอกจากอีฟแอนด์บอย	5	4	3	2	1	
11. แบรนด์ไหน ๆ ก็แทนอีฟแอนด์บอยไม่ได้	5	4	3	2	1	
12. คุณเป็นลูกค้าที่ไม่เปลี่ยนใจไปจากอีฟแอนด์บอย	5	4	3	2	1	
13. หากจะเข้าร้านจำหน่ายผลิตภัณฑ์เกี่ยวกับความงาม คุณจะมองหาอีฟแอนด์บอยก่อน	5	4	3	2	1	
14. ถ้ามีอีฟแอนด์บอย คุณจะไม่ซื้อจากร้านอื่น ๆ เลย	5	4	3	2	1	

	เห็นด้วยมากที่สุด		ไม่เห็นด้วยเลย		
15. คุณสนับสนุนให้เพื่อนและครอบครัวของคุณซื้อสินค้าจากร้าน อีฟแอนด์บอย	5	4	3	2	1
16. คุณแนะนำอีฟแอนด์บอยทุกครั้งถ้ามีคนมาขอคำแนะนำ	5	4	3	2	1
17. คุณจะแนะนำอีฟแอนด์บอย ถ้ามีคนพูดถึงแบรนด์อื่น ๆ	5	4	3	2	1
18. คุณเคยแนะนำอีฟแอนด์บอยให้เพื่อนหรือ/ และ ครอบครัวแล้ว	5	4	3	2	1

ตอนที่ 3 คุณเห็นด้วยกับข้อความต่อไปนี้มากน้อยเพียงใด

	เห็นด้วยมากที่สุด		ไม่เห็นด้วยเลย		
1. อีฟแอนด์บอยมีเอกลักษณ์ที่แตกต่างจากแบรนด์อื่น ๆ	5	4	3	2	1
2. อีฟแอนด์บอยมีความทันสมัย	5	4	3	2	1
3. อีฟแอนด์บอยสอดคล้องกับลักษณะการใช้ชีวิต (ไลฟ์สไตล์) ของคุณ	5	4	3	2	1
4. อีฟแอนด์บอยตรงกับรสนิยมของคุณ	5	4	3	2	1
5. อีฟแอนด์บอยให้ความรู้สึกเป็นกันเอง	5	4	3	2	1
6. อีฟแอนด์บอยเป็นร้านที่หาได้ง่าย	5	4	3	2	1
7. อีฟแอนด์บอยผ่านการรับรองคุณภาพจากหน่วยงานที่ น่าเชื่อถือ	5	4	3	2	1
8. อีฟแอนด์บอยโด่งดังในการจำหน่ายสินค้าประเภท ผลิตภัณฑ์เกี่ยวกับความงาม	5	4	3	2	1
9. อีฟแอนด์บอยเป็นต้นตำรับของการจำหน่ายผลิตภัณฑ์ เกี่ยวกับความงาม	5	4	3	2	1
10. อีฟแอนด์บอยคงจุดเด่นของแบรนด์ไว้ได้อย่าง สม่ำเสมอ	5	4	3	2	1
11. อีฟแอนด์บอยมีประวัติความเป็นมาที่น่าสนใจ	5	4	3	2	1
12. อีฟแอนด์บอยจัดจำหน่ายผลิตภัณฑ์เกี่ยวกับความงาม อย่างดี เข้าถึงรายละเอียดของลูกค้า	5	4	3	2	1
13. อีฟแอนด์บอยมีความเชี่ยวชาญในการจำหน่าย ผลิตภัณฑ์เกี่ยวกับความงาม	5	4	3	2	1

	เห็นด้วยมากที่สุด		ไม่เห็นด้วยเลย			
14. อีฟแอนด์บอยมีผลิตภัณฑ์เกี่ยวกับความงามที่แปลกใหม่	5	4	3	2	1	
15. อีฟแอนด์บอยมีผลิตภัณฑ์เกี่ยวกับความงามให้เลือกหลากหลาย	5	4	3	2	1	
16. อีฟแอนด์บอยมีผลิตภัณฑ์เกี่ยวกับความงามที่ปลอดภัย	5	4	3	2	1	
17. อีฟแอนด์บอยมีผลิตภัณฑ์เกี่ยวกับความงามที่คุณภาพดี	5	4	3	2	1	
18. อีฟแอนด์บอยมีผลิตภัณฑ์เกี่ยวกับความงามที่คุณภาพเหมาะสมกับราคา	5	4	3	2	1	
19. อีฟแอนด์บอยมีผลิตภัณฑ์เกี่ยวกับความงามที่คุณถูกใจ	5	4	3	2	1	
20. อีฟแอนด์บอยมีผลิตภัณฑ์เกี่ยวกับความงามที่มีประโยชน์อย่างแท้จริง	5	4	3	2	1	
21. อีฟแอนด์บอยมีผลิตภัณฑ์เกี่ยวกับความงามที่ตรงตามคำโฆษณา	5	4	3	2	1	
22. อีฟแอนด์บอยรักษามาตรฐานของการจำหน่ายผลิตภัณฑ์เกี่ยวกับความงาม	5	4	3	2	1	
23. อีฟแอนด์บอยแนะนำข้อมูลที่เป็นประโยชน์ในการเลือกซื้อผลิตภัณฑ์เกี่ยวกับความงาม	5	4	3	2	1	
24. อีฟแอนด์บอยทำให้คุณรู้สึกมีความสุขเมื่อไปซื้อสินค้า	5	4	3	2	1	
25. อีฟแอนด์บอยมีการพัฒนาอย่างต่อเนื่อง	5	4	3	2	1	
26. อีฟแอนด์บอยมีสิ่งที่ไม่เหมือนใคร ๆ ยังไม่มี	5	4	3	2	1	
27. อีฟแอนด์บอยทำให้คุณได้ประสบการณ์แปลกใหม่อย่างไม่เคยได้รับมาก่อน	5	4	3	2	1	
28. อีฟแอนด์บอยทำให้คุณพอใจเกินความคาดหมาย	5	4	3	2	1	
29. อีฟแอนด์บอยให้ความช่วยเหลือคุณอย่างเต็มใจ	5	4	3	2	1	
30. อีฟแอนด์บอยให้ข้อมูลเกี่ยวกับผลิตภัณฑ์เกี่ยวกับความงามตามความเป็นจริง	5	4	3	2	1	
31. อีฟแอนด์บอยสามารถปรับเปลี่ยนรูปแบบของผลิตภัณฑ์เกี่ยวกับความงามได้ตามคำสั่งซื้อ	5	4	3	2	1	
32. คุณรู้สึกว่า อีฟแอนด์บอยรักษาความลับและไม่เผยแพร่ข้อมูลส่วนตัวของคุณ	5	4	3	2	1	

	เห็นด้วยมากที่สุด		ไม่เห็นด้วยเลย			
33. อีฟแอนด์บอยมีบริการหลังการขาย เช่น ให้นำเปลี่ยนผลิตภัณฑ์เกี่ยวกับความงามหรือการเงิน	5	4	3	2	1	
34. อีฟแอนด์บอยให้สิทธิพิเศษคุณได้มากกว่าแบรนด์อื่น ๆ	5	4	3	2	1	
35. อีฟแอนด์บอยมีช่องทางให้คุณติดต่อสื่อสารได้อย่างสะดวก	5	4	3	2	1	
36. อีฟแอนด์บอยนำความคิดเห็นของลูกค้ามาปรับปรุงพัฒนา	5	4	3	2	1	
37. อีฟแอนด์บอยใส่ใจความต้องการของผู้บริโภค	5	4	3	2	1	
38. อีฟแอนด์บอยช่วยสนับสนุนคนในท้องถิ่น	5	4	3	2	1	
39. อีฟแอนด์บอยไม่ทำลายสิ่งแวดล้อม	5	4	3	2	1	
40. อีฟแอนด์บอยมีความรับผิดชอบต่อสังคม	5	4	3	2	1	
41. อีฟแอนด์บอยช่วยเหลือและทำประโยชน์ให้สังคม	5	4	3	2	1	

ตอนที่ 4 คุณเห็นด้วยกับข้อความต่อไปนี้มากน้อยเพียงใด

	เห็นด้วยมากที่สุด		ไม่เห็นด้วยเลย			
1. การไปซื้อสินค้าจากอีฟแอนด์บอยแทนที่จะซื้อจากร้านอื่น ๆ เป็นเรื่องที่เหมาะสม แม้ว่าสองร้านนั้นจะมีสินค้าเหมือนกันก็ตาม	5	4	3	2	1	
2. คุณอยากไปซื้อสินค้าจากอีฟแอนด์บอย แม้ว่าร้านอื่นจะมีคุณสมบัติเช่นเดียวกัน	5	4	3	2	1	
3. ถ้ามีร้านอื่นที่ดีพอ ๆ กัน คุณยังยืนยันที่จะเลือกอีฟแอนด์บอย	5	4	3	2	1	
4. คุณคิดว่า การเลือกซื้อสินค้าจากอีฟแอนด์บอยเป็นการตัดสินใจที่ชาญฉลาด ในกรณีที่ร้านอื่น ๆ ดูไม่แตกต่างกันเลย	5	4	3	2	1	

ตอนที่ 5 กรุณาทำเครื่องหมาย ✓ ใน () หน้าข้อที่คุณต้องการเลือก

1. เพศ () 1. ชาย () 2. หญิง
2. อายุ () 1. 18 – 22 ปี () 2. 23 – 27 ปี
 () 3. 28 – 32 ปี () 4. 33 – 37 ปี
 () 5. 38 – 42 ปี () 6. 43 – 47 ปี
 () 7. 48 – 52 ปี () 8. 53 – 55 ปี
3. การศึกษาสูงสุด () 1. ต่ำกว่าปริญญาตรี () 2. ปริญญาตรี
 () 3. สูงกว่าปริญญาตรี
4. รายได้ () 1. ต่ำกว่า 10,000 บาท () 2. 10,000 – 20,000 บาท
 () 3. 20,001 – 30,000 บาท () 4. 30,001 – 40,000 บาท
 () 5. 40,001 – 50,000 บาท () 6. 50,001 บาท ขึ้นไป
5. อาชีพ () 1. นิสิตนักศึกษา () 2. รับราชการ / รัฐวิสาหกิจ
 () 3. บริษัทเอกชน () 4. ธุรกิจส่วนตัว
 () 5. รับจ้าง () 6. อื่นๆ (โปรดระบุ))

ขอขอบคุณอย่างยิ่งสำหรับความร่วมมือในการตอบแบบสอบถาม

จุฬาลงกรณ์มหาวิทยาลัย
 CHULALONGKORN UNIVERSITY

Appendix G

Coding frame for the document analysis

Table 1A: Coding frame used for the document analysis of 40 awarded SMEs

Item	Definition
1. The brand is unique. มีเอกลักษณ์ที่แตกต่างจากแบรนด์อื่น ๆ	The brand possesses the quality that is different from other brands'. Example: We have a secret recipe for the flour used for making doughnuts.
2. The brand is the expert in its field. มีความเชี่ยวชาญในการผลิตสินค้า/บริการประเภทนั้น	The brand specializes in its product/ service owing to its skill, knowledge, and experience. Example: We have many years of experience in the furniture industry.
3. The brand met certain quality standards. ผ่านการรับรองคุณภาพจากหน่วยงานที่น่าเชื่อถือ	The brand received the certification from the national or international institutes as the written assurance that its product, service, or system meets the specific requirements. Example: Our factory received an ISO certification.
4. The brand is famous for its product/service. โด่งดังในการผลิตสินค้า/บริการประเภทนั้น	The brand establishes a good reputation for its product/ service and is recognized by customers or companies in the same industry or both. Example: We are recognized by other brands in the dairy industry.
5. The brand builds its product/service meticulously. สร้างสรรค์สินค้า/บริการอย่างดี เข้าถึงรายละเอียดของลูกค้า	The brand takes great care and attention during the design and manufacture of its product/ service. Example: Our products were designed elaborately.
6. The brand is involved in its local community. ช่วยสนับสนุนผู้คนในท้องถิ่น	The brand lets local people participate in its business activities. The brand maintains a good relationship with dwellers living near its location. Example: The community enterprise is the source of our raw material.
7. The brand has a fresh appearance. มีความทันสมัย	The brand successfully adapts its business approach to catch up with its industry's trend. Example: Our products are always developed to catch up the global trend.
8. The brand fits into your lifestyle. สอดคล้องกับการใช้ชีวิต (ไลฟ์สไตล์) ของคุณ	The brand designs its product/ service according to its target consumers' behaviors. Example: Our brand name "Pan Kam Hom" was originated from the behavior of the modern consumers who prefer having a bite-sized dessert.
9. The brand creatively produces new product/service. มีสินค้า/บริการ ที่แปลกใหม่	The brand has the skill and ability to create the products/ services that have not existed in the market before. Example: The pattern of the tiles is rare.
10. The brand offers a wide variety of the particular product/service. มีสินค้า/บริการ ให้เลือกหลากหลาย	Customers have plenty of choices when they decide to buy product/service from the brand. Example: We have many kinds of sunflower snacks that vary in taste and texture.
11. The brand's products/ services are safe. สินค้า/บริการ มีความปลอดภัย	The brand adheres to the principles of sanitation and personal hygiene. The brand's products and services have no danger to consumers. Example: Our products have no preservatives and additives.
12. The brand does not harm the environment. ไม่ทำลายสิ่งแวดล้อม	The brand does not cause much pollution during its manufacturing/service. Example: The brand is a business that is environmentally friendly.
13. The brand determines reasonable pricing. สินค้า/บริการ มีคุณภาพเหมาะสมกับราคา	The quality of products/services is appropriate for the price. Example: I think the product has the great value at the right price.
14. The brand provides helpful information on buying product/service. แนะนำข้อมูลที่เป็นประโยชน์ในการเลือกซื้อสินค้า/บริการ	Customers get useful advice on product usage or purchasing tips or both. Example: The staff gave me very detailed advice.
15. The brand makes you happy. ทำให้คุณรู้สึกมีความสุขเมื่อใช้แบรนด์นี้	The brand appeals to consumers' five senses. Example: It was my first time here, and I felt so good.

Table 1A: --continued

Item	Definition
16. The brand offers quality product/service. สินค้า/บริการมีคุณภาพดี	The brand's products/ services are good in the opinions of customers. Example: The effectiveness of our training program is measurable.
17. The brand's products/services are worth buying. สินค้า/บริการ ทำให้คุณรู้สึกคุ้มค่า	Customers say that they get more than what they pay for. Example: The taste of the desserts is beyond the price.
18. The brand continuously improves itself. มีการพัฒนาอย่างต่อเนื่อง	The brand unceasingly makes its everything better than before. Example: We continually develop the manufacturing process.
19. The brand has product/service that impresses you. มีสินค้า/บริการ ที่คุณถูกใจ	Customers admit that they like the brand's product/service so much. Example: The taste is great for everyone.
20. The brand's products and services are actually useful. สินค้า/บริการ มีประโยชน์ใช้งานได้จริง	Customers perceive functional benefits of the brand's products/ services. Example: We made wooden cabinets that are practical for every house.
21. The brand has something that cannot be found elsewhere. มีสิ่งที่เป็นเอกลักษณ์ ใด ๆ ซึ่งไม่มี	The brand has the innovation that still cannot be imitated by other brands. Example: The double-lock technique used in the process of jewelry assembling is our exclusive innovation that acquired a technology patent.
22. The brand gives you an experience you never had before. ทำให้คุณได้ประสบการณ์แปลกใหม่อย่างที่ไม่เคยได้รับมาก่อน	Customers agree that the brand makes they have new particular feelings or physical activities. Example: I have learned many new things from Amorn.
23. The brand exceeds your expectations. ทำให้คุณพอใจเกินความคาดหมาย	Customers get products/services that are better than what they expected from the brand. Example: This is the four-star hotel with the five-star service.
24. The brand is friendly. ให้ความรู้สึกเป็นกันเอง	The brand makes customers feel very welcome. Example: I felt relaxed in the friendly atmosphere.
25. The brand expresses its willingness to help. ให้ความช่วยเหลือคุณอย่างเต็มใจ	Customers experience the excellent assistance from the brand throughout the purchase process. Example: The staffs tried their best to help me.
26. The brand answers your questions frankly. ให้ข้อมูลเกี่ยวกับสินค้า/บริการตามความเป็นจริง	When being in doubt about the brand, customers get clear and honest answers. Example: I saw a bottle of soy sauce on the shelf behind the staff, but she said she had none when I asked for it.
27. The brand keeps your privacy. รักษาความเป็นส่วนตัวของคุณ	The brand is responsible for compliance with customer data security and privacy laws. Example: The hotel respected my privacy.
28. The brand has post-purchase services, such as return and refund. มีบริการหลังการขาย เช่น ให้เปลี่ยนสินค้าหรือคืนเงิน	Customers can replace, return, and refund if they get defective product/service. Example: We found three big insects flying in the room. Luckily, the staffs got rid of them for us.
29. The brand responds positively to your special request. คุณสามารถปรับเปลี่ยนรูปแบบของสินค้า/บริการได้ตามคำสั่งซื้อ	Customers can ask the brand to adjust the product/ service to meet your specific condition. Example: The restaurant has no vegan dish, but the chef cooked some for me.
30. The brand matches your taste. ตรงกับรสนิยมของคุณ	The brand is congruent with what customers like. Example: The brand is very tasteful in my eyes.
31. The brand's marketing claims are accurate. มีสินค้า/บริการ ที่ตรงตามคำโฆษณา	Customers perceive that the brand's marketing messages are true. Example: I felt I am traveling with family as the brand said.
32. The brand maintains the quality of its product/service. รักษามาตรฐานของสินค้า/บริการ	Customers get consistently good products/services. Example: We bought only the herbs that were fully grown to extract for the most effective medicine.
33. The brand gives you the best offer. ให้สิทธิพิเศษคุณได้มากกว่าแบรนด์อื่น ๆ	Customers get better deals from the brand comparing to others in the same price range. Example: The price is lower than Homepro. Moreover, there was no installation fee.
34. It is convenient to purchase products/services of the brand. สินค้า/บริการ หาซื้อได้ง่าย	The brand has many distribution channels, so it is easy for customers to buy its products/ services. Example: I could buy the beads from online and offline shops.

Table 1A: --continued

Item	Definition
39. The brand is the original of the particular product/service. เป็นต้นตำรับของสินค้า/บริการชนิดนั้น	The brand is the first business that starts selling such products/services. Example: We are the first and the only brand that produced a room divider that helps improve the Feng Shui.
40. The brand uses customer feedback to improve its business. นำความคิดเห็นของลูกค้ามาปรับปรุงพัฒนา	Customers' comments and suggestion are well taken. Example: The brand ignored the customers' comments on the Facebook page. The admin staff just read but did not reply. The problems were not fixed.
41. The brand takes social responsibility to its heart. มีความรับผิดชอบต่อสังคม	The brand tries its best to act for the benefit of society. Example: The brand always gives back to the society.
42. You can easily communicate with the brand. มีช่องทางให้คุณติดต่อสื่อสารได้อย่างสะดวก	The brand has many communication channels and is responsive to customers' feedback. Example: I can talk directly to the brand via its online channels.
Items theoretically added	Definition
Brand awareness (Oh, 2000)	
1. Brand X is well known. X เป็นแบรนด์ที่เป็นที่รู้จัก	The brand is known widely or thoroughly in the society. Example: Case was not found in the qualitative data.
2. Brand X is visible. X เป็นแบรนด์ที่พบเห็นได้ทั่วไป	The brand appears a lot in online or offline media. Example: Case was not found in the qualitative data.
3. Brand X is heard a lot. X เป็นแบรนด์ที่ได้ยินชื่อบ่อย ๆ	Consumers listen to the story of the brand quite often. Example: Case was not found in the qualitative data.
4. Brand X is famous. X เป็นแบรนด์ที่มีชื่อเสียง	The brand is known and talked about by many people. Example: Case was not found in the qualitative data.
5. Brand X is familiar. X เป็นแบรนด์ที่ใคร ๆ รู้	The brand is often seen or heard and therefore easy to recognize. Example: Case was not found in the qualitative data.
Brand resonance (Wang et al., 2008)	
6. I would like to buy brand X. คุณอยากซื้อสินค้าจาก X	Consumers want to purchase the brand's product/ service. Example: Case was not found in the qualitative data.
7. I consider myself to be loyal to brand X. เป็นลูกค้าประจำของ X	Consumers have the positive attitude and behaviors toward the brand. Example: Case was not found in the qualitative data.
8. I am willing to recommend brand X to my friends. คุณยินดีจะแนะนำ X ให้เพื่อนรู้จัก	Consumers tell their friends about the brand. Example: Case was not found in the qualitative data.
9. I am used to brand X. คุณคุ้นเคยกับ X	The brand is familiar to consumers. Example: Case was not found in the qualitative data.
10. Brand X would be my first choice. คุณจะเลือก X เป็นอันดับแรกถ้าจะ (ซื้อสินค้า.../รับบริการ.../เช่าบ้านขาย...)	Consumers like the brand more than all the others. Example: Case was not found in the qualitative data.
11. I will not buy other brands if brand X is available at the store. คุณจะไม่ซื้อแบรนด์อื่นถ้ามี X (วางขาย/ให้บริการ/ตั้งร้านค้า) อยู่ใกล้ๆ	Consumers buy only the brand's product/ service if they can. Example: Case was not found in the qualitative data.

Appendix H

AMOS output for the confirmatory factor analysis of SME brand equity construct

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS second order try 3 components.amw

Analysis Summary

Date and Time

Date: Tuesday, October 16, 2018

Time: 10:14:27 AM

Title

Amos second order try 3 components: Tuesday, October 16, 2018 10:14 AM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 419

Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res2

res3

res1

Variable counts (Group number 1)

Number of variables in your model: 31

Number of observed variables: 12

Number of unobserved variables: 19

Number of exogenous variables: 16

Number of endogenous variables: 15

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	18	0	1	0	0	19
Labeled	0	0	0	0	0	0
Unlabeled	12	14	15	0	0	41
Total	30	14	16	0	0	60

Assessment of normality (Group number 1)

Variable	min	max	skew	c.r.	kurtosis	c.r.
item33	1.000	5.000	-1.061	-8.868	.819	3.421
item35	1.000	5.000	-1.215	-10.150	1.483	6.197
item34	1.000	5.000	-.859	-7.178	.657	2.744
item32	1.000	5.000	-1.188	-9.930	1.048	4.380
item9	1.000	5.000	-.658	-5.499	.276	1.153
item8	1.000	5.000	-.698	-5.833	.316	1.320
item27	1.000	5.000	-.868	-7.252	.529	2.209
item16	2.000	5.000	-1.191	-9.949	.420	1.753
item17	2.000	5.000	-1.191	-9.949	.420	1.753
item22	1.000	5.000	-1.299	-10.852	1.248	5.213
item21	2.000	5.000	-.930	-7.769	-.057	-.236
item20	2.000	5.000	-1.134	-9.477	.656	2.743
Multivariate					86.162	48.109

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 78



Number of distinct parameters to be estimated: 41
 Degrees of freedom (78 - 41): 37
 Result (Default model)
 Minimum was achieved
 Chi-square = 40.220
 Degrees of freedom = 37
 Probability level = .330
 Group number 1 (Group number 1 - Default model)
 Estimates (Group number 1 - Default model)
 Scalar Estimates (Group number 1 - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
BFunc	<--	SMEBE	.507	.032	15.769	***	par_10
BAttent	<--	SMEBE	.579	.035	16.630	***	par_11
BAuthen	<--	SMEBE	.397	.042	9.394	***	par_12
item20	<--	BFunc	1.000				
item21	<--	BFunc	.952	.054	17.555	***	par_1
item22	<--	BFunc	.969	.055	17.573	***	par_2
item17	<--	BFunc	.901	.052	17.484	***	par_3
item16	<--	BFunc	.845	.053	15.824	***	par_4
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.145	.134	8.548	***	par_5
item9	<--	BAuthen	.732	.120	6.089	***	par_6
item32	<--	BAttent	1.000				
item34	<--	BAttent	.816	.072	11.306	***	par_7
item35	<--	BAttent	.956	.059	16.202	***	par_8
item33	<--	BAttent	1.078	.062	17.308	***	par_9

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
BFunc	<--	SMEBE	.897
BAttent	<--	SMEBE	.978
BAuthen	<--	SMEBE	.762
item20	<--	BFunc	.821
item21	<--	BFunc	.778
item22	<--	BFunc	.781
item17	<--	BFunc	.778
item16	<--	BFunc	.730
item27	<--	BAuthen	.615
item8	<--	BAuthen	.679
item9	<--	BAuthen	.388
item32	<--	BAttent	.804
item34	<--	BAttent	.574
item35	<--	BAttent	.757
item33	<--	BAttent	.807

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.076	.012	6.230	***	par_13
e27	<-->	e34	.167	.026	6.349	***	par_14
e27	<-->	e35	.078	.019	3.996	***	par_15
e8	<-->	e9	.245	.041	6.028	***	par_16
e27	<-->	e9	.166	.033	4.964	***	par_17
e21	<-->	e27	.036	.016	2.252	.024	par_18
e20	<-->	e34	.050	.015	3.379	***	par_19
e16	<-->	e33	-.023	.011	-2.224	.026	par_20
e9	<-->	e34	.133	.031	4.269	***	par_21
e20	<-->	e33	.007	.012	.548	.584	par_22
e22	<-->	e16	.016	.010	1.488	.137	par_23
e34	<-->	e33	.071	.019	3.694	***	par_24
e8	<-->	e34	.109	.026	4.217	***	par_25
e34	<-->	e35	-.049	.018	-2.664	.008	par_26

Correlations: (Group number 1 - Default model)

			Estimate
e17	<-->	e16	.411
e27	<-->	e34	.364
e27	<-->	e35	.238
e8	<-->	e9	.420
e27	<-->	e9	.275
e21	<-->	e27	.122
e20	<-->	e34	.185
e16	<-->	e33	-.112
e9	<-->	e34	.214
e20	<-->	e33	.036
e22	<-->	e16	.079
e34	<-->	e33	.222
e8	<-->	e34	.246
e34	<-->	e35	.145

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				

	Estimate	S.E.	C.R.	P	Label
res2	.114	.028	4.050	***	par_27
res3	.015	.019	.778	.437	par_28
res1	.063	.017	3.666	***	par_29
e20	.155	.014	10.816	***	par_30
e21	.189	.016	11.884	***	par_31
e22	.192	.016	11.743	***	par_32
e17	.169	.014	11.799	***	par_33
e16	.200	.017	12.027	***	par_34
e27	.446	.042	10.625	***	par_35
e8	.416	.048	8.692	***	par_36
e9	.819	.063	12.923	***	par_37
e32	.192	.018	10.671	***	par_38
e34	.475	.036	13.140	***	par_39
e35	.238	.020	11.716	***	par_40
e33	.219	.021	10.477	***	par_41

Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
BAttent	.957
BAuthen	.581
BFunct	.804
item33	.651
item35	.574
item34	.330
item32	.646
item9	.151
item8	.461
item27	.378
item16	.533
item17	.605
item22	.610
item21	.605
item20	.674

Matrices (Group number 1 - Default model)

Residual Covariances (Group number 1 - Default model)

	item33	item35	item34	item32	item9	item8	item27	item16	item17	item22	item21	item20
item33	.000											
item35	.004	.000										
item34	.006	.010	.007									
item32	-.003	-.008	-.001	.000								
item9	.035	.060	.020	-.025	.000							
item8	.022	.021	.012	-.020	.000	.000						
item27	-.003	.013	.006	-.012	.021	.005	.010					
item16	-.001	.014	-.018	.020	-.034	-.020	-.003	.000				
item17	.001	.004	.000	.018	-.011	.010	.000	.000	.000			
item22	-.016	-.003	-.021	.014	-.065	-.026	-.008	-.001	-.005	.000		
item21	-.004	-.013	-.006	-.006	.001	-.010	-.001	-.003	.000	.009	.001	
item20	-.003	-.004	-.004	.006	-.029	.001	.006	-.005	-.004	.001	.003	-.001

Standardized Residual Covariances (Group number 1 - Default model)

	item33	item35	item34	item32	item9	item8	item27	item16	item17	item22	item21	item20
item33	-.006											
item35	.117	-.009										
item34	.147	.276	.136									
item32	-.079	-.248	-.036	.000								
item9	.901	1.623	.460	-.688	-.002							
item8	.598	.608	.305	-.594	-.004	-.004						
item27	-.083	.393	.160	-.381	.480	.132	.201					
item16	-.047	.542	-.611	.756	-1.063	-.671	-.121	.015				
item17	.022	.132	.005	.670	-.349	.340	-.012	.001	.000			
item22	-.518	-.116	-.660	.469	-1.887	-.809	-.248	-.033	-.189	.000		
item21	-.124	-.456	-.197	-.210	.026	-.322	-.024	-.101	-.017	.313	.023	
item20	-.090	-.138	-.129	.217	-.855	.044	.206	-.207	-.154	.024	.126	-.027

Factor Score Weights (Group number 1 - Default model)

	item33	item35	item34	item32	item9	item8	item27	item16	item17	item22	item21	item20
SMEBE	.316	.240	-.019	.321	-.003	.102	.033	.106	.099	.130	.133	.171
BAttent	.208	.165	.002	.217	.000	.048	.005	.059	.044	.062	.066	.076
BAuthen	.130	.026	-.126	.092	-.035	.253	.219	.035	.023	.034	-.004	.083
BFunct	.075	.057	-.024	.069	.003	.025	.002	.082	.135	.156	.162	.213

Modification Indices (Group number 1 - Default model)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change
e9 <-> res3	4.089	.031
e9 <-> res1	5.225	-.035
e9 <-> e35	5.106	.044
e22 <-> e9	4.855	-.040

Variances: (Group number 1 - Default model)

	M.I.	Par Change
--	------	------------

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
item35 <--- item9	6.403	.064
item22 <--- item9	5.916	-.057

Minimization History (Default model)

Iteration		Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e	15		-.938	9999.000	2776.913	0	9999.000
1	e	8		-.286	1.558	1428.469	20	.681
2	e	5		-.233	.448	1108.202	6	.832
3	e*	3		-.328	.981	657.708	6	.722
4	e	1		-.202	1.141	299.917	7	.775
5	e*	0	187.098		.615	91.927	6	.817
6	e	0	97.635		.481	60.620	2	.000
7	e	0	254.938		.329	43.318	1	.807
8	e	0	123.338		.155	40.322	1	1.040
9	e	0	128.527		.029	40.221	1	.975
10	e	0	126.612		.001	40.220	1	1.003
11	e	0	126.606		.000	40.220	1	.999

Pairwise Parameter Comparisons (Default model)

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	41	40.220	37	.330	1.087
Saturated model	78	.000	0		
Independence model	12	2761.345	66	.000	41.839

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.016	.984	.967	.467
Saturated model	.000	1.000		
Independence model	.248	.288	.158	.244

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.985	.974	.999	.998	.999
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.561	.552	.560
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	3.220	.000	22.817
Saturated model	.000	.000	.000
Independence model	2695.345	2527.116	2870.899

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.096	.008	.000	.055
Saturated model	.000	.000	.000	.000
Independence model	6.606	6.448	6.046	6.868

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.014	.000	.038	.997
Independence model	.313	.303	.323	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	122.220	124.852	287.773	328.773
Saturated model	156.000	161.007	470.954	548.954
Independence model	2785.345	2786.115	2833.799	2845.799

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.292	.285	.339	.299
Saturated model	.373	.373	.373	.385
Independence model	6.664	6.261	7.083	6.665

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	543	623
Independence model	14	15

Execution time summary

Minimization:	.000
Miscellaneous:	.270
Bootstrap:	.000
Total:	.270

Appendix I

AMOS output for the second-order factor model of SME brand equity (Model 1)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS second order try 3 components.amw

Analysis Summary

Date and Time

Date: Tuesday, October 16, 2018

Time: 10:14:27 AM

Title

Amos second order try 3 components: Tuesday, October 16, 2018 10:14 AM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 419

Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res2

res3

res1

Variable counts (Group number 1)

Number of variables in your model: 31

Number of observed variables: 12

Number of unobserved variables: 19

Number of exogenous variables: 16

Number of endogenous variables: 15

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	18	0	1	0	0	19
Labeled	0	0	0	0	0	0
Unlabeled	12	14	15	0	0	41
Total	30	14	16	0	0	60

Assessment of normality (Group number 1)

Variable	min	max	skew	c.r.	kurtosis	c.r.
item33	1.000	5.000	-1.061	-8.868	.819	3.421
item35	1.000	5.000	-1.215	-10.150	1.483	6.197
item34	1.000	5.000	-.859	-7.178	.657	2.744
item32	1.000	5.000	-1.188	-9.930	1.048	4.380
item9	1.000	5.000	-.658	-5.499	.276	1.153
item8	1.000	5.000	-.698	-5.833	.316	1.320
item27	1.000	5.000	-.868	-7.252	.529	2.209
item16	2.000	5.000	-1.191	-9.949	.420	1.753
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item21	2.000	5.000	-.930	-7.769	-.057	-.236
item20	2.000	5.000	-1.134	-9.477	.656	2.743
Multivariate					86.162	48.109

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 78



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Number of distinct parameters to be estimated: 41
 Degrees of freedom (78 - 41): 37
 Result (Default model)
 Minimum was achieved
 Chi-square = 40.220
 Degrees of freedom = 37
 Probability level = .330
 Group number 1 (Group number 1 - Default model)
 Estimates (Group number 1 - Default model)
 Scalar Estimates (Group number 1 - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
BFunc	<--	SMEBE	.507	.032	15.769	***	par_10
BAttent	<--	SMEBE	.579	.035	16.630	***	par_11
BAuthen	<--	SMEBE	.397	.042	9.394	***	par_12
item20	<--	BFunc	1.000				
item21	<--	BFunc	.952	.054	17.555	***	par_1
item22	<--	BFunc	.969	.055	17.573	***	par_2
item17	<--	BFunc	.901	.052	17.484	***	par_3
item16	<--	BFunc	.845	.053	15.824	***	par_4
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.145	.134	8.548	***	par_5
item9	<--	BAuthen	.732	.120	6.089	***	par_6
item32	<--	BAttent	1.000				
item34	<--	BAttent	.816	.072	11.306	***	par_7
item35	<--	BAttent	.956	.059	16.202	***	par_8
item33	<--	BAttent	1.078	.062	17.308	***	par_9

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
BFunc	<--	SMEBE	.897
BAttent	<--	SMEBE	.978
BAuthen	<--	SMEBE	.762
item20	<--	BFunc	.821
item21	<--	BFunc	.778
item22	<--	BFunc	.781
item17	<--	BFunc	.778
item16	<--	BFunc	.730
item27	<--	BAuthen	.615
item8	<--	BAuthen	.679
item9	<--	BAuthen	.388
item32	<--	BAttent	.804
item34	<--	BAttent	.574
item35	<--	BAttent	.757
item33	<--	BAttent	.807

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.076	.012	6.230	***	par_13
e27	<-->	e34	.167	.026	6.349	***	par_14
e27	<-->	e35	.078	.019	3.996	***	par_15
e8	<-->	e9	.245	.041	6.028	***	par_16
e27	<-->	e9	.166	.033	4.964	***	par_17
e21	<-->	e27	.036	.016	2.252	.024	par_18
e20	<-->	e34	.050	.015	3.379	***	par_19
e16	<-->	e33	-.023	.011	-2.224	.026	par_20
e9	<-->	e34	.133	.031	4.269	***	par_21
e20	<-->	e33	.007	.012	.548	.584	par_22
e22	<-->	e16	.016	.010	1.488	.137	par_23
e34	<-->	e33	.071	.019	3.694	***	par_24
e8	<-->	e34	.109	.026	4.217	***	par_25
e34	<-->	e35	-.049	.018	-2.664	.008	par_26

Correlations: (Group number 1 - Default model)

			Estimate
e17	<-->	e16	.411
e27	<-->	e34	.364
e27	<-->	e35	.238
e8	<-->	e9	.420
e27	<-->	e9	.275
e21	<-->	e27	.122
e20	<-->	e34	.185
e16	<-->	e33	-.112
e9	<-->	e34	.214
e20	<-->	e33	.036
e22	<-->	e16	.079
e34	<-->	e33	.222
e8	<-->	e34	.246
e34	<-->	e35	.145

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				

	Estimate	S.E.	C.R.	P	Label
res2	.114	.028	4.050	***	par_27
res3	.015	.019	.778	.437	par_28
res1	.063	.017	3.666	***	par_29
e20	.155	.014	10.816	***	par_30
e21	.189	.016	11.884	***	par_31
e22	.192	.016	11.743	***	par_32
e17	.169	.014	11.799	***	par_33
e16	.200	.017	12.027	***	par_34
e27	.446	.042	10.625	***	par_35
e8	.416	.048	8.692	***	par_36
e9	.819	.063	12.923	***	par_37
e32	.192	.018	10.671	***	par_38
e34	.475	.036	13.140	***	par_39
e35	.238	.020	11.716	***	par_40
e33	.219	.021	10.477	***	par_41

Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
BAttent	.957
BAuthen	.581
BFunct	.804
item33	.651
item35	.574
item34	.330
item32	.646
item9	.151
item8	.461
item27	.378
item16	.533
item17	.605
item22	.610
item21	.605
item20	.674

Matrices (Group number 1 - Default model)

Residual Covariances (Group number 1 - Default model)

	item33	item35	item34	item32	item9	item8	item27	item16	item17	item22	item21	item20
item33	.000											
item35	.004	.000										
item34	.006	.010	.007									
item32	-.003	-.008	-.001	.000								
item9	.035	.060	.020	-.025	.000							
item8	.022	.021	.012	-.020	.000	.000						
item27	-.003	.013	.006	-.012	.021	.005	.010					
item16	-.001	.014	-.018	.020	-.034	-.020	-.003	.000				
item17	.001	.004	.000	.018	-.011	.010	.000	.000	.000			
item22	-.016	-.003	-.021	.014	-.065	-.026	-.008	-.001	-.005	.000		
item21	-.004	-.013	-.006	-.006	.001	-.010	-.001	-.003	.000	.009	.001	
item20	-.003	-.004	-.004	.006	-.029	.001	.006	-.005	-.004	.001	.003	-.001

Standardized Residual Covariances (Group number 1 - Default model)

	item33	item35	item34	item32	item9	item8	item27	item16	item17	item22	item21	item20
item33	-.006											
item35	.117	-.009										
item34	.147	.276	.136									
item32	-.079	-.248	-.036	.000								
item9	.901	1.623	.460	-.688	-.002							
item8	.598	.608	.305	-.594	-.004	-.004						
item27	-.083	.393	.160	-.381	.480	.132	.201					
item16	-.047	.542	-.611	.756	-1.063	-.671	-.121	.015				
item17	.022	.132	.005	.670	-.349	.340	-.012	.001	.000			
item22	-.518	-.116	-.660	.469	-1.887	-.809	-.248	-.033	-.189	.000		
item21	-.124	-.456	-.197	-.210	.026	-.322	-.024	-.101	-.017	.313	.023	
item20	-.090	-.138	-.129	.217	-.855	.044	.206	-.207	-.154	.024	.126	-.027

Factor Score Weights (Group number 1 - Default model)

	item33	item35	item34	item32	item9	item8	item27	item16	item17	item22	item21	item20
SMEBE	.316	.240	-.019	.321	-.003	.102	.033	.106	.099	.130	.133	.171
BAttent	.208	.165	.002	.217	.000	.048	.005	.059	.044	.062	.066	.076
BAuthen	.130	.026	-.126	.092	-.035	.253	.219	.035	.023	.034	-.004	.083
BFunct	.075	.057	-.024	.069	.003	.025	.002	.082	.135	.156	.162	.213

Modification Indices (Group number 1 - Default model)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change
e9 <-> res3	4.089	.031
e9 <-> res1	5.225	-.035
e9 <-> e35	5.106	.044
e22 <-> e9	4.855	-.040

Variances: (Group number 1 - Default model)

	M.I.	Par Change
--	------	------------

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
item35 <--- item9	6.403	.064
item22 <--- item9	5.916	-.057

Minimization History (Default model)

Iteration		Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e	15		-.938	9999.000	2776.913	0	9999.000
1	e	8		-.286	1.558	1428.469	20	.681
2	e	5		-.233	.448	1108.202	6	.832
3	e*	3		-.328	.981	657.708	6	.722
4	e	1		-.202	1.141	299.917	7	.775
5	e*	0	187.098		.615	91.927	6	.817
6	e	0	97.635		.481	60.620	2	.000
7	e	0	254.938		.329	43.318	1	.807
8	e	0	123.338		.155	40.322	1	1.040
9	e	0	128.527		.029	40.221	1	.975
10	e	0	126.612		.001	40.220	1	1.003
11	e	0	126.606		.000	40.220	1	.999

Pairwise Parameter Comparisons (Default model)

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	41	40.220	37	.330	1.087
Saturated model	78	.000	0		
Independence model	12	2761.345	66	.000	41.839

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.016	.984	.967	.467
Saturated model	.000	1.000		
Independence model	.248	.288	.158	.244

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.985	.974	.999	.998	.999
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.561	.552	.560
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	3.220	.000	22.817
Saturated model	.000	.000	.000
Independence model	2695.345	2527.116	2870.899

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.096	.008	.000	.055
Saturated model	.000	.000	.000	.000
Independence model	6.606	6.448	6.046	6.868

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.014	.000	.038	.997
Independence model	.313	.303	.323	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	122.220	124.852	287.773	328.773
Saturated model	156.000	161.007	470.954	548.954
Independence model	2785.345	2786.115	2833.799	2845.799

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.292	.285	.339	.299
Saturated model	.373	.373	.373	.385
Independence model	6.664	6.261	7.083	6.665

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	543	623
Independence model	14	15

Execution time summary

Minimization:	.000
Miscellaneous:	.270
Bootstrap:	.000
Total:	.270

Appendix J

AMOS output for the causal model of SME brand equity (Model 2)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS formative try 3 components.amw

Analysis Summary

Date and Time

Date: Monday, November 5, 2018

Time: 1:32:51 AM

Title

Amos formative try 3 components: Monday, November 5, 2018 1:32 AM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 419

Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

BE1

BE2

BE3

BE4

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

SMEBE

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

res2

res3

res1

e1

e2

e3

e4

res4

Variable counts (Group number 1)

Number of variables in your model: 40

Number of observed variables: 16

Number of unobserved variables: 24

Number of exogenous variables: 20

Number of endogenous variables: 20

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	24	0	0	0	0	24
Labeled	0	0	0	0	0	0
Unlabeled	15	16	20	0	0	51
Total	39	16	20	0	0	75

Assessment of normality (Group number 1)

Variable	min	max	skew	c.r.	kurtosis	c.r.
BE4	1.000	5.000	-.961	-8.027	.852	3.561
BE3	1.000	5.000	-.916	-7.659	.729	3.048
BE2	1.000	5.000	-.888	-7.421	.689	2.878
BE1	1.000	5.000	-.683	-5.710	.118	.494
item33	1.000	5.000	-1.061	-8.868	.819	3.421
item35	1.000	5.000	-1.215	-10.150	1.483	6.197
item34	1.000	5.000	-.859	-7.178	.657	2.744
item32	1.000	5.000	-1.188	-9.930	1.048	4.380
item9	1.000	5.000	-.658	-5.499	.276	1.153
item8	1.000	5.000	-.698	-5.833	.316	1.320
item27	1.000	5.000	-.868	-7.252	.529	2.209
item16	2.000	5.000	-1.191	-9.949	.420	1.753
item17	2.000	5.000	-1.191	-9.949	.420	1.753



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Variable	min	max	skew	c.r.	kurtosis	c.r.
item22	1.000	5.000	-1.299	-10.852	1.248	5.213
item21	2.000	5.000	-.930	-7.769	-.057	-.236
item20	2.000	5.000	-1.134	-9.477	.656	2.743
Multivariate					119.419	50.926

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 136

Number of distinct parameters to be estimated: 51

Degrees of freedom (136 - 51): 85

Result (Default model)

Minimum was achieved

Chi-square = 574,045

Degrees of freedom = 85

Probability level = .000

Group number 1 (Group number 1 - Default model)

Estimates (Group number 1 - Default model)

Scalar Estimates (Group number 1 - Default model)

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE <-- BFunc	.119	.055	2.141	.032	par_13
SMEBE <-- BAuthen	.495	.091	5.463	***	par_14
SMEBE <-- BAttent	.450	.060	7.551	***	par_15
item20 <-- BFunc	1.000				
item21 <-- BFunc	.970	.057	17.054	***	par_1
item22 <-- BFunc	.998	.059	17.037	***	par_2
item17 <-- BFunc	.897	.055	16.320	***	par_3
item16 <-- BFunc	.853	.057	14.937	***	par_4
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	1.419	.161	8.831	***	par_5
item9 <-- BAuthen	1.732	.198	8.728	***	par_6
item32 <-- BAttent	1.000				
item34 <-- BAttent	.802	.075	10.700	***	par_7
item35 <-- BAttent	.930	.068	13.722	***	par_8
item33 <-- BAttent	1.038	.074	14.045	***	par_9
BE1 <-- SMEBE	1.000				
BE2 <-- SMEBE	1.027	.061	16.922	***	par_10
BE3 <-- SMEBE	.953	.068	13.988	***	par_11
BE4 <-- SMEBE	1.034	.071	14.572	***	par_12

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
SMEBE <-- BFunc	.109
SMEBE <-- BAuthen	.354
SMEBE <-- BAttent	.424
item20 <-- BFunc	.814
item21 <-- BFunc	.784
item22 <-- BFunc	.784
item17 <-- BFunc	.757
item16 <-- BFunc	.720
item27 <-- BAuthen	.523
item8 <-- BAuthen	.702
item9 <-- BAuthen	.768
item32 <-- BAttent	.784
item34 <-- BAttent	.589
item35 <-- BAttent	.729
item33 <-- BAttent	.765
BE1 <-- SMEBE	.824
BE2 <-- SMEBE	.812
BE3 <-- SMEBE	.687
BE4 <-- SMEBE	.711

Covariances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.086	.013	6.419	***	par_16
e27 <--> e35	.147	.022	6.711	***	par_17
e3 <--> e4	.064	.023	2.716	.007	par_18
e27 <--> e34	.224	.028	7.951	***	par_19
e20 <--> e34	.060	.015	4.073	***	par_20
e22 <--> e1	-.039	.012	-3.277	.001	par_21
e33 <--> e4	-.052	.017	-3.068	.002	par_22
e20 <--> e4	.031	.014	2.194	.028	par_23
e9 <--> e34	.137	.031	4.505	***	par_24
e22 <--> e16	.016	.011	1.438	.150	par_25
e20 <--> e33	.043	.013	3.319	***	par_26
e27 <--> e32	.071	.020	3.444	***	par_27
e9 <--> e3	.080	.024	3.276	.001	par_28
e8 <--> e34	.143	.028	5.117	***	par_29
e21 <--> e33	.040	.013	3.087	.002	par_30

	BE 4	BE 3	BE 2	BE 1	item 33	item 35	item 34	item 32	item 9	item 8	item 27	item 16	item 17	item 22	item 21	item 20
98																
BE3	1.509	1.187														
BE2	2.039	1.821	1.774													
BE1	1.892	1.482	2.095	1.654												
item 33	2.433	3.500	2.953	2.536	.740											
item 35	2.285	3.881	3.501	3.946	1.705	.880										
item 34	4.179	4.834	3.860	4.146	3.648	3.057	2.854									
item 32	1.204	2.089	2.389	2.031	1.251	.908	3.041	.453								
item 9	2.130	2.180	1.562	2.808	5.894	6.383	4.081	4.150	.225							
item 8	4.690	4.895	4.038	4.656	9.283	8.802	5.717	7.846	.286	.172						
item 27	2.352	2.633	2.592	4.186	7.860	5.411	4.153	4.982	1.470	1.353	.941					
item 16	3.379	4.769	5.671	5.003	9.831	10.834	7.477	11.549	2.902	6.254	6.300	.000				
item 17	2.812	4.269	4.922	4.731	11.569	11.040	8.734	12.165	3.896	7.789	6.841	.000	.000			
item 22	4.251	4.617	5.290	5.612	10.968	10.782	7.976	11.963	2.327	6.581	6.605	.045	.040	-.036		
item 21	3.722	4.812	6.000	6.316	9.958	10.504	8.613	11.303	4.342	7.180	8.209	.098	.334	.316	.423	
item 20	4.302	4.942	5.935	6.008	10.781	11.498	8.748	12.458	3.664	8.001	7.568	.186	.404	.224	.458	.396

Factor Score Weights (Group number 1 - Default model)

	BE 4	BE 3	BE 2	BE 1	item 33	item 35	item 34	item 32	item 9	item 8	item 27	item 16	item 17	item 22	item 21	item 20
BAttent	.041	-.001	.018	.029	.167	.226	-.226	.292	.013	-.007	-.169	.013	.025	.038	-.003	-.100
BAuthen	-.033	-.036	.033	.037	.093	-.018	-.202	-.015	.215	.188	.161	-.004	-.006	.000	-.030	.035
BFunct	-.031	.007	.002	.047	-.063	.027	-.022	.027	-.001	.002	-.005	.078	.146	.199	.215	.271
SMEBE	.130	-.106	-.262	.310	.050	-.008	-.002	.014	-.007	.024	.010	-.005	.005	.066	-.009	-.037

Total Effects (Group number 1 - Default model)

	BAttent	BAuthen	BFunct	SMEBE
SMEBE	.450	.495	.119	.000
BE4	.466	.512	.123	1.034
BE3	.429	.472	.113	.953
BE2	.463	.508	.122	1.027
BE1	.450	.495	.119	1.000
item33	1.038	.000	.000	.000
item35	.930	.000	.000	.000
item34	.802	.000	.000	.000
item32	1.000	.000	.000	.000
item9	.000	1.732	.000	.000
item8	.000	1.419	.000	.000
item27	.000	1.000	.000	.000
item16	.000	.000	.853	.000
item17	.000	.000	.897	.000
item22	.000	.000	.998	.000
item21	.000	.000	.970	.000
item20	.000	.000	1.000	.000

Standardized Total Effects (Group number 1 - Default model)

	BAttent	BAuthen	BFunct	SMEBE
SMEBE	.424	.354	.109	.000
BE4	.301	.252	.077	.711
BE3	.291	.243	.074	.687
BE2	.344	.287	.088	.812
BE1	.349	.292	.089	.824
item33	.765	.000	.000	.000
item35	.729	.000	.000	.000
item34	.589	.000	.000	.000
item32	.784	.000	.000	.000
item9	.000	.768	.000	.000
item8	.000	.702	.000	.000
item27	.000	.523	.000	.000
item16	.000	.000	.720	.000
item17	.000	.000	.757	.000

	BAttent	BAuthen	BFunct	SMEBE
item22	.000	.000	.784	.000
item21	.000	.000	.784	.000
item20	.000	.000	.814	.000

Direct Effects (Group number 1 - Default model)

	BAttent	BAuthen	BFunct	SMEBE
SMEBE	.450	.495	.119	.000
BE4	.000	.000	.000	1.034
BE3	.000	.000	.000	.953
BE2	.000	.000	.000	1.027
BE1	.000	.000	.000	1.000
item33	1.038	.000	.000	.000
item35	.930	.000	.000	.000
item34	.802	.000	.000	.000
item32	1.000	.000	.000	.000
item9	.000	1.732	.000	.000
item8	.000	1.419	.000	.000
item27	.000	1.000	.000	.000
item16	.000	.000	.853	.000
item17	.000	.000	.897	.000
item22	.000	.000	.998	.000
item21	.000	.000	.970	.000
item20	.000	.000	1.000	.000

Standardized Direct Effects (Group number 1 - Default model)

	BAttent	BAuthen	BFunct	SMEBE
SMEBE	.424	.354	.109	.000
BE4	.000	.000	.000	.711
BE3	.000	.000	.000	.687
BE2	.000	.000	.000	.812
BE1	.000	.000	.000	.824
item33	.765	.000	.000	.000
item35	.729	.000	.000	.000
item34	.589	.000	.000	.000
item32	.784	.000	.000	.000
item9	.000	.768	.000	.000
item8	.000	.702	.000	.000
item27	.000	.523	.000	.000
item16	.000	.000	.720	.000
item17	.000	.000	.757	.000
item22	.000	.000	.784	.000
item21	.000	.000	.784	.000
item20	.000	.000	.814	.000

Indirect Effects (Group number 1 - Default model)

	BAttent	BAuthen	BFunct	SMEBE
SMEBE	.000	.000	.000	.000
BE4	.466	.512	.123	.000
BE3	.429	.472	.113	.000
BE2	.463	.508	.122	.000
BE1	.450	.495	.119	.000
item33	.000	.000	.000	.000
item35	.000	.000	.000	.000
item34	.000	.000	.000	.000
item32	.000	.000	.000	.000
item9	.000	.000	.000	.000
item8	.000	.000	.000	.000
item27	.000	.000	.000	.000
item16	.000	.000	.000	.000
item17	.000	.000	.000	.000
item22	.000	.000	.000	.000
item21	.000	.000	.000	.000
item20	.000	.000	.000	.000

Standardized Indirect Effects (Group number 1 - Default model)

	BAttent	BAuthen	BFunct	SMEBE
SMEBE	.000	.000	.000	.000
BE4	.301	.252	.077	.000
BE3	.291	.243	.074	.000
BE2	.344	.287	.088	.000
BE1	.349	.292	.089	.000
item33	.000	.000	.000	.000
item35	.000	.000	.000	.000
item34	.000	.000	.000	.000
item32	.000	.000	.000	.000
item9	.000	.000	.000	.000
item8	.000	.000	.000	.000
item27	.000	.000	.000	.000
item16	.000	.000	.000	.000
item17	.000	.000	.000	.000
item22	.000	.000	.000	.000

	BAttent	BAuthen	BFunct	SMEBE
item21	.000	.000	.000	.000
item20	.000	.000	.000	.000

Modification Indices (Group number 1 - Default model)
Covariances: (Group number 1 - Default model)

	M.I.	Par Change
res2 <-> res3	70.523	.116
res1 <-> res3	204.624	.248
res1 <-> res2	46.221	.093
e33 <-> res2	9.714	.038
e33 <-> res1	13.194	.055
e35 <-> res2	13.853	.045
e35 <-> res1	10.927	.050
e32 <-> res1	33.492	.089
e8 <-> res3	48.169	.144
e8 <-> res1	41.872	.132
e27 <-> res3	8.524	.056
e27 <-> res1	12.029	.067
e27 <-> e33	7.890	.047
e17 <-> res3	7.572	.032
e17 <-> res4	6.150	-.028
e17 <-> e33	7.211	.028
e17 <-> e8	5.962	.034
e22 <-> res3	6.600	.036
e21 <-> res2	4.492	.023
e20 <-> res3	10.644	.042
e20 <-> e8	4.122	.031

Variances: (Group number 1 - Default model)

	M.I.	Par Change
--	------	------------

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
BAttent <-> BAuthen	70.523	.621
BAttent <-> BFunct	204.624	.810
BAuthen <-> BAttent	70.523	.359
BAuthen <-> BFunct	46.221	.304
BFunct <-> BAttent	204.624	.767
BFunct <-> BAuthen	46.221	.496
item33 <-> BAuthen	9.714	.203
item33 <-> BFunct	13.194	.181
item33 <-> item9	4.452	.056
item33 <-> item8	10.382	.096
item33 <-> item27	17.181	.130
item33 <-> item16	4.763	.086
item33 <-> item17	15.552	.156
item33 <-> item22	13.576	.136
item33 <-> item21	7.156	.101
item33 <-> item20	7.657	.106
item35 <-> BAuthen	13.853	.242
item35 <-> BFunct	10.927	.164
item35 <-> SMEBE	5.856	.111
item35 <-> BE3	4.734	.067
item35 <-> BE1	6.228	.088
item35 <-> item9	11.333	.089
item35 <-> item8	10.927	.097
item35 <-> item16	11.210	.132
item35 <-> item17	7.058	.104
item35 <-> item22	5.440	.085
item35 <-> item21	5.610	.089
item35 <-> item20	9.258	.115
item34 <-> BE4	4.309	.071
item34 <-> BE3	4.107	.072
item32 <-> BFunct	33.492	.291
item32 <-> item16	24.673	.198
item32 <-> item17	24.411	.197
item32 <-> item22	22.837	.177
item32 <-> item21	20.740	.174
item32 <-> item20	27.520	.201
item9 <-> item22	5.314	-.123
item8 <-> BAttent	48.169	.447
item8 <-> BFunct	41.872	.433
item8 <-> SMEBE	21.924	.290
item8 <-> BE4	13.978	.148
item8 <-> BE3	16.784	.169
item8 <-> BE2	11.868	.156
item8 <-> BE1	10.286	.152
item8 <-> item33	39.883	.284
item8 <-> item35	34.026	.279
item8 <-> item34	13.942	.168

		M.I.	Par Change
item8	<--- item32	37.401	.293
item8	<--- item16	24.888	.264
item8	<--- item17	38.377	.328
item8	<--- item22	30.203	.271
item8	<--- item21	21.418	.235
item8	<--- item20	39.410	.321
item27	<--- BAttent	8.524	.175
item27	<--- BFunc	12.029	.220
item27	<--- item33	17.184	.177
item27	<--- item35	4.240	.094
item27	<--- item32	4.904	.101
item27	<--- item16	5.584	.119
item27	<--- item17	6.199	.125
item27	<--- item22	9.695	.146
item27	<--- item21	14.472	.183
item27	<--- item20	8.718	.143
item17	<--- BAttent	7.572	.100
item17	<--- item33	13.901	.095
item17	<--- item34	6.147	.063
item17	<--- item32	5.769	.065
item17	<--- item8	8.116	.064
item22	<--- BAttent	6.600	.111
item22	<--- item33	7.674	.084
item22	<--- item35	4.509	.068
item22	<--- item32	6.696	.083
item21	<--- BAAuthen	4.492	.123
item21	<--- SMEBE	5.399	.095
item21	<--- BE2	4.062	.061
item21	<--- BE1	6.247	.079
item21	<--- item34	4.200	.061
item21	<--- item9	4.493	.050
item21	<--- item27	7.952	.079
item20	<--- BAttent	10.644	.131
item20	<--- item33	5.564	.066
item20	<--- item35	9.886	.094
item20	<--- item32	10.831	.098
item20	<--- item8	4.184	.051

Minimization History (Default model)

Iteration	Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e 16		-.960	9999.000	3797.604	0	9999.000
1	e 11		-.191	1.801	2036.285	20	.667
2	e 6		-.157	.526	1620.638	6	.830
3	e* 1		-.065	1.292	979.191	6	.660
4	e 1		-.005	.926	723.300	5	.695
5	e 0	78.344		.681	597.605	5	.921
6	e 0	137.343		.347	576.208	1	1.128
7	e 0	201.433		.188	574.207	1	1.114
8	e 0	251.018		.064	574.048	1	1.073
9	e 0	254.087		.011	574.045	1	1.012
10	e 0	254.129		.000	574.045	1	1.000

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	51	574.045	85	.000	6.753
Saturated model	136	.000	0		
Independence model	16	3811.325	120	.000	31.761

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.151	.861	.777	.538
Saturated model	.000	1.000		
Independence model	.244	.265	.167	.234

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.849	.787	.869	.813	.868
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.708	.602	.614
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	489.045	416.903	568.674
Saturated model	.000	.000	.000

Model	NCP	LO 90	HI 90
Independence model	3691.325	3493.399	3896.532

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.373	1.170	.997	1.360
Saturated model	.000	.000	.000	.000
Independence model	9.118	8.831	8.357	9.322

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.117	.108	.127	.000
Independence model	.271	.264	.279	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	676.045	680.369	881.977	932.977
Saturated model	272.000	283.531	821.150	957.150
Independence model	3843.325	3844.681	3907.931	3923.931

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.617	1.445	1.808	1.628
Saturated model	.651	.651	.651	.678
Independence model	9.195	8.721	9.685	9.198

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	79	87
Independence model	17	18

Execution time summary

Minimization:	.003
Miscellaneous:	.536
Bootstrap:	.000
Total:	.539



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Appendix K

AMOS output for the causal model with relationships between dimensions of SME brand equity (Model 3)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS causal model 3 components try cfa data.amw

Analysis Summary

Date and Time

Date: Monday, November 5, 2018

Time: 11:10:11 AM

Title

Amos causal model 3 components try cfa data: Monday, November 5, 2018 11:10 AM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 419

Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

res2

res3

res1

Variable counts (Group number 1)

Number of variables in your model: 30

Number of observed variables: 12

Number of unobserved variables: 18

Number of exogenous variables: 15

Number of endogenous variables: 15

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	18	0	0	0	0	18
Labeled	0	0	0	0	0	0
Unlabeled	12	15	15	0	0	42
Total	30	15	15	0	0	60

Assessment of normality (Group number 1)

Variable	min	max	skew	c.r.	kurtosis	c.r.
item33	1.000	5.000	-1.061	-8.868	.819	3.421
item35	1.000	5.000	-1.215	-10.150	1.483	6.197
item34	1.000	5.000	-0.859	-7.178	.657	2.744
item32	1.000	5.000	-1.188	-9.930	1.048	4.380
item9	1.000	5.000	-.658	-5.499	.276	1.153
item8	1.000	5.000	-.698	-5.833	.316	1.320
item27	1.000	5.000	-.868	-7.252	.529	2.209
item16	2.000	5.000	-1.191	-9.949	.420	1.753
item17	2.000	5.000	-1.191	-9.949	.420	1.753
item22	1.000	5.000	-1.299	-10.852	1.248	5.213
item21	2.000	5.000	-.930	-7.769	-.057	-.236
item20	2.000	5.000	-1.134	-9.477	.656	2.743
Multivariate					86.162	48.109

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 78



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Number of distinct parameters to be estimated: 42
 Degrees of freedom (78 - 42): 36
 Result (Default model)
 Minimum was achieved
 Chi-square = 58.221
 Degrees of freedom = 36
 Probability level = .011
 Group number 1 (Group number 1 - Default model)
 Estimates (Group number 1 - Default model)
 Scalar Estimates (Group number 1 - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
BAuthen <-- BFunc	.534	.066	8.080	***	par_20
BAttent <-- BFunc	.768	.063	12.116	***	par_10
BAttent <-- BAuthen	.262	.061	4.281	***	par_11
item20 <-- BFunc	1.000				
item21 <-- BFunc	.955	.055	17.498	***	par_1
item22 <-- BFunc	.959	.055	17.358	***	par_2
item17 <-- BFunc	.902	.052	17.268	***	par_3
item16 <-- BFunc	.831	.054	15.302	***	par_4
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	1.260	.118	10.639	***	par_5
item9 <-- BAuthen	1.260	.125	10.056	***	par_6
item32 <-- BAttent	1.000				
item34 <-- BAttent	.811	.074	10.999	***	par_7
item35 <-- BAttent	.956	.060	15.874	***	par_8
item33 <-- BAttent	1.096	.064	17.168	***	par_9

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
BAuthen <-- BFunc	.566
BAttent <-- BFunc	.740
BAttent <-- BAuthen	.238
item20 <-- BFunc	.821
item21 <-- BFunc	.776
item22 <-- BFunc	.774
item17 <-- BFunc	.771
item16 <-- BFunc	.710
item27 <-- BAuthen	.622
item8 <-- BAuthen	.758
item9 <-- BAuthen	.680
item32 <-- BAttent	.796
item34 <-- BAttent	.563
item35 <-- BAttent	.750
item33 <-- BAttent	.805

Covariances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.085	.012	6.834	***	par_12
e22 <--> e16	.021	.010	2.057	.040	par_13
e27 <--> e34	.181	.027	6.755	***	par_14
e9 <--> e34	.095	.030	3.145	.002	par_15
e16 <--> e35	.022	.012	1.756	.079	par_16
e27 <--> e35	.087	.019	4.558	***	par_17
e17 <--> e35	.004	.012	.381	.703	par_18
e21 <--> e27	.045	.016	2.839	.005	par_19
e8 <--> e34	.120	.026	4.601	***	par_21
e20 <--> e34	.044	.014	3.106	.002	par_22
e34 <--> e33	.075	.019	3.914	***	par_23
e22 <--> e9	-.061	.019	-3.154	.002	par_24
e9 <--> e32	-.057	.020	-2.797	.005	par_25
e34 <--> e35	.054	.018	2.973	.003	par_26
e20 <--> e9	-.046	.018	-2.543	.011	par_27

Correlations: (Group number 1 - Default model)

	Estimate
e17 <--> e16	.442
e22 <--> e16	.105
e27 <--> e34	.392
e9 <--> e34	.192
e16 <--> e35	.096
e27 <--> e35	.267
e17 <--> e35	.022
e21 <--> e27	.156
e8 <--> e34	.304
e20 <--> e34	.161
e34 <--> e33	.230
e22 <--> e9	-.193
e9 <--> e32	-.178
e34 <--> e35	.160
e20 <--> e9	-.164

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
res1	.313	.032	9.870	***	par_28
res2	.190	.032	5.970	***	par_29
res3	.066	.013	5.198	***	par_30
e20	.152	.014	10.804	***	par_31
e21	.188	.016	11.899	***	par_32
e22	.193	.016	11.800	***	par_33
e17	.174	.015	11.899	***	par_34
e16	.214	.017	12.408	***	par_35
e27	.443	.037	11.830	***	par_36
e8	.328	.038	8.530	***	par_37
e9	.516	.050	10.381	***	par_38
e32	.195	.018	10.787	***	par_39
e34	.480	.036	13.199	***	par_40
e35	.240	.020	11.881	***	par_41
e33	.220	.021	10.735	***	par_42

Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
BFunc	.000
BAuthen	.320
BAttent	.804
item33	.648
item35	.563
item34	.317
item32	.634
item9	.462
item8	.575
item27	.387
item16	.504
item17	.595
item22	.600
item21	.603
item20	.674

Matrices (Group number 1 - Default model)

Residual Covariances (Group number 1 - Default model)

	item33	item35	item34	item32	item9	item8	item27	item16	item17	item22	item21	item20
item33	.000											
item35	.011	.009										
item34	.010	.015	.013									
item32	.005	.004	.011	.010								
item9	-.062	-.022	-.011	-.054	.005							
item8	.027	.029	.010	-.011	.029	.000						
item27	.024	.031	.017	.016	.034	-.036	.005					
item16	-.016	.004	-.007	.032	-.085	.000	.028	-.001				
item17	.005	.006	.008	.026	-.069	.027	.030	-.001	.000			
item22	-.008	.008	-.009	.025	-.063	-.005	.027	.006	.003	.012		
item21	.000	-.005	.002	.002	-.060	.008	.022	.006	.004	.017	.006	
item20	.009	.005	.011	.016	-.046	.021	.040	.005	.001	.010	.009	.009

Standardized Residual Covariances (Group number 1 - Default model)

	item33	item35	item34	item32	item9	item8	item27	item16	item17	item22	item21	item20
item33	.000											
item35	.335	.242										
item34	.281	.454	.267									
item32	.154	.137	.334	.262								
item9	-1.534	-.601	-.263	-1.494	.072							
item8	.745	.866	.241	-.332	.617	.002						
item27	.694	.913	.434	.498	.770	-.894	.096					
item16	-.573	.139	-.239	1.216	-2.603	-.016	.982	-.035				
item17	.158	.241	.272	.974	-2.100	.927	1.063	-.034	-.004			
item22	-.267	.275	-.312	.902	-1.869	-.154	.905	.213	.122	.365		
item21	.002	-.196	.062	.074	-1.746	.254	.714	.244	.155	.625	.183	
item20	.290	.168	.370	.553	-1.378	.677	1.364	.183	.056	.376	.331	.264

Factor Score Weights (Group number 1 - Default model)

	item33	item35	item34	item32	item9	item8	item27	item16	item17	item22	item21	item20
BFunc	.066	.053	-.020	.075	.050	.004	-.021	.045	.140	.168	.165	.228
BAuthen	.101	.006	-.181	.092	.176	.252	.187	-.009	.000	.052	-.049	.099
BAttent	.195	.162	-.006	.217	.062	.032	-.018	-.001	.058	.079	.065	.099

Total Effects (Group number 1 - Default model)

	BFunc	BAuthen	BAttent
BAuthen	.534	.000	.000
BAttent	.908	.262	.000
item33	.995	.287	1.096
item35	.868	.250	.956
item34	.736	.212	.811
item32	.908	.262	1.000
item9	.673	1.260	.000
item8	.673	1.260	.000
item27	.534	1.000	.000

	BFunct	BAuthen	BAttent
item16	.831	.000	.000
item17	.902	.000	.000
item22	.959	.000	.000
item21	.955	.000	.000
item20	1.000	.000	.000

Standardized Total Effects (Group number 1 - Default model)

	BFunct	BAuthen	BAttent
BAuthen	.566	.000	.000
BAttent	.875	.238	.000
item33	.704	.192	.805
item35	.656	.179	.750
item34	.492	.134	.563
item32	.696	.190	.796
item9	.385	.680	.000
item8	.429	.758	.000
item27	.352	.622	.000
item16	.710	.000	.000
item17	.771	.000	.000
item22	.774	.000	.000
item21	.776	.000	.000
item20	.821	.000	.000

Direct Effects (Group number 1 - Default model)

	BFunct	BAuthen	BAttent
BAuthen	.534	.000	.000
BAttent	.768	.262	.000
item33	.000	.000	1.096
item35	.000	.000	.956
item34	.000	.000	.811
item32	.000	.000	1.000
item9	.000	1.260	.000
item8	.000	1.260	.000
item27	.000	1.000	.000
item16	.831	.000	.000
item17	.902	.000	.000
item22	.959	.000	.000
item21	.955	.000	.000
item20	1.000	.000	.000

Standardized Direct Effects (Group number 1 - Default model)

	BFunct	BAuthen	BAttent
BAuthen	.566	.000	.000
BAttent	.740	.238	.000
item33	.000	.000	.805
item35	.000	.000	.750
item34	.000	.000	.563
item32	.000	.000	.796
item9	.000	.680	.000
item8	.000	.758	.000
item27	.000	.622	.000
item16	.710	.000	.000
item17	.771	.000	.000
item22	.774	.000	.000
item21	.776	.000	.000
item20	.821	.000	.000

Indirect Effects (Group number 1 - Default model)

	BFunct	BAuthen	BAttent
BAuthen	.000	.000	.000
BAttent	.140	.000	.000
item33	.995	.287	.000
item35	.868	.250	.000
item34	.736	.212	.000
item32	.908	.262	.000
item9	.673	.000	.000
item8	.673	.000	.000
item27	.534	.000	.000
item16	.000	.000	.000
item17	.000	.000	.000
item22	.000	.000	.000
item21	.000	.000	.000
item20	.000	.000	.000

Standardized Indirect Effects (Group number 1 - Default model)

	BFunct	BAuthen	BAttent
BAuthen	.000	.000	.000
BAttent	.135	.000	.000
item33	.704	.192	.000
item35	.656	.179	.000
item34	.492	.134	.000

	BFunc	BAuthen	BAttent
item32	.696	.190	.000
item9	.385	.000	.000
item8	.429	.000	.000
item27	.352	.000	.000
item16	.000	.000	.000
item17	.000	.000	.000
item22	.000	.000	.000
item21	.000	.000	.000
item20	.000	.000	.000

Modification Indices (Group number 1 - Default model)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change
e9 <-> res1	9.292	-.070
e9 <-> res2	5.165	.044
e27 <-> e8	8.057	-.061

Variances: (Group number 1 - Default model)

	M.I.	Par Change
--	------	------------

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
item9 <-- BFunc	9.292	-.222
item9 <-- BAttent	6.380	-.179
item9 <-- item33	6.459	-.125
item9 <-- item16	10.716	-.194
item9 <-- item17	11.149	-.198
item9 <-- item22	5.410	-.130
item9 <-- item21	5.922	-.137
item9 <-- item20	5.661	-.135

Minimization History (Default model)

Iteration	Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e 14		-.950	9999.000	2738.211	0	9999.000
1	e 8		-.158	2.088	1210.846	20	.482
2	e* 4		-.137	.497	865.939	6	.803
3	e 1		-.074	.732	391.275	5	.925
4	e 1		-.039	.635	191.563	5	.717
5	e 0	58.476		.699	87.169	6	.806
6	e 0	119.442		.487	63.488	1	.780
7	e 0	125.776		.180	58.630	1	.919
8	e 0	132.716		.030	58.224	1	1.036
9	e 0	135.033		.006	58.221	1	1.009
10	e 0	134.888		.000	58.221	1	1.000

Model Fit Summary

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	42	58.221	36	.011	1.617
Saturated model	78	.000	0		
Independence model	12	2761.345	66	.000	41.839

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.025	.979	.954	.452
Saturated model	.000	1.000		
Independence model	.248	.288	.158	.244

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.979	.961	.992	.985	.992
Saturated model	1.000	1.000	1.000	1.000	1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.545	.534	.541
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	22.221	5.210	47.133
Saturated model	.000	.000	.000
Independence model	2695.345	2527.116	2870.899

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.139	.053	.012	.113
Saturated model	.000	.000	.000	.000
Independence model	6.606	6.448	6.046	6.868

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.038	.019	.056	.851
Independence model	.313	.303	.323	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	142.221	144.917	311.811	353.811
Saturated model	156.000	161.007	470.954	548.954
Independence model	2785.345	2786.115	2833.799	2845.799

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	.340	.300	.400	.347
Saturated model	.373	.373	.373	.385
Independence model	6.664	6.261	7.083	6.665

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	367	421
Independence model	14	15

Execution time summary

Minimization:	.003
Miscellaneous:	.370
Bootstrap:	.000
Total:	.373



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Appendix L

AMOS output for the SME brand equity model of selected manufacturing SME brand (Tofusan)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS second order 3 ba br tofusan.amw

Analysis Summary

Date and Time

Date: Saturday, October 27, 2018

Time: 11:41:50 AM

Title

Amos second order 3 ba br tofusan: Saturday, October 27, 2018 11:41 AM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (Group number 1)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0



	Weights	Covariances	Variances	Means	Intercepts	Total
Unlabeled	23	21	28	0	0	72
Total	56	21	29	0	0	106

Assessment of normality (Group number 1)

Variable	min	max	skew	c.r.	kurtosis	c.r.
P2_6	1.000	5.000	-.182	-1.010	-.345	-.957
P2_5	1.000	5.000	.241	1.333	-.244	-.675
P2_4	1.000	5.000	-.016	-.088	-.547	-1.513
P2_3	1.000	5.000	-.015	-.083	.057	.159
P2_2	1.000	5.000	-.060	-.334	.041	.114
P2_1	1.000	5.000	-.427	-2.364	-.153	-.423
P1_12	1.000	5.000	.117	.647	.072	.200
P1_13	1.000	5.000	.060	.331	-.112	-.311
P1_14	1.000	5.000	.008	.046	-.548	-1.518
P1_15	1.000	5.000	.158	.874	-.307	-.849
P1_16	1.000	5.000	.241	1.332	-.379	-1.050
item33	1.000	5.000	-.015	-.084	-.393	-1.089
item35	1.000	5.000	.231	1.279	-.505	-1.397
item34	1.000	5.000	-.207	-1.145	-.222	-.615
item32	1.000	5.000	.174	.966	-.059	-.165
item9	1.000	5.000	.233	1.292	-.288	-.796
item8	1.000	5.000	.165	.915	-.426	-1.180
item27	1.000	5.000	-.035	-.193	-.343	-.949
item16	1.000	5.000	-.494	-2.735	.019	.051
item17	2.000	5.000	-.113	-.626	-.500	-1.385
item22	1.000	5.000	.184	1.020	-.364	-1.007
item21	1.000	5.000	.162	.896	-.370	-1.023
item20	1.000	5.000	.243	1.344	-.527	-1.458
Multivariate					72.444	14.489

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 276

Number of distinct parameters to be estimated: 72

Degrees of freedom (276 - 72): 204

Result (Default model)

Minimum was achieved

Chi-square = 210.241

Degrees of freedom = 204

Probability level = .367

Group number 1 (Group number 1 - Default model)

Estimates (Group number 1 - Default model)

Scalar Estimates (Group number 1 - Default model)

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.449	.057	7.824	***	par_9
BAuthen <-- SMEBE	.438	.064	6.879	***	par_10
BFunc <-- SMEBE	.490	.059	8.297	***	par_11
BReso <-- SMEBE	.472	.061	7.710	***	par_21
BAware <-- SMEBE	.579	.066	8.833	***	par_23
item20 <-- BFunc	1.000				
item21 <-- BFunc	1.210	.135	8.928	***	par_1
item22 <-- BFunc	1.296	.137	9.461	***	par_2
item17 <-- BFunc	.550	.103	5.339	***	par_3
item16 <-- BFunc	.461	.116	3.957	***	par_4
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	1.523	.210	7.265	***	par_5
item32 <-- BAttent	1.000				
item34 <-- BAttent	.867	.123	7.036	***	par_6
item35 <-- BAttent	.899	.127	7.104	***	par_7
item33 <-- BAttent	1.160	.132	8.757	***	par_8
item9 <-- BAuthen	1.377	.195	7.058	***	par_12
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	1.013	.075	13.515	***	par_13
P1_14 <-- BAware	1.051	.082	12.775	***	par_14
P1_13 <-- BAware	.760	.077	9.850	***	par_15
P1_12 <-- BAware	.700	.078	8.925	***	par_16
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	1.141	.101	11.249	***	par_17
P2_3 <-- BReso	1.282	.146	8.777	***	par_18
P2_4 <-- BReso	1.293	.152	8.507	***	par_19
P2_5 <-- BReso	1.150	.146	7.873	***	par_20
P2_6 <-- BReso	.926	.144	6.418	***	par_22

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
BAttent <-- SMEBE	.754
BAuthen <-- SMEBE	.851
BFunc <-- SMEBE	.809

	Estimate
BReso <-- SMEBE	.818
BAware <-- SMEBE	.719
item20 <-- BFunc	.699
item21 <-- BFunc	.756
item22 <-- BFunc	.826
item17 <-- BFunc	.412
item16 <-- BFunc	.318
item27 <-- BAuthen	.555
item8 <-- BAuthen	.820
item32 <-- BAttent	.720
item34 <-- BAttent	.594
item35 <-- BAttent	.605
item33 <-- BAttent	.787
item9 <-- BAuthen	.758
P1_16 <-- BAware	.835
P1_15 <-- BAware	.855
P1_14 <-- BAware	.813
P1_13 <-- BAware	.684
P1_12 <-- BAware	.620
P2_1 <-- BReso	.628
P2_2 <-- BReso	.728
P2_3 <-- BReso	.847
P2_4 <-- BReso	.785
P2_5 <-- BReso	.710
P2_6 <-- BReso	.564

Covariances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.413	.055	7.494	***	par_24
e2_1 <--> e2_2	.217	.042	5.171	***	par_25
e34 <--> e35	.147	.044	3.353	***	par_26
e1_13 <--> e1_12	.134	.037	3.627	***	par_27
e1_14 <--> e1_13	.087	.034	2.570	.010	par_28
e1_14 <--> e2_6	.104	.036	2.921	.003	par_29
e27 <--> e1_15	-.092	.034	-2.672	.008	par_30
e27 <--> e34	.116	.040	2.922	.003	par_31
e2_5 <--> e2_6	.140	.039	3.623	***	par_32
e2_4 <--> e2_5	.144	.036	3.993	***	par_33
e2_3 <--> e2_6	-.086	.033	-2.599	.009	par_34
e20 <--> e2_5	.072	.028	2.558	.011	par_35
e34 <--> e2_5	.075	.028	2.677	.007	par_36
e16 <--> e2_6	.086	.034	2.512	.012	par_37
e34 <--> e1_14	-.095	.031	-3.037	.002	par_38
e32 <--> e1_14	-.074	.030	-2.477	.013	par_39
e9 <--> e2_1	.074	.032	2.301	.021	par_40
e1_16 <--> e2_3	-.020	.025	-.793	.428	par_41
e1_12 <--> e2_4	.075	.030	2.520	.012	par_42
e1_12 <--> e2_2	.072	.029	2.497	.013	par_43
e20 <--> e17	.059	.028	2.120	.034	par_44

Correlations: (Group number 1 - Default model)

	Estimate
e17 <--> e16	.674
e2_1 <--> e2_2	.490
e34 <--> e35	.298
e1_13 <--> e1_12	.287
e1_14 <--> e1_13	.219
e1_14 <--> e2_6	.219
e27 <--> e1_15	-.241
e27 <--> e34	.215
e2_5 <--> e2_6	.273
e2_4 <--> e2_5	.373
e2_3 <--> e2_6	-.239
e20 <--> e2_5	.176
e34 <--> e2_5	.163
e16 <--> e2_6	.132
e34 <--> e1_14	-.224
e32 <--> e1_14	-.212
e9 <--> e2_1	.170
e1_16 <--> e2_3	-.081
e1_12 <--> e2_4	.179
e1_12 <--> e2_2	.162
e20 <--> e17	.128

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.073	.026	2.819	.005	par_45
res4	.153	.038	4.020	***	par_46
res2	.127	.034	3.770	***	par_47

	P 2 6	P 2 5	P 2 4	P 2 3	P 2 2	P 2 1	P 1 2	P 1 1	P 1 4	P 1 5	P 1 6	ite m 3 3	ite m 3 5	ite m 3 4	ite m 3 2	ite m 9	ite m 8	ite m 2 7	ite m 1 6	ite m 1 7	ite m 2 2	ite m 2 1	ite m 2 0	
e m 2 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	6	1	8	5	4	1	3	0	6	9	3	8	0	4	2	1	4	2	9	4	3	8	0	
1	2	8	1	3	2	1	5	4	1	5	4	5	-	-	-	7	-	7	7	5	-	-	-	
ite m 2 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	9	5	4	2	5	7	8	6	5	1	2	3	1	5	6	0	9	4	5	6	2	5	8	

Standardized Residual Covariances (Group number 1 - Default model)

	P 2 6	P 2 5	P 2 4	P 2 3	P 2 2	P 2 1	P 1 2	P 1 1	P 1 4	P 1 5	P 1 6	ite m 3 3	ite m 3 5	ite m 3 4	ite m 3 2	ite m 9	ite m 8	ite m 2 7	ite m 1 6	ite m 1 7	ite m 2 2	ite m 2 1	ite m 2 0	
P 2 6	-	.001	.048	.032	.042	.015	.035	.055	.030	.070	.009	.072	.051	.039	.036	.030	.020	.006	.015	.008	.011	.012	.011	.010
P 2 5		-	.086	.026	.067	.017	.058	.088	.061	.099	.038	.087	.068	.052	.045	.037	.025	.009	.022	.013	.016	.017	.016	.015
P 2 4			-	.020	.070	.010	.068	.100	.077	.102	.047	.094	.073	.056	.049	.041	.028	.011	.027	.016	.020	.021	.020	.019
P 2 3				-	.014	.038	.084	.128	.099	.124	.053	.101	.079	.062	.055	.047	.032	.013	.032	.020	.024	.025	.024	.023
P 2 2					-	.008	.028	.080	.120	.089	.060	.105	.083	.066	.059	.051	.035	.015	.035	.023	.027	.028	.027	.026
P 2 1						-	.008	.028	.080	.120	.089	.060	.105	.083	.066	.059	.043	.018	.038	.026	.030	.031	.030	.029
P 1 2							-	.088	.128	.089	.060	.105	.083	.066	.059	.051	.035	.015	.035	.023	.027	.028	.027	.026
P 1 4								-	.077	.102	.053	.101	.079	.062	.055	.047	.032	.013	.032	.020	.024	.025	.024	.023
P 1 5									-	.099	.060	.105	.083	.066	.059	.051	.035	.015	.035	.023	.027	.028	.027	.026
P 1 6										-	.030	.070	.051	.039	.036	.030	.020	.009	.022	.013	.016	.017	.016	.015
ite m 3 3											-	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ite m 3 5												-	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ite m 3 4													-	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ite m 3 2														-	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
ite m 9															-	.000	.000	.000	.000	.000	.000	.000	.000	.000
ite m 8																-	.000	.000	.000	.000	.000	.000	.000	.000
ite m 2 7																	-	.000	.000	.000	.000	.000	.000	.000
ite m 1 6																		-	.000	.000	.000	.000	.000	.000
ite m 1 7																			-	.000	.000	.000	.000	.000
ite m 2 2																				-	.000	.000	.000	.000
ite m 2 1																					-	.000	.000	.000
ite m 2 0																						-	.000	.000



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	P 2 6	P 2 5	P 2 4	P 2 3	P 2 2	P 2 1	P 1 2	P 1 3	P 1 4	P 1 5	P 1 6	it e m 3 3	it e m 3 5	it e m 3 4	it e m 3 2	it e m 9	it e m 8	it e m 2 7	it e m 1 6	it e m 1 7	it e m 2 2	it e m 2 1	it e m 2 0	
it e m 3 2	.74	.18	.22	.67	.91	.25	.02	.38	.70	.08	.37	.15	.05	.21	.01									
it e m 9	.67	.04	.22	.78	.20	.00	.83	.37	.91	.01	.11	.23	.50	.05	.07									
it e m 8	.99	.11	.68	.94	.33	.45	.70	.22	.22	.99	.22	.51	.00	.39	.41									
it e m 2 7	.34	.79	.30	.23	.33	.70	.08	.33	.66	.94	.43	.06	.33	.99	.84									
it e m 1 6	.15	.32	.21	.16	.53	.72	.00	.24	.00	.43	.88	.11	.19	.63	.47									
it e m 1 7	.90	.80	.01	.64	.12	.07	.40	.09	.77	.71	.48	.55	.09	.08	.35									
it e m 2 2	.46	.52	.64	.47	.51	.08	.50	.66	.51	.99	.59	.32	.92	.19	.09									
it e m 2 1	.85	.27	.39	.75	.61	.44	.91	.27	.48	.88	.06	.66	.11	.77	.59									
it e m 2 0	.14	.58	.60	.35	.11	.63	.00	.93	.42	.34	.20	.43	.46	.00	.29									

Factor Score Weights (Group number 1 - Default model)

	P 2 6	P 2 5	P 2 4	P 2 3	P 2 2	P 2 1	P 1 2	P 1 3	P 1 4	P 1 5	P 1 6	it e m 3 3	it e m 3 5	it e m 3 4	it e m 3 2	it e m 9	it e m 8	it e m 2 7	it e m 1 6	it e m 1 7	it e m 2 2	it e m 2 1	it e m 2 0	
S M E B E	.04	.00	.08	.67	.00	.00	.00	.22	.05	.09	.06	.10	.03	.03	.09	.11	.06	.06	.00	.02	.03	.08	.07	.03
B R e s o	.09	.02	.36	.10	.02	.03	.02	.21	.02	.23	.09	.11	.00	.05	.00	.03	.05	.03	.00	.02	.02	.01	.04	.05
B A w a r e	.02	.01	.00	.03	.00	.01	.07	.05	.09	.08	.07	.00	.00	.02	.04	.00	.01	.04	.00	.00	.00	.01	.01	.00
B A t t e n t	.00	.01	.02	.02	.01	.00	.00	.01	.06	.00	.09	.00	.05	.08	.00	.02	.03	.01	.00	.00	.02	.02	.05	.06
B A u t h e n	.01	.00	.01	.03	.03	.02	.00	.05	.03	.08	.00	.01	.02	.05	.01	.00	.02	.08	.00	.00	.02	.08	.05	.05
B F u n c t	.01	.02	.03	.03	.01	.00	.00	.01	.01	.07	.01	.01	.00	.01	.01	.02	.03	.01	.02	.02	.02	.04	.06	.04

Modification Indices (Group number 1 - Default model)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change
res1 <--> res5	4.528	.046
e2_5 <--> res1	4.659	.060
e1_15 <--> res5	4.894	.041
e27 <--> res3	4.561	-.049

Variances: (Group number 1 - Default model)

	M.I.	Par Change

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
P2_5 <--> P1_13	5.082	.104
P1_12 <--> item33	4.640	.122
P1_12 <--> item35	5.498	.132
P1_12 <--> item16	4.322	.118

Minimization History (Default model)

Iteration		Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e	19		-1.028	9999.000	2392.834	0	9999.000
1	e	13		-.260	2.436	1341.442	21	.552
2	e*	8		-.255	.657	1070.035	6	.760
3	e*	4		-.089	.940	753.766	5	.767
4	e	1		-.008	1.229	430.086	5	.881
5	e	0	80.339	.648	289.261	4	.944	
6	e	0	73.476	.547	238.637	2	.000	
7	e	0	114.656	.547	213.311	1	1.142	
8	e	0	176.074	.275	210.423	1	1.119	
9	e	0	208.674	.091	210.243	1	1.061	
10	e	0	221.646	.012	210.241	1	1.010	
11	e	0	218.249	.000	210.241	1	1.000	

Pairwise Parameter Comparisons (Default model)

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	72	210.241	204	.367	1.031
Saturated model	276	.000	0		
Independence model	23	2396.408	253	.000	9.472

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.046	.912	.881	.674
Saturated model	.000	1.000		
Independence model	.306	.245	.176	.224

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.912	.891	.997	.996	.997
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.806	.736	.804
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	6.241	.000	44.738
Saturated model	.000	.000	.000
Independence model	2143.408	1990.317	2303.889

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.149	.034	.000	.244
Saturated model	.000	.000	.000	.000
Independence model	13.095	11.713	10.876	12.590

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.013	.000	.035	1.000
Independence model	.215	.207	.223	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	354.241	375.977	585.716	657.716
Saturated model	552.000	635.321	1439.322	1715.322
Independence model	2442.408	2449.351	2516.351	2539.351

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.936	1.902	2.146	2.055
Saturated model	3.016	3.016	3.016	3.472
Independence model	13.346	12.510	14.223	13.384

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	208	222

Model	HOELTER	HOELTER
Independence model	.23	.24

Execution time summary

Minimization: .032

Miscellaneous: .569

Bootstrap: .000

Total: .601



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Appendix M

AMOS output for the SME brand equity model of selected service SME brand (Santa fe´)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS second order 3 ba br Santa fe´.amw

Analysis Summary

Date and Time

Date: Tuesday, October 16, 2018

Time: 6:10:39 PM

Title

Amos second order 3 ba br Santa fe´: Tuesday, October 16, 2018 6:10 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (Group number 1)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0



	Weights	Covariances	Variances	Means	Intercepts	Total
Unlabeled	23	31	28	0	0	82
Total	56	31	29	0	0	116

Assessment of normality (Group number 1)

Variable	min	max	skew	c.r.	kurtosis	c.r.
P2_6	1.000	5.000	-.368	-2.038	.280	.774
P2_5	1.000	5.000	-.482	-2.669	.181	.501
P2_4	1.000	5.000	-.326	-1.804	-.082	-.226
P2_3	1.000	5.000	-.271	-1.498	-.006	-.016
P2_2	1.000	5.000	-.576	-3.188	.761	2.108
P2_1	1.000	5.000	-.400	-2.216	.676	1.873
P1_12	1.000	5.000	-.073	-.404	.101	.280
P1_13	1.000	5.000	-.536	-2.971	.745	2.063
P1_14	1.000	5.000	-.388	-2.149	.406	1.125
P1_15	1.000	5.000	-.415	-2.299	-.035	-.098
P1_16	1.000	5.000	-.397	-2.201	-.097	-.270
item33	1.000	5.000	-.452	-2.505	.386	1.069
item35	1.000	5.000	-.388	-2.149	.151	.418
item34	1.000	6.000	-.358	-1.984	.213	.591
item32	1.000	5.000	-.492	-2.723	.874	2.420
item9	1.000	5.000	-.425	-2.353	.463	1.282
item8	1.000	5.000	-.166	-.918	.258	.714
item27	1.000	5.000	-.488	-2.702	.040	.111
item16	1.000	5.000	-.516	-2.857	.886	2.454
item17	1.000	5.000	-.609	-3.373	1.085	3.004
item22	1.000	5.000	-.505	-2.796	.445	1.232
item21	1.000	5.000	-.450	-2.490	.336	.931
item20	1.000	5.000	-.203	-1.122	-.029	-.080
Multivariate					86.485	17.297

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 276

Number of distinct parameters to be estimated: 82

Degrees of freedom (276 - 82): 194

Result (Default model)

Minimum was achieved

Chi-square = 219.594

Degrees of freedom = 194

Probability level = .100

Group number 1 (Group number 1 - Default model)

Estimates (Group number 1 - Default model)

Scalar Estimates (Group number 1 - Default model)

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.501	.048	10.433	***	par_9
BAuthen <-- SMEBE	.643	.057	11.270	***	par_10
BFunct <-- SMEBE	.642	.051	12.568	***	par_11
BReso <-- SMEBE	.561	.049	11.513	***	par_21
BAware <-- SMEBE	.633	.058	10.934	***	par_23
item20 <-- BFunc	1.000				
item21 <-- BFunc	1.008	.074	13.584	***	par_1
item22 <-- BFunc	.992	.078	12.710	***	par_2
item17 <-- BFunc	.814	.079	10.367	***	par_3
item16 <-- BFunc	.709	.077	9.189	***	par_4
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	.895	.087	10.331	***	par_5
item32 <-- BAttent	1.000				
item34 <-- BAttent	1.108	.115	9.608	***	par_6
item35 <-- BAttent	1.125	.116	9.674	***	par_7
item33 <-- BAttent	1.042	.115	9.069	***	par_8
item9 <-- BAuthen	.969	.091	10.700	***	par_12
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	1.009	.071	14.232	***	par_13
P1_14 <-- BAware	.914	.070	13.095	***	par_14
P1_13 <-- BAware	.998	.069	14.433	***	par_15
P1_12 <-- BAware	.911	.073	12.425	***	par_16
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	1.106	.098	11.250	***	par_17
P2_3 <-- BReso	1.141	.096	11.870	***	par_18
P2_4 <-- BReso	1.206	.106	11.364	***	par_19
P2_5 <-- BReso	1.202	.106	11.298	***	par_20
P2_6 <-- BReso	1.110	.096	11.542	***	par_22

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
BAttent <-- SMEBE	.941
BAuthen <-- SMEBE	.982
BFunct <-- SMEBE	.954

	Estimate
BReso <-- SMEBE	.948
BAware <-- SMEBE	.852
item20 <-- BFunc	.821
item21 <-- BFunc	.842
item22 <-- BFunc	.805
item17 <-- BFunc	.695
item16 <-- BFunc	.629
item27 <-- BAuthen	.742
item8 <-- BAuthen	.755
item32 <-- BAttent	.728
item34 <-- BAttent	.745
item35 <-- BAttent	.747
item33 <-- BAttent	.694
item9 <-- BAuthen	.780
P1_16 <-- BAware	.812
P1_15 <-- BAware	.798
P1_14 <-- BAware	.828
P1_13 <-- BAware	.890
P1_12 <-- BAware	.799
P2_1 <-- BReso	.772
P2_2 <-- BReso	.779
P2_3 <-- BReso	.818
P2_4 <-- BReso	.791
P2_5 <-- BReso	.785
P2_6 <-- BReso	.739

Covariances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.185	.028	6.531	***	par_24
e9 <--> e2_2	.070	.022	3.153	.002	par_25
e1_15 <--> e2_6	-.088	.022	-4.109	***	par_26
e16 <--> e1_16	-.056	.019	-2.956	.003	par_27
e1_15 <--> e1_14	.092	.023	4.028	***	par_28
e1_15 <--> e2_3	-.059	.018	-3.212	.001	par_29
e8 <--> e2_1	.032	.019	1.684	.092	par_30
e2_5 <--> e2_6	.103	.027	3.865	***	par_31
e2_4 <--> e2_5	.077	.024	3.154	.002	par_32
e33 <--> e2_2	.075	.024	3.083	.002	par_33
e17 <--> e2_5	-.063	.018	-3.455	***	par_34
e2_4 <--> e2_3	.055	.023	2.370	.018	par_35
e34 <--> e35	.058	.027	2.157	.031	par_36
e22 <--> e2_2	-.054	.020	-2.640	.008	par_37
e1_16 <--> e1_15	.069	.023	3.035	.002	par_38
e9 <--> e1_13	-.053	.017	-3.123	.002	par_39
e16 <--> e8	.055	.018	3.044	.002	par_40
e1_13 <--> e2_1	.051	.017	3.010	.003	par_41
e32 <--> e2_6	.048	.022	2.213	.027	par_42
e1_16 <--> e2_1	.047	.019	2.440	.015	par_43
e17 <--> e2_3	-.046	.017	-2.753	.006	par_44
e16 <--> e32	.053	.018	2.942	.003	par_45
e35 <--> e1_16	.016	.021	.732	.464	par_46
e2_1 <--> e2_6	.047	.021	2.254	.024	par_47
e20 <--> e1_12	-.064	.021	-2.988	.003	par_48
e20 <--> e34	-.054	.020	-2.679	.007	par_49
e17 <--> e34	-.052	.019	-2.829	.005	par_50
e16 <--> e35	.049	.019	2.557	.011	par_51
e22 <--> e1_16	.051	.020	2.491	.013	par_52
e20 <--> e1_13	-.044	.017	-2.604	.009	par_53
e17 <--> e1_13	-.035	.015	-2.321	.020	par_54

Correlations: (Group number 1 - Default model)

	Estimate
e17 <--> e16	.552
e9 <--> e2_2	.261
e1_15 <--> e2_6	-.262
e16 <--> e1_16	-.177
e1_15 <--> e1_14	.354
e1_15 <--> e2_3	-.219
e8 <--> e2_1	.130
e2_5 <--> e2_6	.306
e2_4 <--> e2_5	.249
e33 <--> e2_2	.247
e17 <--> e2_5	-.199
e2_4 <--> e2_3	.208
e34 <--> e35	.207
e22 <--> e2_2	-.207
e1_16 <--> e1_15	.227
e9 <--> e1_13	-.276
e16 <--> e8	.184

	Estimate
e1_13 <--> e2_1	.276
e32 <--> e2_6	.159
e1_16 <--> e2_1	.181
e17 <--> e2_3	-.170
e16 <--> e32	.179
e35 <--> e1_16	.055
e2_1 <--> e2_6	.162
e20 <--> e1_12	-.267
e20 <--> e34	-.218
e17 <--> e34	-.174
e16 <--> e35	.157
e22 <--> e1_16	.192
e20 <--> e1_13	-.246
e17 <--> e1_13	-.160

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.015	.017	.897	.370	par_55
res4	.033	.014	2.365	.018	par_56
res2	.041	.016	2.602	.009	par_57
res1	.152	.029	5.316	***	par_58
res5	.035	.011	3.108	.002	par_59
e20	.220	.028	7.930	***	par_60
e21	.189	.024	7.819	***	par_61
e22	.243	.029	8.252	***	par_62
e17	.323	.036	9.066	***	par_63
e16	.348	.037	9.528	***	par_64
e27	.351	.041	8.506	***	par_65
e8	.259	.031	8.358	***	par_66
e9	.260	.032	8.083	***	par_67
e32	.252	.030	8.303	***	par_68
e34	.280	.036	7.834	***	par_69
e35	.284	.036	7.840	***	par_70
e33	.332	.039	8.606	***	par_71
e1_16	.286	.035	8.224	***	par_72
e1_15	.320	.038	8.482	***	par_73
e1_14	.212	.026	8.019	***	par_74
e1_13	.144	.022	6.436	***	par_75
e1_12	.260	.031	8.281	***	par_76
e2_1	.237	.028	8.487	***	par_77
e2_2	.278	.033	8.480	***	par_78
e2_4	.305	.037	8.141	***	par_79
e2_5	.315	.037	8.427	***	par_80
e2_3	.225	.029	7.861	***	par_81
e2_6	.357	.041	8.749	***	par_82

Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
BReso	.899
BAware	.725
BAttent	.885
BAuthen	.965
BFunc	.909
P2_6	.547
P2_5	.616
P2_4	.626
P2_3	.669
P2_2	.607
P2_1	.596
P1_12	.638
P1_13	.793
P1_14	.685
P1_15	.637
P1_16	.659
item33	.482
item35	.558
item34	.554
item32	.529
item9	.608
item8	.571
item27	.550
item16	.396
item17	.482
item22	.648
item21	.709
item20	.674

Matrices (Group number 1 - Default model)

Residual Covariances (Group number 1 - Default model)

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	P 2 - 6	P 2 - 5	P 2 - 4	P 2 - 3	P 2 - 2	P 2 - 1	P 1 - 2	P 1 - 3	P 1 - 4	P 1 - 5	P 1 - 6	it em 3 3	it em 3 5	it em 3 4	it em 3 2	it em 9	it em 8	it em 2 7	it em 1 6	it em 1 7	it em 2 2	it em 2 1	it em 2 0	
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P 2 - 5	-	0 0 9																						
P 2 - 4	-	0 0 5	0 0 3																					
P 2 - 3	-	0 0 8	0 2 3	0 0 2																				
P 2 - 2	0 3 2	0 2 3	0 2 0	0 2 6	0 0 1																			
P 2 - 1	0 0 5	0 3 0	0 3 7	0 0 7	0 1 1	0 0 2																		
P 1 - 2	0 0 0	0 2 8	0 8 7	0 6 7	0 2 5	0 4 2	0 0 9																	
P 1 - 3	0 0 5	0 1 3	0 4 4	0 4 1	0 9 1	0 1 1	0 1 2	0 0 8																
P 1 - 4	0 1 7	0 0 1	0 5 7	0 2 8	0 6 0	0 3 9	0 1 8	0 1 0	0 0 9															
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	P 2 6	P 2 5	P 2 4	P 2 3	P 2 2	P 2 1	P 1 2	P 1 1	P 1 1	P 1 1	P 1 1	P 1 1	P 1 1	P 1 1	P 1 1	ite m 3 3	ite m 3 5	ite m 3 4	ite m 3 2	ite m 9	ite m 8	ite m 2 7	ite m 1 6	ite m 1 7	ite m 2 2	ite m 2 1	ite m 2 0			
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ite m 3 2	. 0 7 4	. 4 9 7	. 4 3 9	. 4 1 5	. 4 0	. 3 9	. 7 5	. 1 2	. 0 7	. 6 4	. 5 2	. 8 7	. 6 4	. 5 2	. 8 7	8 7 4	8 7 4	8 7 4	8 7 4	8 7 4	8 7 4	8 7 4	8 7 4	8 7 4	8 7 4	8 7 4	8 7 4	8 7 4	8 7 4	8 7 4
ite m 9	. 3 3 8	. 4 7 7	. 3 3 0	. 3 6 9	. 4 7 2	. 7 2	. 0 0	. 3 5	. 7 6	. 7 4	. 6 3	. 1 0	. 3 0	. 7 0	. 6 3	3 2 9	3 2 9	3 2 9	3 2 9	3 2 9	3 2 9	3 2 9	3 2 9	3 2 9	3 2 9	3 2 9	3 2 9	3 2 9	3 2 9	3 2 9
ite m 8	. 4 7 7	. 5 9 9	. 4 4 0	. 5 6 1	. 6 3 2	. 5 2	. 2 1	. 5 6	. 6 0	. 2 0	. 5 0	. 6 8	. 2 0	. 5 0	. 6 8	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2
ite m 2 7	. 6 1 3	. 3 2 6	. 6 8	. 0 6	. 1 3	. 6 6	. 0 0	. 6 1	. 6 7	. 9 7	. 8 8	. 1 8	. 2 5	. 7 1	. 0 3	2 7 1	2 7 1	2 7 1	2 7 1	2 7 1	2 7 1	2 7 1	2 7 1	2 7 1	2 7 1	2 7 1	2 7 1	2 7 1	2 7 1	2 7 1
ite m 1 6	. 1 4 4	. 9 8 6	. 0 2 2	. 2 5 2	. 0 7 1	. 2 5 8	. 2 1 5	. 1 7 3	. 0 2 3	. 2 0 3	. 0 9 3	. 2 0 3	. 0 9 3	. 2 0 3	. 0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3	0 9 3
ite m 1 7	. 0 3 5	. 4 1 8	. 6 3 4	. 2 0 5	. 0 4 4	. 7 3 4	. 0 4 5	. 1 2 9	. 5 2 4	. 3 2 1	. 0 3 4	. 1 2 9	. 5 2 4	. 3 2 1	. 0 3 4	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9	1 2 9
ite m 2 2	. 6 9 7	. 2 9 0	. 3 8 5	. 2 8 8	. 3 3 3	. 4 5 1	. 4 7 7	. 5 1 1	. 2 7 1	. 6 5 8	. 2 7 1	. 6 5 8	. 2 7 1	. 6 5 8	. 2 7 1	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2	4 3 2
ite m 2 1	. 0 1 7	. 2 2 0	. 0 6 4	. 2 9 1	. 5 2 2	. 4 9 9	. 1 5 7	. 2 5 5	. 4 5 7	. 0 5 7	. 2 5 5	. 4 5 7	. 0 5 7	. 2 5 5	. 4 5 7	0 5 7	0 5 7	0 5 7	0 5 7	0 5 7	0 5 7	0 5 7	0 5 7	0 5 7	0 5 7	0 5 7	0 5 7	0 5 7	0 5 7	0 5 7
ite m 2 0	. 1 9 0	. 4 0 1	. 1 6 7	. 1 4 1	. 0 5 5	. 1 9 4	. 0 6 9	. 1 2 4	. 2 4 2	. 3 6 3	. 1 4 2	. 3 6 3	. 1 4 2	. 3 6 3	. 1 4 2	0 7 7	0 7 7	0 7 7	0 7 7	0 7 7	0 7 7	0 7 7	0 7 7	0 7 7	0 7 7	0 7 7	0 7 7	0 7 7	0 7 7	0 7 7

Factor Score Weights (Group number 1 - Default model)

	P 2 6	P 2 5	P 2 4	P 2 3	P 2 2	P 2 1	P 1 2	P 1 1	P 1 1	P 1 1	P 1 1	P 1 1	P 1 1	P 1 1	P 1 1	ite m 3 3	ite m 3 5	ite m 3 4	ite m 3 2	ite m 9	ite m 8	ite m 2 7	ite m 1 6	ite m 1 7	ite m 2 2	ite m 2 1	ite m 2 0	
S M E B E	. 0 2 7	. 0 8 3	. 0 2 1	. 1 2 7	. 0 3 9	. 0 2 5	. 0 4 9	. 1 5 0	. 0 5 8	. 0 4 3	. 0 5 4	. 0 4 4	. 0 5 2	. 0 4 4	. 0 5 2	0 4 2	0 6 1	0 2 2	0 8 0	0 9 9	0 1 9	0 2 3	0 1 8	0 1 1	0 8 3	0 7 1	0 9 3	0 5 1
B R e s o	. 0 2 2	. 0 8 1	. 0 4 9	. 1 4 5	. 0 8 4	. 0 2 9	. 0 2 0	. 0 2 6	. 0 2 6	. 0 0 3	. 0 6 3	. 0 0 2	. 0 6 7	. 0 0 2	. 0 6 7	0 5 7	0 2 5	0 4 1	0 2 4	0 1 3	0 3 4	0 2 7	0 0 4	0 0 7	0 0 2	0 9 1	0 5 0	0 4 1
B A w	. 0 3	. 0 1	. 0 0	. 0 4	. 0 0	. 1 4	. 3 5	. 1 2	. 0 6	. 1 2	. 0 6	. 1 2	. 0 6	. 1 2	. 0 6	0 0 3	0 0 3	0 0 4	0 0 2	0 0 8	0 0 1	0 0 0	0 0 0	0 0 5	0 0 0	0 0 5	0 0 0	0 0 1

	P 2 6	P 2 5	P 2 4	P 2 3	P 2 2	P 2 1	P 1 2	P 1 1	P 1 1	P 1 1	P 1 1	it e m 3 3	it e m 3 5	it e m 3 4	it e m 3 2	it e m 9	it e m 8	it e m 2 7	it e m 1 6	it e m 1 7	it e m 2 2	it e m 2 1	it e m 2 0
ar	5	0	1	1	1	9	9	1	1	4	6	6	1	7	0	0	8	2	1	4	3	1	3
e	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0
tt	1	4	0	5	0	1	1	6	0	1	3	8	9	1	2	4	4	2	9	0	2	2	6
e	0	5	0	3	9	0	9	5	5	7	1	4	7	6	5	8	8	4	3	7	4	5	8
nt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	-	1	0	0	0
ut	1	5	1	7	0	0	2	0	0	3	3	2	3	6	4	2	1	8	0	0	4	5	8
h	6	0	2	5	8	5	4	3	0	0	0	5	5	4	6	8	6	3	3	8	7	1	7
e	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
n	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
B	0	4	0	5	3	0	3	8	1	4	0	0	0	7	2	4	3	2	2	2	3	5	8
F	3	2	2	4	1	2	8	8	6	8	1	8	9	5	3	5	8	7	4	5	5	7	0
un	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1

Modification Indices (Group number 1 - Default model)
Covariances: (Group number 1 - Default model)

	M.I.	Par Change
e2_4 <-> res1	7.893	.052
e2_2 <-> res1	11.915	-.062

Variances: (Group number 1 - Default model)

	M.I.	Par Change
--	------	------------

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
P2_2 <--- P1_13	5.199	-.103
P2_2 <--- P1_16	4.221	-.085
P2_1 <--- item16	5.227	.106
P1_12 <--- item16	4.278	.108

Minimization History (Default model)

Iteration		Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e	31		-1.450	9999.000	3418.359	0	9999.000
1	e*	28		-.611	3.015	2120.889	21	.376
2	e*	15		-.278	.766	1681.487	6	.818
3	e	11		-.206	.462	1401.405	4	.918
4	e*	5		-.206	1.149	903.566	6	.928
5	e*	1		-.327	1.278	460.396	5	.924
6	e*	0	92.708		.647	302.984	4	.764
7	e	0	78.267		.464	242.829	2	.000
8	e	0	110.947		.388	220.536	1	1.099
9	e	0	132.164		.114	219.601	1	1.050
10	e	0	136.654		.012	219.594	1	1.007
11	e	0	136.363		.000	219.594	1	1.000

Model Fit Summary

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	82	219.594	194	.100	1.132
Saturated model	276	.000	0		
Independence model	23	3467.780	253	.000	13.707

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.026	.910	.872	.640
Saturated model	.000	1.000		
Independence model	.361	.134	.056	.123

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.937	.917	.992	.990	.992
Saturated model	1.000	1.000	1.000	1.000	1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.767	.718	.761
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	25.594	.000	66.209
Saturated model	.000	.000	.000
Independence model	3214.780	3028.211	3408.670

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.200	.140	.000	.362
Saturated model	.000	.000	.000	.000

Model	FMIN	F0	LO 90	HI 90
Independence model	18.950	17.567	16.548	18.627

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.027	.000	.043	.993
Independence model	.264	.256	.271	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	383.594	408.348	647.218	729.218
Saturated model	552.000	635.321	1439.322	1715.322
Independence model	3513.780	3520.723	3587.723	3610.723

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.096	1.956	2.318	2.231
Saturated model	3.016	3.016	3.016	3.472
Independence model	19.201	18.181	20.260	19.239

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	190	203
Independence model	16	17

Execution time summary

Minimization:	.015
Miscellaneous:	.587
Bootstrap:	.000
Total:	.602



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Appendix N

AMOS output for the SME brand equity model of selected trade SME brand (Eveandboy)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS second order 3 ba br eveandboy.amw

Analysis Summary

Date and Time

Date: Tuesday, October 16, 2018

Time: 4:29:03 PM

Title

Amos second order 3 ba br eveandboy: Tuesday, October 16, 2018 4:29 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (Group number 1)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0



	Weights	Covariances	Variances	Means	Intercepts	Total
Unlabeled	23	23	28	0	0	74
Total	56	23	29	0	0	108

Assessment of normality (Group number 1)

Variable	min	max	skew	c.r.	kurtosis	c.r.
P2_6	1.000	5.000	-.254	-1.406	-.195	-.540
P2_5	1.000	5.000	-.078	-.434	-.202	-.559
P2_4	1.000	5.000	-.217	-1.203	-.292	-.808
P2_3	1.000	5.000	.050	.276	.057	.157
P2_2	1.000	5.000	-.310	-1.717	.653	1.809
P2_1	1.000	5.000	-.237	-1.315	.120	.332
P1_12	1.000	5.000	-.227	-1.257	.118	.325
P1_13	1.000	5.000	-.017	-.093	-.324	-.896
P1_14	1.000	5.000	.008	.046	-.398	-1.101
P1_15	1.000	5.000	-.106	-.587	-.475	-1.316
P1_16	1.000	5.000	-.038	-.213	-.453	-1.254
item33	1.000	5.000	-.945	-5.232	1.830	5.068
item35	1.000	5.000	-.182	-1.009	.466	1.290
item34	1.000	5.000	-.126	-.697	.508	1.407
item32	1.000	5.000	-.140	-.776	-.616	-1.706
item9	1.000	5.000	-.351	-1.942	-.171	-.472
item8	1.000	5.000	-.163	-.901	-.357	-.990
item27	1.000	5.000	-.072	-.400	-.548	-1.518
item16	2.000	5.000	.317	1.754	-.346	-.959
item17	2.000	5.000	.040	.222	-.525	-1.455
item22	2.000	5.000	.016	.086	-.662	-1.832
item21	1.000	5.000	-.346	-1.918	-.075	-.207
item20	1.000	5.000	-.226	-1.251	-.193	-.534
Multivariate					119.358	23.872

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 276

Number of distinct parameters to be estimated: 74

Degrees of freedom (276 - 74): 202

Result (Default model)

Minimum was achieved

Chi-square = 203.404

Degrees of freedom = 202

Probability level = .459

Group number 1 (Group number 1 - Default model)

Estimates (Group number 1 - Default model)

Scalar Estimates (Group number 1 - Default model)

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.619	.056	11.010	***	par_9
BAuthen <-- SMEBE	.714	.058	12.308	***	par_10
BFunc <-- SMEBE	.645	.058	11.121	***	par_11
BReso <-- SMEBE	.367	.053	6.882	***	par_21
BAware <-- SMEBE	.660	.064	10.298	***	par_23
item20 <-- BFunc	1.000				
item21 <-- BFunc	.941	.081	11.584	***	par_1
item22 <-- BFunc	.839	.081	10.295	***	par_2
item17 <-- BFunc	.769	.082	9.432	***	par_3
item16 <-- BFunc	.584	.076	7.636	***	par_4
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	.788	.089	8.873	***	par_5
item32 <-- BAttent	1.000				
item34 <-- BAttent	.544	.089	6.120	***	par_6
item35 <-- BAttent	.761	.095	8.031	***	par_7
item33 <-- BAttent	.333	.098	3.389	***	par_8
item9 <-- BAuthen	.852	.086	9.956	***	par_12
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	.887	.069	12.860	***	par_13
P1_14 <-- BAware	.760	.069	10.975	***	par_14
P1_13 <-- BAware	.623	.068	9.213	***	par_15
P1_12 <-- BAware	.533	.067	7.940	***	par_16
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	1.149	.147	7.828	***	par_17
P2_3 <-- BReso	1.597	.216	7.384	***	par_18
P2_4 <-- BReso	1.575	.215	7.311	***	par_19
P2_5 <-- BReso	1.490	.213	6.998	***	par_20
P2_6 <-- BReso	1.044	.184	5.667	***	par_22

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
BAttent <-- SMEBE	.936
BAuthen <-- SMEBE	.991
BFunc <-- SMEBE	.897

	Estimate
BReso <-- SMEBE	.821
BAware <-- SMEBE	.786
item20 <-- BFunc	.805
item21 <-- BFunc	.796
item22 <-- BFunc	.714
item17 <-- BFunc	.675
item16 <-- BFunc	.554
item27 <-- BAuthen	.794
item8 <-- BAuthen	.638
item32 <-- BAttent	.775
item34 <-- BAttent	.483
item35 <-- BAttent	.621
item33 <-- BAttent	.271
item9 <-- BAuthen	.702
P1_16 <-- BAware	.853
P1_15 <-- BAware	.818
P1_14 <-- BAware	.716
P1_13 <-- BAware	.637
P1_12 <-- BAware	.567
P2_1 <-- BReso	.542
P2_2 <-- BReso	.632
P2_3 <-- BReso	.815
P2_4 <-- BReso	.775
P2_5 <-- BReso	.722
P2_6 <-- BReso	.544

Covariances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
e34 <--> e33	.285	.044	6.413	***	par_24
e17 <--> e16	.143	.033	4.311	***	par_25
e2_3 <--> e2_6	-.159	.033	-4.814	***	par_26
e2_1 <--> e2_2	.131	.033	3.906	***	par_27
e1_16 <--> e2_2	-.089	.028	-3.192	.001	par_28
e21 <--> e34	-.084	.023	-3.686	***	par_29
e21 <--> e2_3	-.108	.026	-4.161	***	par_30
e8 <--> e9	.108	.039	2.788	.005	par_31
e21 <--> e17	-.067	.024	-2.723	.006	par_32
e20 <--> e1_14	.078	.028	2.761	.006	par_33
e2_2 <--> e2_5	.075	.028	2.651	.008	par_34
e2_5 <--> e2_6	.109	.041	2.646	.008	par_35
e1_13 <--> e1_12	.073	.033	2.194	.028	par_36
e17 <--> e1_13	.063	.028	2.280	.023	par_37
e16 <--> e2_2	-.055	.025	-2.220	.026	par_38
e1_16 <--> e2_6	-.073	.030	-2.396	.017	par_39
e1_14 <--> e2_2	.064	.029	2.206	.027	par_40
e20 <--> e2_3	-.082	.026	-3.159	.002	par_41
e22 <--> e2_3	-.095	.029	-3.269	.001	par_42
e22 <--> e2_4	-.075	.031	-2.439	.015	par_43
e34 <--> e2_4	-.060	.024	-2.502	.012	par_44
e34 <--> e35	.144	.036	3.973	***	par_45
e35 <--> e33	.150	.041	3.622	***	par_46

Correlations: (Group number 1 - Default model)

	Estimate
e34 <--> e33	.560
e17 <--> e16	.376
e2_3 <--> e2_6	-.434
e2_1 <--> e2_2	.299
e1_16 <--> e2_2	-.275
e21 <--> e34	-.250
e21 <--> e2_3	-.415
e8 <--> e9	.252
e21 <--> e17	-.215
e20 <--> e1_14	.239
e2_2 <--> e2_5	.187
e2_5 <--> e2_6	.237
e1_13 <--> e1_12	.178
e17 <--> e1_13	.165
e16 <--> e2_2	-.137
e1_16 <--> e2_6	-.197
e1_14 <--> e2_2	.163
e20 <--> e2_3	-.304
e22 <--> e2_3	-.316
e22 <--> e2_4	-.220
e34 <--> e2_4	-.160
e34 <--> e35	.347
e35 <--> e33	.302

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
--	----------	------	------	---	-------

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.010	.032	.298	.766	par_47
res4	.054	.040	1.339	.181	par_48
res2	.101	.028	3.559	***	par_49
res1	.269	.049	5.450	***	par_50
res5	.065	.020	3.309	***	par_51
e20	.280	.037	7.513	***	par_52
e21	.265	.036	7.312	***	par_53
e22	.350	.042	8.416	***	par_54
e17	.364	.043	8.417	***	par_55
e16	.398	.043	9.183	***	par_56
e27	.304	.044	6.880	***	par_57
e8	.470	.054	8.631	***	par_58
e9	.389	.047	8.196	***	par_59
e32	.291	.049	5.927	***	par_60
e34	.426	.047	9.114	***	par_61
e35	.403	.048	8.316	***	par_62
e33	.610	.065	9.417	***	par_63
e1_16	.263	.042	6.228	***	par_64
e1_15	.274	.039	7.093	***	par_65
e1_14	.387	.046	8.327	***	par_66
e1_13	.401	.046	8.749	***	par_67
e1_12	.423	.047	8.976	***	par_68
e2_1	.480	.052	9.158	***	par_69
e2_2	.398	.044	9.110	***	par_70
e2_4	.331	.042	7.868	***	par_71
e2_5	.409	.049	8.277	***	par_72
e2_3	.258	.039	6.649	***	par_73
e2_6	.517	.060	8.670	***	par_74

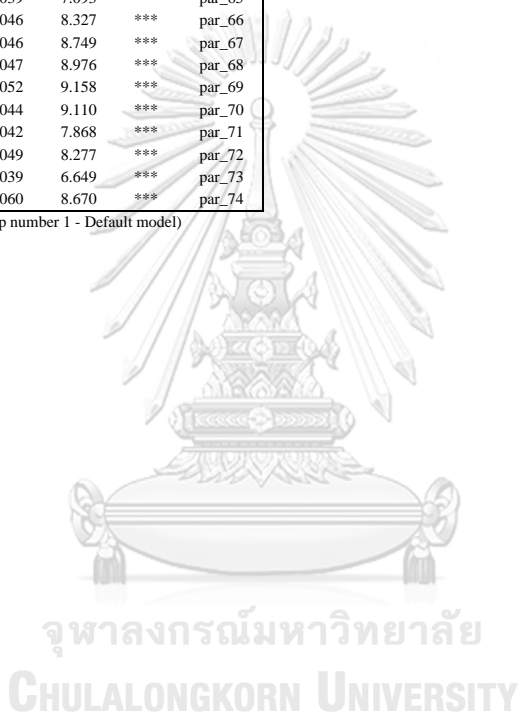
Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
BReso	.673
BAware	.618
BAttent	.877
BAuthen	.982
BFuncnt	.805
P2_6	.296
P2_5	.521
P2_4	.600
P2_3	.664
P2_2	.399
P2_1	.294
P1_12	.321
P1_13	.405
P1_14	.513
P1_15	.669
P1_16	.728
item33	.074
item35	.386
item34	.233
item32	.601
item9	.492
item8	.407
item27	.631
item16	.307
item17	.456
item22	.510
item21	.633
item20	.649

Matrices (Group number 1 - Default model)

Residual Covariances (Group number 1 - Default model)

	P	P	P	P	P	P	P	P	P	P	P	it	it	it	it	it	it	it	it	it	it
	2	2	2	2	2	2	1	1	1	1	1	e	e	e	e	e	e	e	e	e	e
	-	5	4	3	2	1	2	3	4	5	6	3	3	3	3	9	8	7	6	7	2
P	.																				
2	0	.																			
-	0	0	.																		
6	1			.																	
P	-	.			.																
2	0	0	.			.															
-	0	0	0	.																	
5	2	0			.																
P	-	-	-			.															
2	0	0	0			0	.														
-	6	0	1				6	.													
4	7	2	3				7	2	.												
P	-	-	-																		



	P 2 6	P 2 5	P 2 4	P 2 3	P 2 2	P 2 1	P 1 2	P 1 3	P 1 4	P 1 5	P 1 6	ite m 3 3	ite m 3 5	ite m 3 4	ite m 3 2	ite m 9	ite m 8	ite m 2 7	ite m 1 6	ite m 1 7	ite m 2 2	ite m 2 1	ite m 2 0		
e m 3 4	2 2 1	2 9 5	2 2 6	3 2 6	0 6 6	5 7 6	5 4 1	1 6 7	1 0 5	1 8 7	1 1 2	0 3 7	1 3 3	0 3 5	0 3 7	0 3 5	0 3 2	0 3 2	0 3 2	0 3 2	0 3 2	0 3 2	0 3 2	0 3 2	
ite m 3 2	1 6 1	- 0 1	- 5 8	- 6 5	- 7 0	- 8 5	1 4 9	0 5 7	4 9 6	4 1 6	4 1 6	0 2 0	0 2 0	1 2 2	0 2 0	0 2 0	0 2 0	0 2 0	0 2 0	0 2 0	0 2 0	0 2 0	0 2 0	0 2 0	
ite m 9	1 6 1	4 3 4	5 3 3	3 4 2	4 3 3	1 9 5	0 7 6	5 6 6	2 4 0	9 4 1	6 5 7	3 9 5	1 1 7	6 2 8	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
ite m 8	1 2 3	- 4 3	- 5 5	- 0 8	- 1 6	- 5 7	7 4 0	0 9 2	5 6 4	0 9 4	0 6 4	3 4 4	3 9 4	1 8 6	4 7 2	3 2 1	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
ite m 2 7	6 3 5	3 7 4	3 8 3	3 1 3	0 1 4	2 8 0	1 4 9	2 8 4	4 2 8	4 3 4	5 0 7	0 3 3	1 2 7	4 3 2	0 2 2	2 5 5	0 7 6	0 5 0	0 6 0	0 7 0	0 8 0	0 9 0	0 7 0	0 6 0	0 5 0
ite m 1 6	1 8 7	1 9 1	1 2 9	8 6 1	2 1 6	0 6 2	4 2 3	4 5 7	2 3 7	9 7 7	7 3 7	4 9 9	2 5 1	2 8 1	1 1 8	1 1 2	3 1 2	1 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2	0 1 2
ite m 1 7	4 9 7	7 9 7	1 3 8	0 7 5	1 7 9	0 4 7	4 3 4	9 5 9	6 6 7	7 4 1	8 5 7	6 4 3	7 1 8	0 8 4	6 6 4	3 8 4	0 3 4	2 6 6	1 1 3	5 6 3	2 9 4	4 8 7	0 7 8	0 4 7	0 5 7
ite m 2 2	9 1 1	4 3 2	0 1 6	1 0 5	8 8 7	4 4 3	4 9 2	6 2 0	1 3 3	1 3 3	3 6 1	4 6 1	9 6 2	1 6 6	3 5 2	7 8 8	9 2 9	5 6 9	2 6 3	6 7 3	0 7 0	7 0 7	0 0 7	1 5 2	7 0 2
ite m 2 1	8 4 0	4 0 2	9 0 6	6 4 4	4 3 7	3 9 4	1 9 4	6 0 4	5 9 4	1 1 7	8 2 5	0 1 2	8 8 6	1 0 2	3 0 2	1 6 8	5 1 4	0 6 6	1 4 8	6 0 8	0 4 1	0 9 8	0 9 8	0 9 8	0 6 0
ite m 2 0	9 1 4	0 3 9	2 0 1	0 2 8	2 3 9	7 9 0	1 3 6	3 7 1	0 4 4	3 5 3	0 5 3	2 3 1	0 9 5	2 3 3	0 5 7	5 3 3	1 5 3	2 5 8	0 5 6	1 5 6	0 6 9	5 6 9	3 4 9	1 6 9	0 5 8

Factor Score Weights (Group number 1 - Default model)

	P 2 6	P 2 5	P 2 4	P 2 3	P 2 2	P 2 1	P 1 2	P 1 3	P 1 4	P 1 5	P 1 6	ite m 3 3	ite m 3 5	ite m 3 4	ite m 3 2	ite m 9	ite m 8	ite m 2 7	ite m 1 6	ite m 1 7	ite m 2 2	ite m 2 1	ite m 2 0		
S M E B E	0 8 1	0 4 4	0 4 4	2 0 1	0 0 9	0 0 6	0 1 7	0 1 1	0 0 3	0 4 9	0 0 0	0 3 9	0 5 5	1 1 1	0 4 0	1 7 7	0 2 2	1 9 0	0 7 3	0 5 9	0 9 8	0 5 8	0 9 9	1 7 8	0 0 8
B R e s o	1 0 3	0 2 7	1 0 1	2 2 5	0 2 7	0 4 3	0 0 3	0 0 2	0 1 9	0 0 8	0 0 5	0 3 7	0 1 8	0 0 0	0 4 0	0 0 1	0 0 1	0 0 2	0 0 7	0 0 1	0 1 0	0 5 5	0 1 1	0 6 9	0 2 9
B A w a r e	0 6 2	0 3 7	0 4 3	0 5 5	0 9 2	0 2 1	0 7 7	1 0 5	1 4 1	2 4 5	3 2 5	0 0 7	0 1 0	0 8 5	0 2 9	0 9 3	0 1 3	0 4 4	0 1 8	0 1 8	0 3 8	0 0 3	0 0 9	0 2 9	0 3 9
B A t t e n t	0 3 8	0 1 3	0 2 7	0 9 7	0 1 3	0 0 3	0 0 8	0 0 5	0 0 2	0 2 4	0 4 3	0 0 3	0 9 6	0 1 1	2 5 2	0 1 1	0 3 5	0 9 1	0 5 1	0 0 0	0 3 0	0 4 6	0 3 7	0 4 9	0 7 9
B A u t h e n	0 5 5	0 1 1	0 3 0	1 3 6	0 2 2	0 0 4	0 0 2	0 0 8	0 0 2	0 3 3	0 6 1	0 3 2	0 6 7	0 0 8	0 9 5	0 8 9	0 6 6	1 5 8	0 0 8	0 4 8	0 0 2	0 4 6	0 1 1	0 6 2	0 7 3

	P 2	P 2	P 2	P 2	P 2	P 2	P 1	P 1	P 1	P 1	P 1	it e m	it e m	it e m	it e m	it e m	it e m	it e m	it e m	it e m	it e m	it e m	
	6	5	4	3	2	1	1	1	1	1	1	3	3	3	3	2	9	8	7	6	7	2	0
B F u n c t	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
	5	5	0	0	0	2	0	1	3	5	3	3	0	0	0	1	1	3	0	3	4	8	0
	4	7	6	0	1	4	9	5	3	2	5	3	7	7	0	0	8	2	1	9	3	6	7

Modification Indices (Group number 1 - Default model)

Covariances: (Group number 1 - Default model)

		M.I.	Par Change
e2_1	<-> res1	6.227	.078
e33	<-> res1	4.050	-.060
e35	<-> e2_2	4.847	-.055
e8	<-> res5	4.094	-.034
e8	<-> e2_3	11.927	-.094
e21	<-> res1	5.167	-.059

Variances: (Group number 1 - Default model)

	M.I.	Par Change

Regression Weights: (Group number 1 - Default model)

		M.I.	Par Change
P2_3	<--- item8	6.761	-.118
P2_1	<--- P1_12	5.391	.143
P1_12	<--- P2_1	4.083	.118
P1_13	<--- item33	5.323	-.133
P1_15	<--- item34	5.531	-.138
item8	<--- P2_3	7.162	-.152

Minimization History (Default model)

Iteration		Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e	19		-.873	9999.000	2312.816	0	9999.000
1	e	12		-.179	2.155	1249.830	20	.695
2	e	8		-.148	.878	895.447	6	.901
3	e*	3		-.100	1.364	498.416	5	.798
4	e	0	3109.256		.656	323.939	4	.901
5	e	1		-.101	.556	323.099	7	.000
6	e	0	67.059		.450	245.770	5	.883
7	e	0	80.090		.640	212.570	1	1.051
8	e	0	159.551		.312	204.532	1	1.127
9	e	0	323.697		.231	203.507	1	1.130
10	e	0	424.568		.082	203.405	1	1.074
11	e	0	449.489		.014	203.404	1	1.013
12	e	0	448.129		.000	203.404	1	1.000

Model Fit Summary

Model	NPART	CMIN	DF	P	CMIN/DF
Default model	74	203.404	202	.459	1.007
Saturated model	276	.000	0		
Independence model	23	2312.241	253	.000	9.139

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.037	.912	.880	.668
Saturated model	.000	1.000		
Independence model	.281	.229	.159	.210

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.912	.890	.999	.999	.999
Saturated model	1.000	1.000	1.000	1.000	1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.798	.728	.798
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	1.404	.000	38.989
Saturated model	.000	.000	.000
Independence model	2059.241	1909.091	2216.791

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.111	.008	.000	.213
Saturated model	.000	.000	.000	.000
Independence model	12.635	11.253	10.432	12.114

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.006	.000	.032	1.000

Model	RMSEA	LO 90	HI 90	PCLOSE
Independence model	.211	.203	.219	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	351.404	373.743	589.309	663.309
Saturated model	552.000	635.321	1439.322	1715.322
Independence model	2358.241	2365.184	2432.184	2455.184

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.920	1.913	2.126	2.042
Saturated model	3.016	3.016	3.016	3.472
Independence model	12.887	12.066	13.747	12.925

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	213	227
Independence model	24	25

Execution time summary

Minimization: .009

Miscellaneous: .476

Bootstrap: .000

Total: .485



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Appendix O

AMOS outputs for the SMEBE model invariance testing for SME brands in different sectors

1. Hypothesized model (Model 1)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model for testing measurement model invariance of 3 smes with no equality constrained imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 1:36:29 PM

Title

Amos baseline model for testing measurement model invariance of 3 smes with no equality constrained imposed: Monday, November 26, 2018 1:36 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (service)

Your model contains the following variables (service)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (service)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (service)



	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0
Unlabeled	23	3	28	0	0	54
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)

The model is recursive.

Sample size = 184

Variable Summary (manufacturing)

Your model contains the following variables (manufacturing)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (manufacturing)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (manufacturing)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0
Unlabeled	23	3	28	0	0	54
Total	56	3	29	0	0	88

Group number 3 (Group number 3)

Notes for Group (Group number 3)

The model is recursive.

Sample size = 184

Variable Summary (trade)

Your model contains the following variables (trade)

Observed, endogenous variables

item20

item21



item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunct
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (trade)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0
Unlabeled	23	3	28	0	0	54
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 828

Number of distinct parameters to be estimated: 162

Degrees of freedom (828 - 162): 666

Result (Default model)

Minimum was achieved

Chi-square = 1225.391

Degrees of freedom = 666

Probability level = .000

service (service - Default model)

Estimates (service - Default model)

Scalar Estimates (service - Default model)

Maximum Likelihood Estimates

Regression Weights: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<---	SMEBE	.505	.048	10.481	***	
BAuthen	<---	SMEBE	.642	.057	11.199	***	
BFunct	<---	SMEBE	.628	.051	12.234	***	
BReso	<---	SMEBE	.552	.049	11.340	***	



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			Estimate	S.E.	C.R.	P	Label
BAware	<--	SMEBE	.637	.058	10.969	***	
item20	<--	BFunct	1.000				
item21	<--	BFunct	1.031	.076	13.540	***	
item22	<--	BFunct	1.008	.081	12.510	***	
item17	<--	BFunct	.808	.082	9.908	***	
item16	<--	BFunct	.724	.080	9.079	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.900	.088	10.197	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.086	.112	9.676	***	
item35	<--	BAttent	1.110	.113	9.805	***	
item33	<--	BAttent	1.056	.112	9.416	***	
item9	<--	BAuthen	.986	.092	10.694	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	1.028	.072	14.294	***	
P1_14	<--	BAware	.912	.063	14.480	***	
P1_13	<--	BAware	.950	.064	14.960	***	
P1_12	<--	BAware	.869	.069	12.628	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.115	.099	11.257	***	
P2_3	<--	BReso	1.148	.096	11.971	***	
P2_4	<--	BReso	1.251	.105	11.864	***	
P2_5	<--	BReso	1.236	.106	11.647	***	
P2_6	<--	BReso	1.132	.106	10.688	***	

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.201	.032	6.256	***	
e34	<-->	e35	.064	.028	2.301	.021	
e2_5	<-->	e2_6	.075	.028	2.656	.008	

Variances: (service - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.011	.018	.649	.517	
res4	.040	.015	2.609	.009	
res2	.050	.016	3.052	.002	
res1	.190	.033	5.741	***	
res5	.043	.012	3.455	***	
e20	.223	.028	7.905	***	
e21	.178	.024	7.311	***	
e22	.243	.030	8.019	***	
e17	.343	.039	8.869	***	
e16	.351	.039	9.013	***	
e27	.355	.042	8.437	***	
e8	.263	.032	8.309	***	
e9	.255	.032	7.919	***	
e32	.245	.030	8.081	***	
e34	.286	.036	7.843	***	
e35	.282	.036	7.756	***	
e33	.311	.038	8.277	***	
e1_16	.257	.032	7.994	***	
e1_15	.239	.031	7.776	***	
e1_14	.177	.023	7.664	***	
e1_13	.164	.022	7.329	***	
e1_12	.278	.033	8.475	***	
e2_1	.238	.028	8.534	***	
e2_2	.275	.033	8.457	***	
e2_4	.273	.033	8.152	***	
e2_5	.289	.035	8.189	***	
e2_3	.220	.027	8.086	***	
e2_6	.345	.040	8.564	***	

manufacturing (manufacturing - Default model)

Estimates (manufacturing - Default model)

Scalar Estimates (manufacturing - Default model)

Maximum Likelihood Estimates

Regression Weights: (manufacturing - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.451	.057	7.850	***	
BAuthen	<--	SMEBE	.450	.065	6.951	***	
BFunct	<--	SMEBE	.501	.059	8.443	***	
BReso	<--	SMEBE	.499	.060	8.260	***	
BAware	<--	SMEBE	.572	.065	8.814	***	
item20	<--	BFunct	1.000				
item21	<--	BFunct	1.165	.129	9.019	***	
item22	<--	BFunct	1.264	.130	9.703	***	
item17	<--	BFunct	.567	.106	5.369	***	
item16	<--	BFunct	.442	.115	3.847	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.478	.202	7.304	***	

			Estimate	S.E.	C.R.	P	Label
item32	<--	BAttent	1.000				
item34	<--	BAttent	.920	.128	7.181	***	
item35	<--	BAttent	.908	.128	7.078	***	
item33	<--	BAttent	1.167	.134	8.707	***	
item9	<--	BAuthen	1.358	.191	7.115	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.977	.077	12.674	***	
P1_14	<--	BAware	1.093	.085	12.855	***	
P1_13	<--	BAware	.835	.076	11.015	***	
P1_12	<--	BAware	.749	.080	9.405	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.151	.131	8.797	***	
P2_3	<--	BReso	1.186	.127	9.336	***	
P2_4	<--	BReso	1.294	.140	9.266	***	
P2_5	<--	BReso	1.187	.135	8.811	***	
P2_6	<--	BReso	.836	.130	6.425	***	

Covariances: (manufacturing - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.428	.058	7.441	***	
e34	<-->	e35	.155	.046	3.354	***	
e2_5	<-->	e2_6	.104	.042	2.477	.013	

Variances: (manufacturing - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.075	.027	2.797	.005	
res4			.146	.037	3.927	***	
res2			.136	.035	3.867	***	
res1			.306	.056	5.502	***	
res5			.111	.030	3.703	***	
e20			.373	.048	7.790	***	
e21			.415	.056	7.381	***	
e22			.286	.049	5.858	***	
e17			.538	.059	9.183	***	
e16			.712	.076	9.387	***	
e27			.593	.068	8.702	***	
e8			.306	.053	5.729	***	
e9			.367	.054	6.860	***	
e32			.336	.046	7.232	***	
e34			.485	.060	8.128	***	
e35			.496	.061	8.188	***	
e33			.293	.049	5.921	***	
e1_16			.298	.041	7.288	***	
e1_15			.288	.039	7.315	***	
e1_14			.337	.047	7.156	***	
e1_13			.362	.044	8.273	***	
e1_12			.473	.054	8.774	***	
e2_1			.475	.054	8.730	***	
e2_2			.355	.044	8.074	***	
e2_4			.319	.043	7.453	***	
e2_5			.373	.046	8.027	***	
e2_3			.253	.034	7.325	***	
e2_6			.645	.071	9.074	***	

trade (trade - Default model)

Estimates (trade - Default model)

Scalar Estimates (trade - Default model)

Maximum Likelihood Estimates

Regression Weights: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.595	.057	10.360	***	
BAuthen	<--	SMEBE	.712	.059	12.123	***	
BFunct	<--	SMEBE	.654	.058	11.197	***	
BReso	<--	SMEBE	.376	.052	7.168	***	
BAware	<--	SMEBE	.648	.065	9.956	***	
item20	<--	BFunct	1.000				
item21	<--	BFunct	.916	.082	11.142	***	
item22	<--	BFunct	.855	.084	10.186	***	
item17	<--	BFunct	.746	.082	9.038	***	
item16	<--	BFunct	.576	.079	7.328	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.837	.088	9.561	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	.587	.090	6.512	***	
item35	<--	BAttent	.794	.097	8.184	***	
item33	<--	BAttent	.448	.098	4.580	***	
item9	<--	BAuthen	.875	.085	10.290	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.890	.070	12.657	***	
P1_14	<--	BAware	.750	.072	10.457	***	

			Estimate	S.E.	C.R.	P	Label
P1_13	<--	BAware	.651	.068	9.566	***	
P1_12	<--	BAware	.552	.067	8.205	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.137	.156	7.304	***	
P2_3	<--	BReso	1.405	.176	7.969	***	
P2_4	<--	BReso	1.444	.181	7.982	***	
P2_5	<--	BReso	1.372	.180	7.619	***	
P2_6	<--	BReso	.768	.150	5.117	***	

Covariances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.161	.035	4.637	***	
e34	<-->	e35	.111	.035	3.150	.002	
e2_5	<-->	e2_6	.165	.043	3.849	***	

Variances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.021	.029	.712	.477	
res4			.090	.039	2.310	.021	
res2			.088	.029	3.044	.002	
res1			.279	.052	5.367	***	
res5			.101	.027	3.796	***	
e20			.285	.039	7.255	***	
e21			.284	.037	7.638	***	
e22			.348	.042	8.207	***	
e17			.386	.045	8.630	***	
e16			.405	.045	9.015	***	
e27			.296	.042	7.086	***	
e8			.423	.050	8.470	***	
e9			.363	.045	8.134	***	
e32			.285	.048	5.992	***	
e34			.400	.046	8.709	***	
e35			.377	.047	7.976	***	
e33			.569	.061	9.261	***	
e1_16			.272	.043	6.380	***	
e1_15			.275	.039	7.063	***	
e1_14			.391	.047	8.340	***	
e1_13			.382	.044	8.625	***	
e1_12			.411	.046	8.941	***	
e2_1			.437	.050	8.795	***	
e2_2			.349	.042	8.311	***	
e2_4			.307	.042	7.245	***	
e2_5			.395	.050	7.938	***	
e2_3			.295	.041	7.280	***	
e2_6			.593	.065	9.180	***	

Model Fit Summary
CMIN

Model	NP	PAR	CMIN	DF	P	CMIN/DF
Default model	162	1225.391	666	.000	1.840	
Saturated model	828	.000	0	.000		
Independence model	69	8176.428	759	.000	10.773	

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.045	.837	.797	.673
Saturated model	.000	1.000		
Independence model	.318	.189	.115	.173

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.850	.829	.926	.914	.925
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.877	.746	.811
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	559.391	464.995	661.602
Saturated model	.000	.000	.000
Independence model	7417.428	7130.199	7711.142

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.232	1.019	.847	1.205
Saturated model	.000	.000	.000	.000
Independence model	14.893	13.511	12.988	14.046

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.039	.036	.043	1.000
Independence model	.133	.131	.136	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1549.391	1598.297		
Saturated model	1656.000	1905.962		
Independence model	8314.428	8335.258		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.822	2.650	3.008	2.911
Saturated model	3.016	3.016	3.016	3.472
Independence model	15.145	14.621	15.680	15.183

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	328	340
Independence model	58	60

Execution time summary

Minimization:	.032
Miscellaneous:	.862
Bootstrap:	.000
Total:	.894



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2. Factor loadings, variances, and covariances constrained equal

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 1:40:18 PM

Title

Amos baseline model for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 1:40 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (trade)

Your model contains the following variables (trade)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (trade)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	3	0	0	0	24
Unlabeled	2	0	28	0	0	30
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)

The model is recursive.



Sample size = 184
 Variable Summary (manu)
 Your model contains the following variables (manu)

Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunc
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (manu)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (manu)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	3	0	0	0	24
Unlabeled	2	0	28	0	0	30
Total	56	3	29	0	0	88

Group number 3 (Group number 3)

Notes for Group (Group number 3)

The model is recursive.

Sample size = 184

Variable Summary (service)

Your model contains the following variables (service)

Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35



item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6
 Unobserved, endogenous variables
 BFunc
 BAuthen
 BAttent
 BAware
 BReso
 Unobserved, exogenous variables
 e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6
 Variable counts (service)
 Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28
 Parameter Summary (service)



	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	3	0	0	0	24
Unlabeled	2	0	28	0	0	30
Total	56	3	29	0	0	88

Models
 Default model (Default model)
 Notes for Model (Default model)
 Computation of degrees of freedom (Default model)
 Number of distinct sample moments: 828
 Number of distinct parameters to be estimated: 114
 Degrees of freedom (828 - 114): 714
 Result (Default model)
 Minimum was achieved
 Chi-square = 1350.327
 Degrees of freedom = 714
 Probability level = .000
 trade (trade - Default model)
 Estimates (trade - Default model)
 Scalar Estimates (trade - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.493	.031	15.917	***	pbcu
BAuthen	<--	SMEBE	.619	.035	17.732	***	pbau
BFunc	<--	SMEBE	.606	.032	18.795	***	pbpr
BReso	<--	SMEBE	.411	.040	10.265	***	
BAware	<--	SMEBE	.611	.036	17.115	***	pbaw
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.016	.052	19.531	***	p10
item22	<--	BFunc	1.012	.053	18.955	***	p9
item17	<--	BFunc	.712	.051	13.890	***	p8
item16	<--	BFunc	.604	.051	11.723	***	p7
item27	<--	BAuthen	1.000				

			Estimate	S.E.	C.R.	P	Label
item8	<--	BAuthen	.975	.060	16.145	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	.932	.067	13.892	***	p17
item35	<--	BAttent	1.001	.069	14.468	***	p16
item33	<--	BAttent	.964	.068	14.164	***	p15
item9	<--	BAuthen	1.003	.061	16.530	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.976	.043	22.655	***	p5
P1_14	<--	BAware	.911	.042	21.752	***	p4
P1_13	<--	BAware	.845	.040	21.022	***	p3
P1_12	<--	BAware	.746	.042	17.694	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.135	.072	15.826	***	p22
P2_3	<--	BReso	1.213	.072	16.869	***	p21
P2_4	<--	BReso	1.352	.121	11.198	***	
P2_5	<--	BReso	1.260	.077	16.266	***	p20
P2_6	<--	BReso	.978	.074	13.146	***	p19

Covariances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.259	.024	10.930	***	v_e1617
e34	<-->	e35	.080	.020	4.026	***	v_e3435
e2_5	<-->	e2_6	.101	.021	4.833	***	v_e2_52_6

Variances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.032	.024	1.315	.188	
res4			.083	.026	3.227	.001	
res2			.071	.024	2.974	.003	
res1			.214	.038	5.585	***	
res5			.104	.021	4.943	***	
e20			.304	.039	7.797	***	
e21			.280	.037	7.567	***	
e22			.332	.042	7.911	***	
e17			.479	.043	11.028	***	
e16			.484	.043	11.216	***	
e27			.321	.042	7.735	***	
e8			.406	.049	8.251	***	
e9			.347	.044	7.883	***	
e32			.359	.046	7.841	***	
e34			.354	.041	8.583	***	
e35			.355	.043	8.348	***	
e33			.529	.062	8.519	***	
e1_16			.318	.042	7.547	***	
e1_15			.288	.039	7.440	***	
e1_14			.382	.047	8.187	***	
e1_13			.371	.044	8.347	***	
e1_12			.403	.046	8.689	***	
e2_1			.433	.049	8.774	***	
e2_2			.340	.041	8.244	***	
e2_4			.322	.044	7.403	***	
e2_5			.375	.044	8.584	***	
e2_3			.333	.041	8.023	***	
e2_6			.551	.058	9.476	***	

manu (manu - Default model)

Estimates (manu - Default model)

Scalar Estimates (manu - Default model)

Maximum Likelihood Estimates

Regression Weights: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.493	.031	15.917	***	pbcu
BAuthen	<--	SMEBE	.619	.035	17.732	***	pbau
BFunc	<--	SMEBE	.606	.032	18.795	***	pbpr
BReso	<--	SMEBE	.501	.045	11.121	***	
BAware	<--	SMEBE	.611	.036	17.115	***	pbaw
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.016	.052	19.531	***	p10
item22	<--	BFunc	1.012	.053	18.955	***	p9
item17	<--	BFunc	.712	.051	13.890	***	p8
item16	<--	BFunc	.604	.051	11.723	***	p7
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.975	.060	16.145	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	.932	.067	13.892	***	p17
item35	<--	BAttent	1.001	.069	14.468	***	p16
item33	<--	BAttent	.964	.068	14.164	***	p15
item9	<--	BAuthen	1.003	.061	16.530	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.976	.043	22.655	***	p5

			Estimate	S.E.	C.R.	P	Label
P1_14	<--	BAware	.911	.042	21.752	***	p4
P1_13	<--	BAware	.845	.040	21.022	***	p3
P1_12	<--	BAware	.746	.042	17.694	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.135	.072	15.826	***	p22
P2_3	<--	BReso	1.213	.072	16.869	***	p21
P2_4	<--	BReso	1.341	.107	12.530	***	
P2_5	<--	BReso	1.260	.077	16.266	***	p20
P2_6	<--	BReso	.978	.074	13.146	***	p19

Covariances: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.259	.024	10.930	***	v_e1617
e34	<-->	e35	.080	.020	4.026	***	v_e3435
e2_5	<-->	e2_6	.101	.021	4.833	***	v_e2_52_6

Variances: (manu - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.107	.036	2.933	.003	
res4	.155	.035	4.477	***	
res2	.149	.035	4.200	***	
res1	.328	.052	6.268	***	
res5	.104	.024	4.392	***	
e20	.343	.046	7.429	***	
e21	.448	.057	7.904	***	
e22	.351	.047	7.430	***	
e17	.405	.038	10.761	***	
e16	.548	.049	11.277	***	
e27	.556	.069	8.061	***	
e8	.379	.051	7.405	***	
e9	.395	.054	7.372	***	
e32	.337	.046	7.365	***	
e34	.441	.051	8.608	***	
e35	.437	.052	8.368	***	
e33	.346	.046	7.565	***	
e1_16	.288	.040	7.155	***	
e1_15	.287	.040	7.271	***	
e1_14	.382	.047	8.081	***	
e1_13	.362	.044	8.219	***	
e1_12	.468	.053	8.759	***	
e2_1	.484	.055	8.851	***	
e2_2	.364	.044	8.323	***	
e2_4	.312	.042	7.407	***	
e2_5	.364	.043	8.484	***	
e2_3	.257	.034	7.526	***	
e2_6	.643	.068	9.527	***	

service (service - Default model)

Estimates (service - Default model)

Scalar Estimates (service - Default model)

Maximum Likelihood Estimates

Regression Weights: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.493	.031	15.917	***	pbcu
BAuthen	<--	SMEBE	.619	.035	17.732	***	pbau
BFunct	<--	SMEBE	.606	.032	18.795	***	pbpr
BReso	<--	SMEBE	.521	.037	13.991	***	
BAware	<--	SMEBE	.611	.036	17.115	***	pbaw
item20	<--	BFunct	1.000				
item21	<--	BFunct	1.016	.052	19.531	***	p10
item22	<--	BFunct	1.012	.053	18.955	***	p9
item17	<--	BFunct	.712	.051	13.890	***	p8
item16	<--	BFunct	.604	.051	11.723	***	p7
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.975	.060	16.145	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	.932	.067	13.892	***	p17
item35	<--	BAttent	1.001	.069	14.468	***	p16
item33	<--	BAttent	.964	.068	14.164	***	p15
item9	<--	BAuthen	1.003	.061	16.530	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.976	.043	22.655	***	p5
P1_14	<--	BAware	.911	.042	21.752	***	p4
P1_13	<--	BAware	.845	.040	21.022	***	p3
P1_12	<--	BAware	.746	.042	17.694	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.135	.072	15.826	***	p22
P2_3	<--	BReso	1.213	.072	16.869	***	p21
P2_4	<--	BReso	1.279	.098	13.050	***	
P2_5	<--	BReso	1.260	.077	16.266	***	p20

	Estimate	S.E.	C.R.	P	Label
P2_6 <-- BReso	.978	.074	13.146	***	p19

Covariances: (service - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.259	.024	10.930	***	v_e1617
e34 <--> e35	.080	.020	4.026	***	v_e3435
e2_5 <--> e2_6	.101	.021	4.833	***	v_e2_52_6

Variances: (service - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.008	.017	.505	.613	
res4	.050	.017	2.887	.004	
res2	.054	.017	3.218	.001	
res1	.218	.034	6.414	***	
res5	.042	.012	3.525	***	
e20	.221	.028	7.862	***	
e21	.174	.024	7.292	***	
e22	.239	.030	7.955	***	
e17	.396	.035	11.360	***	
e16	.407	.035	11.532	***	
e27	.357	.042	8.535	***	
e8	.264	.032	8.160	***	
e9	.255	.032	7.993	***	
e32	.237	.030	7.776	***	
e34	.302	.034	8.811	***	
e35	.294	.034	8.577	***	
e33	.311	.037	8.343	***	
e1_16	.252	.032	7.823	***	
e1_15	.231	.030	7.757	***	
e1_14	.172	.023	7.428	***	
e1_13	.175	.023	7.763	***	
e1_12	.292	.033	8.736	***	
e2_1	.242	.028	8.593	***	
e2_2	.277	.033	8.472	***	
e2_4	.267	.033	8.061	***	
e2_5	.298	.034	8.814	***	
e2_3	.216	.027	7.946	***	
e2_6	.380	.040	9.487	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	114	1350.327	714	.000	1.891
Saturated model	828	.000	0		
Independence model	69	8176.428	759	.000	10.773

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.070	.822	.793	.709
Saturated model	.000	1.000		
Independence model	.318	.189	.115	.173

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.835	.824	.915	.909	.914
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.941	.785	.860
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	636.327	536.512	743.937
Saturated model	.000	.000	.000
Independence model	7417.428	7130.199	7711.142

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.460	1.159	.977	1.355
Saturated model	.000	.000	.000	.000
Independence model	14.893	13.511	12.988	14.046

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.040	.037	.044	1.000
Independence model	.133	.131	.136	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1578.327	1612.742		
Saturated model	1656.000	1905.962		

Model	AIC	BCC	BIC	CAIC
Independence model	8314.428	8335.258		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.875	2.693	3.071	2.938
Saturated model	3.016	3.016	3.016	3.472
Independence model	15.145	14.621	15.680	15.183

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	319	330
Independence model	58	60

Execution time summary

Minimization:	.043
Miscellaneous:	1.014
Bootstrap:	.000
Total:	1.057



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3. Model 1 (a)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model for testing measurement model invariance of 3 smes with no equality constrained imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 2:43:58 PM

Title

Amos baseline model for testing measurement model invariance of 3 smes with no equality constrained imposed: Monday, November 26, 2018 2:43 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (service)

Your model contains the following variables (service)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (service)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (service)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0
Unlabeled	23	3	28	0	0	54
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)

The model is recursive.



Sample size = 184
 Variable Summary (manufacturing)
 Your model contains the following variables (manufacturing)

Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunc
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (manufacturing)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (manufacturing)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0
Unlabeled	23	3	28	0	0	54
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 108

Degrees of freedom (552 - 108): 444

Result (Default model)

Minimum was achieved

Chi-square = 810.422

Degrees of freedom = 444

Probability level = .000

service (service - Default model)

Estimates (service - Default model)

Scalar Estimates (service - Default model)

Maximum Likelihood Estimates

Regression Weights: (service - Default model)



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			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.505	.048	10.481	***	
BAuthen	<--	SMEBE	.642	.057	11.199	***	
BFunc	<--	SMEBE	.628	.051	12.234	***	
BReso	<--	SMEBE	.552	.049	11.340	***	
BAware	<--	SMEBE	.637	.058	10.969	***	
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.031	.076	13.540	***	
item22	<--	BFunc	1.008	.081	12.510	***	
item17	<--	BFunc	.808	.082	9.908	***	
item16	<--	BFunc	.724	.080	9.079	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.900	.088	10.197	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.086	.112	9.676	***	
item35	<--	BAttent	1.110	.113	9.805	***	
item33	<--	BAttent	1.056	.112	9.416	***	
item9	<--	BAuthen	.986	.092	10.694	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	1.028	.072	14.294	***	
P1_14	<--	BAware	.912	.063	14.480	***	
P1_13	<--	BAware	.950	.064	14.960	***	
P1_12	<--	BAware	.869	.069	12.628	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.115	.099	11.257	***	
P2_3	<--	BReso	1.148	.096	11.971	***	
P2_4	<--	BReso	1.251	.105	11.864	***	
P2_5	<--	BReso	1.236	.106	11.647	***	
P2_6	<--	BReso	1.132	.106	10.688	***	

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.201	.032	6.256	***	
e34	<-->	e35	.064	.028	2.301	.021	
e2_5	<-->	e2_6	.075	.028	2.656	.008	

Variances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.011	.018	.649	.517	
res4			.040	.015	2.609	.009	
res2			.050	.016	3.052	.002	
res1			.190	.033	5.741	***	
res5			.043	.012	3.455	***	
e20			.223	.028	7.905	***	
e21			.178	.024	7.311	***	
e22			.243	.030	8.019	***	
e17			.343	.039	8.869	***	
e16			.351	.039	9.013	***	
e27			.355	.042	8.437	***	
e8			.263	.032	8.309	***	
e9			.255	.032	7.919	***	
e32			.245	.030	8.081	***	
e34			.286	.036	7.843	***	
e35			.282	.036	7.756	***	
e33			.311	.038	8.277	***	
e1_16			.257	.032	7.994	***	
e1_15			.239	.031	7.776	***	
e1_14			.177	.023	7.664	***	
e1_13			.164	.022	7.329	***	
e1_12			.278	.033	8.475	***	
e2_1			.238	.028	8.534	***	
e2_2			.275	.033	8.457	***	
e2_4			.273	.033	8.152	***	
e2_5			.289	.035	8.189	***	
e2_3			.220	.027	8.086	***	
e2_6			.345	.040	8.564	***	

manufacturing (manufacturing - Default model)

Estimates (manufacturing - Default model)

Scalar Estimates (manufacturing - Default model)

Maximum Likelihood Estimates

Regression Weights: (manufacturing - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.451	.057	7.850	***	
BAuthen	<--	SMEBE	.450	.065	6.951	***	
BFunc	<--	SMEBE	.501	.059	8.443	***	
BReso	<--	SMEBE	.499	.060	8.260	***	
BAware	<--	SMEBE	.572	.065	8.814	***	
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.165	.129	9.019	***	
item22	<--	BFunc	1.264	.130	9.703	***	

			Estimate	S.E.	C.R.	P	Label
item17	<--	BFunc	.567	.106	5.369	***	
item16	<--	BFunc	.442	.115	3.847	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.478	.202	7.304	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	.920	.128	7.181	***	
item35	<--	BAttent	.908	.128	7.078	***	
item33	<--	BAttent	1.167	.134	8.707	***	
item9	<--	BAuthen	1.358	.191	7.115	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.977	.077	12.674	***	
P1_14	<--	BAware	1.093	.085	12.855	***	
P1_13	<--	BAware	.835	.076	11.015	***	
P1_12	<--	BAware	.749	.080	9.405	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.151	.131	8.797	***	
P2_3	<--	BReso	1.186	.127	9.336	***	
P2_4	<--	BReso	1.294	.140	9.266	***	
P2_5	<--	BReso	1.187	.135	8.811	***	
P2_6	<--	BReso	.836	.130	6.425	***	

Covariances: (manufacturing - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.428	.058	7.441	***	
e34	<-->	e35	.155	.046	3.354	***	
e2_5	<-->	e2_6	.104	.042	2.477	.013	

Variances: (manufacturing - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.075	.027	2.797	.005	
res4			.146	.037	3.927	***	
res2			.136	.035	3.867	***	
res1			.306	.056	5.502	***	
res5			.111	.030	3.703	***	
e20			.373	.048	7.790	***	
e21			.415	.056	7.381	***	
e22			.286	.049	5.858	***	
e17			.538	.059	9.183	***	
e16			.712	.076	9.387	***	
e27			.593	.068	8.702	***	
e8			.306	.053	5.729	***	
e9			.367	.054	6.860	***	
e32			.336	.046	7.232	***	
e34			.485	.060	8.128	***	
e35			.496	.061	8.188	***	
e33			.293	.049	5.921	***	
e1_16			.298	.041	7.288	***	
e1_15			.288	.039	7.315	***	
e1_14			.337	.047	7.156	***	
e1_13			.362	.044	8.273	***	
e1_12			.473	.054	8.774	***	
e2_1			.475	.054	8.730	***	
e2_2			.355	.044	8.074	***	
e2_4			.319	.043	7.453	***	
e2_5			.373	.046	8.027	***	
e2_3			.253	.034	7.325	***	
e2_6			.645	.071	9.074	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	108	810.422	444	.000	1.825
Saturated model	552	.000	0		
Independence model	46	5864.187	506	.000	11.589

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.043	.835	.795	.672
Saturated model	.000	1.000		
Independence model	.335	.174	.098	.159

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.862	.843	.932	.922	.932
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.877	.756	.817
Saturated model	.000	.000	.000

Model	PRATIO	PNFI	PCFI
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	366.422	290.504	450.167
Saturated model	.000	.000	.000
Independence model	5358.187	5115.009	5607.836

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.214	1.001	.794	1.230
Saturated model	.000	.000	.000	.000
Independence model	16.022	14.640	13.975	15.322

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.047	.042	.053	.785
Independence model	.170	.166	.174	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1026.422	1059.026		
Saturated model	1104.000	1270.642		
Independence model	5956.187	5970.074		

ECVI

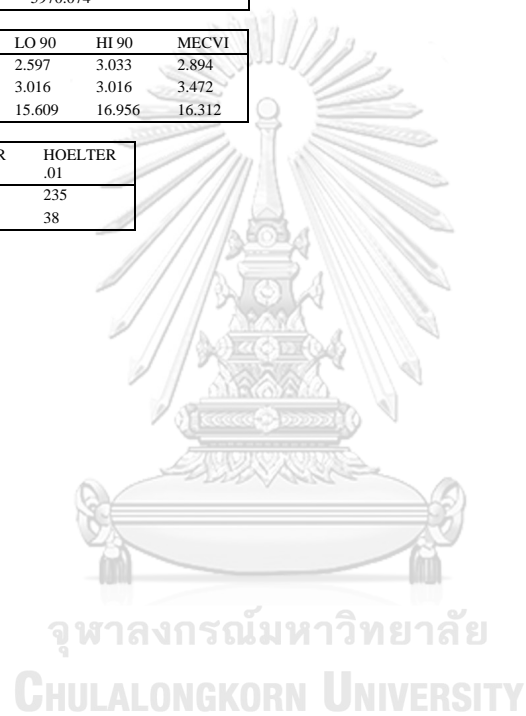
Model	ECVI	LO 90	HI 90	MECVI
Default model	2.804	2.597	3.033	2.894
Saturated model	3.016	3.016	3.016	3.472
Independence model	16.274	15.609	16.956	16.312

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Independence model	36	38

Execution time summary

Minimization:	.038
Miscellaneous:	.647
Bootstrap:	.000
Total:	.685



4. Factor loadings, variances, and covariances constrained equal

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 2:39:41 PM

Title

Amos baseline model for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 2:39 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (manu)

Your model contains the following variables (manu)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (manu)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (manu)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	3	0	0	0	24
Unlabeled	2	0	28	0	0	30
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)

The model is recursive.



Sample size = 184
 Variable Summary (service)
 Your model contains the following variables (service)

Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFuncn
 BAuthn
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (service)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (service)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	3	0	0	0	24
Unlabeled	2	0	28	0	0	30
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 84

Degrees of freedom (552 - 84): 468

Result (Default model)

Minimum was achieved

Chi-square = 864.818

Degrees of freedom = 468

Probability level = .000

manu (manu - Default model)

Estimates (manu - Default model)

Scalar Estimates (manu - Default model)

Maximum Likelihood Estimates

Regression Weights: (manu - Default model)



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			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.484	.036	13.317	***	pbcu
BAuthen	<--	SMEBE	.563	.043	13.119	***	pbau
BFunc	<--	SMEBE	.582	.039	15.092	***	pbpr
BReso	<--	SMEBE	.513	.048	10.742	***	
BAware	<--	SMEBE	.610	.043	14.225	***	pbaw
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.067	.066	16.107	***	p10
item22	<--	BFunc	1.087	.068	15.908	***	p9
item17	<--	BFunc	.695	.065	10.713	***	p8
item16	<--	BFunc	.607	.067	9.106	***	p7
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.076	.086	12.565	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.026	.085	12.024	***	p17
item35	<--	BAttent	1.035	.086	12.064	***	p16
item33	<--	BAttent	1.104	.086	12.902	***	p15
item9	<--	BAuthen	1.098	.087	12.649	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	1.004	.053	19.016	***	p5
P1_14	<--	BAware	.966	.051	19.011	***	p4
P1_13	<--	BAware	.911	.049	18.666	***	p3
P1_12	<--	BAware	.824	.052	15.776	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.134	.080	14.130	***	p22
P2_3	<--	BReso	1.169	.078	15.020	***	p21
P2_4	<--	BReso	1.315	.109	12.075	***	
P2_5	<--	BReso	1.223	.085	14.447	***	p20
P2_6	<--	BReso	1.032	.084	12.260	***	p19

Covariances: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.306	.031	9.754	***	v_e1617
e34	<-->	e35	.092	.024	3.776	***	v_e3435
e2_5	<-->	e2_6	.083	.023	3.526	***	v_e2_52_6

Variances: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.105	.033	3.161	.002	
res4			.135	.032	4.282	***	
res2			.143	.034	4.197	***	
res1			.296	.049	5.998	***	
res5			.105	.025	4.269	***	
e20			.351	.046	7.586	***	
e21			.436	.056	7.769	***	
e22			.332	.047	7.071	***	
e17			.439	.041	10.627	***	
e16			.590	.054	11.020	***	
e27			.562	.068	8.249	***	
e8			.361	.051	7.105	***	
e9			.380	.053	7.139	***	
e32			.346	.045	7.657	***	
e34			.441	.052	8.465	***	
e35			.448	.053	8.460	***	
e33			.324	.046	7.043	***	
e1_16			.299	.040	7.401	***	
e1_15			.294	.040	7.347	***	
e1_14			.375	.047	7.981	***	
e1_13			.355	.044	8.079	***	
e1_12			.461	.053	8.630	***	
e2_1			.480	.054	8.816	***	
e2_2			.361	.044	8.264	***	
e2_4			.317	.042	7.456	***	
e2_5			.361	.043	8.363	***	
e2_3			.263	.034	7.647	***	
e2_6			.633	.068	9.281	***	

service (service - Default model)

Estimates (service - Default model)

Scalar Estimates (service - Default model)

Maximum Likelihood Estimates

Regression Weights: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.484	.036	13.317	***	pbcu
BAuthen	<--	SMEBE	.563	.043	13.119	***	pbau
BFunc	<--	SMEBE	.582	.039	15.092	***	pbpr
BReso	<--	SMEBE	.535	.041	13.083	***	
BAware	<--	SMEBE	.610	.043	14.225	***	pbaw
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.067	.066	16.107	***	p10
item22	<--	BFunc	1.087	.068	15.908	***	p9

			Estimate	S.E.	C.R.	P	Label
item17	<--	BFunc	.695	.065	10.713	***	p8
item16	<--	BFunc	.607	.067	9.106	***	p7
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.076	.086	12.565	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.026	.085	12.024	***	p17
item35	<--	BAttent	1.035	.086	12.064	***	p16
item33	<--	BAttent	1.104	.086	12.902	***	p15
item9	<--	BAuthen	1.098	.087	12.649	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	1.004	.053	19.016	***	p5
P1_14	<--	BAware	.966	.051	19.011	***	p4
P1_13	<--	BAware	.911	.049	18.666	***	p3
P1_12	<--	BAware	.824	.052	15.776	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.134	.080	14.130	***	p22
P2_3	<--	BReso	1.169	.078	15.020	***	p21
P2_4	<--	BReso	1.252	.099	12.638	***	
P2_5	<--	BReso	1.223	.085	14.447	***	p20
P2_6	<--	BReso	1.032	.084	12.260	***	p19

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.306	.031	9.754	***	v_e1617
e34	<-->	e35	.092	.024	3.776	***	v_e3435
e2_5	<-->	e2_6	.083	.023	3.526	***	v_e2_52_6

Variances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.010	.015	.654	.513	
res4			.041	.016	2.660	.008	
res2			.052	.016	3.233	.001	
res1			.193	.032	6.132	***	
res5			.042	.012	3.450	***	
e20			.226	.028	7.994	***	
e21			.172	.024	7.145	***	
e22			.235	.030	7.765	***	
e17			.442	.041	10.848	***	
e16			.451	.041	10.955	***	
e27			.367	.042	8.714	***	
e8			.262	.033	8.030	***	
e9			.254	.032	7.886	***	
e32			.241	.030	8.011	***	
e34			.305	.036	8.516	***	
e35			.305	.036	8.490	***	
e33			.305	.038	8.078	***	
e1_16			.257	.032	8.009	***	
e1_15			.237	.030	7.864	***	
e1_14			.173	.023	7.379	***	
e1_13			.169	.022	7.577	***	
e1_12			.284	.033	8.612	***	
e2_1			.239	.028	8.553	***	
e2_2			.275	.033	8.439	***	
e2_4			.270	.033	8.116	***	
e2_5			.291	.034	8.539	***	
e2_3			.218	.027	8.042	***	
e2_6			.357	.039	9.054	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	84	864.818	468	.000	1.848
Saturated model	552	.000	0		
Independence model	46	5864.187	506	.000	11.589

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.063	.827	.797	.702
Saturated model	.000	1.000		
Independence model	.335	.174	.098	.159

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.853	.841	.926	.920	.926
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.925	.789	.856
Saturated model	.000	.000	.000

Model	PRATIO	PNFI	PCFI
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	396.818	318.070	483.383
Saturated model	.000	.000	.000
Independence model	5358.187	5115.009	5607.836

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.363	1.084	.869	1.321
Saturated model	.000	.000	.000	.000
Independence model	16.022	14.640	13.975	15.322

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.048	.043	.053	.726
Independence model	.170	.166	.174	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1032.818	1058.176		
Saturated model	1104.000	1270.642		
Independence model	5956.187	5970.074		

ECVI

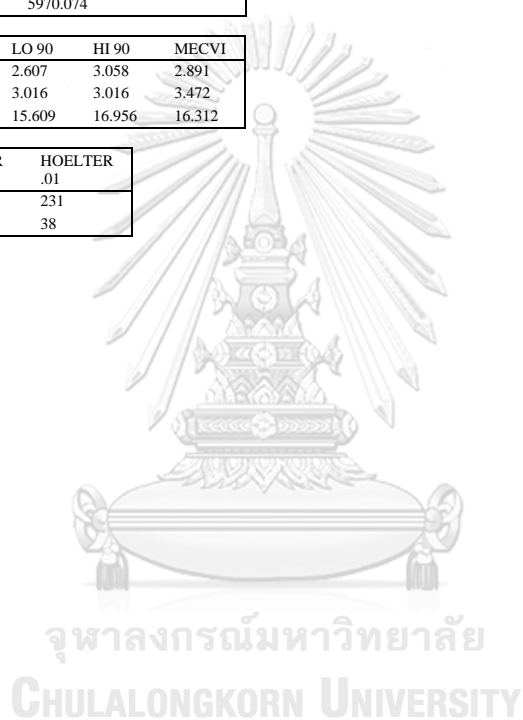
Model	ECVI	LO 90	HI 90	MECVI
Default model	2.822	2.607	3.058	2.891
Saturated model	3.016	3.016	3.016	3.472
Independence model	16.274	15.609	16.956	16.312

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	221	231
Independence model	36	38

Execution time summary

Minimization:	.000
Miscellaneous:	.726
Bootstrap:	.000
Total:	.726



5. Model 1 (b)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model for testing measurement model invariance of 3 smes with no equality constrained imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 2:48:07 PM

Title

Amos baseline model for testing measurement model invariance of 3 smes with no equality constrained imposed: Monday, November 26, 2018 2:48 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (trade)

Your model contains the following variables (trade)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (trade)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0
Unlabeled	23	3	28	0	0	54
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)

The model is recursive.



Sample size = 184
 Variable Summary (manufacturing)
 Your model contains the following variables (manufacturing)

Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunc
 BAuthn
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (manufacturing)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (manufacturing)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0
Unlabeled	23	3	28	0	0	54
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 108

Degrees of freedom (552 - 108): 444

Result (Default model)

Minimum was achieved

Chi-square = 800.979

Degrees of freedom = 444

Probability level = .000

trade (trade - Default model)

Estimates (trade - Default model)

Scalar Estimates (trade - Default model)

Maximum Likelihood Estimates

Regression Weights: (trade - Default model)



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			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.595	.057	10.360	***	
BAuthen	<--	SMEBE	.712	.059	12.123	***	
BFunc	<--	SMEBE	.654	.058	11.197	***	
BReso	<--	SMEBE	.376	.052	7.168	***	
BAware	<--	SMEBE	.648	.065	9.956	***	
item20	<--	BFunc	1.000				
item21	<--	BFunc	.916	.082	11.142	***	
item22	<--	BFunc	.855	.084	10.186	***	
item17	<--	BFunc	.746	.082	9.038	***	
item16	<--	BFunc	.576	.079	7.328	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.837	.088	9.561	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	.587	.090	6.512	***	
item35	<--	BAttent	.794	.097	8.184	***	
item33	<--	BAttent	.448	.098	4.580	***	
item9	<--	BAuthen	.875	.085	10.290	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.890	.070	12.657	***	
P1_14	<--	BAware	.750	.072	10.457	***	
P1_13	<--	BAware	.651	.068	9.566	***	
P1_12	<--	BAware	.552	.067	8.205	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.137	.156	7.304	***	
P2_3	<--	BReso	1.405	.176	7.969	***	
P2_4	<--	BReso	1.444	.181	7.982	***	
P2_5	<--	BReso	1.372	.180	7.619	***	
P2_6	<--	BReso	.768	.150	5.117	***	

Covariances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.161	.035	4.637	***	
e34	<-->	e35	.111	.035	3.150	.002	
e2_5	<-->	e2_6	.165	.043	3.849	***	

Variances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.021	.029	.712	.477	
res4			.090	.039	2.310	.021	
res2			.088	.029	3.044	.002	
res1			.279	.052	5.367	***	
res5			.101	.027	3.796	***	
e20			.285	.039	7.255	***	
e21			.284	.037	7.638	***	
e22			.348	.042	8.207	***	
e17			.386	.045	8.630	***	
e16			.405	.045	9.015	***	
e27			.296	.042	7.086	***	
e8			.423	.050	8.470	***	
e9			.363	.045	8.134	***	
e32			.285	.048	5.992	***	
e34			.400	.046	8.709	***	
e35			.377	.047	7.976	***	
e33			.569	.061	9.261	***	
e1_16			.272	.043	6.380	***	
e1_15			.275	.039	7.063	***	
e1_14			.391	.047	8.340	***	
e1_13			.382	.044	8.625	***	
e1_12			.411	.046	8.941	***	
e2_1			.437	.050	8.795	***	
e2_2			.349	.042	8.311	***	
e2_4			.307	.042	7.245	***	
e2_5			.395	.050	7.938	***	
e2_3			.295	.041	7.280	***	
e2_6			.593	.065	9.180	***	

manufacturing (manufacturing - Default model)

Estimates (manufacturing - Default model)

Scalar Estimates (manufacturing - Default model)

Maximum Likelihood Estimates

Regression Weights: (manufacturing - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.451	.057	7.850	***	
BAuthen	<--	SMEBE	.450	.065	6.951	***	
BFunc	<--	SMEBE	.501	.059	8.443	***	
BReso	<--	SMEBE	.499	.060	8.260	***	
BAware	<--	SMEBE	.572	.065	8.814	***	
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.165	.129	9.019	***	
item22	<--	BFunc	1.264	.130	9.703	***	

			Estimate	S.E.	C.R.	P	Label
item17	<--	BFunc	.567	.106	5.369	***	
item16	<--	BFunc	.442	.115	3.847	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.478	.202	7.304	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	.920	.128	7.181	***	
item35	<--	BAttent	.908	.128	7.078	***	
item33	<--	BAttent	1.167	.134	8.707	***	
item9	<--	BAuthen	1.358	.191	7.115	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.977	.077	12.674	***	
P1_14	<--	BAware	1.093	.085	12.855	***	
P1_13	<--	BAware	.835	.076	11.015	***	
P1_12	<--	BAware	.749	.080	9.405	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.151	.131	8.797	***	
P2_3	<--	BReso	1.186	.127	9.336	***	
P2_4	<--	BReso	1.294	.140	9.266	***	
P2_5	<--	BReso	1.187	.135	8.811	***	
P2_6	<--	BReso	.836	.130	6.425	***	

Covariances: (manufacturing - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.428	.058	7.441	***	
e34	<-->	e35	.155	.046	3.354	***	
e2_5	<-->	e2_6	.104	.042	2.477	.013	

Variances: (manufacturing - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.075	.027	2.797	.005	
res4			.146	.037	3.927	***	
res2			.136	.035	3.867	***	
res1			.306	.056	5.502	***	
res5			.111	.030	3.703	***	
e20			.373	.048	7.790	***	
e21			.415	.056	7.381	***	
e22			.286	.049	5.858	***	
e17			.538	.059	9.183	***	
e16			.712	.076	9.387	***	
e27			.593	.068	8.702	***	
e8			.306	.053	5.729	***	
e9			.367	.054	6.860	***	
e32			.336	.046	7.232	***	
e34			.485	.060	8.128	***	
e35			.496	.061	8.188	***	
e33			.293	.049	5.921	***	
e1_16			.298	.041	7.288	***	
e1_15			.288	.039	7.315	***	
e1_14			.337	.047	7.156	***	
e1_13			.362	.044	8.273	***	
e1_12			.473	.054	8.774	***	
e2_1			.475	.054	8.730	***	
e2_2			.355	.044	8.074	***	
e2_4			.319	.043	7.453	***	
e2_5			.373	.046	8.027	***	
e2_3			.253	.034	7.325	***	
e2_6			.645	.071	9.074	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	108	800.979	444	.000	1.804
Saturated model	552	.000	0		
Independence model	46	4708.648	506	.000	9.306

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.051	.840	.801	.676
Saturated model	.000	1.000		
Independence model	.294	.237	.167	.217

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.830	.806	.916	.903	.915
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.877	.728	.803
Saturated model	.000	.000	.000

Model	PRATIO	PNFI	PCFI
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	356.979	281.708	440.085
Saturated model	.000	.000	.000
Independence model	4202.648	3986.627	4425.977

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.188	.975	.770	1.202
Saturated model	.000	.000	.000	.000
Independence model	12.865	11.483	10.892	12.093

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.047	.042	.052	.837
Independence model	.151	.147	.155	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1016.979	1049.583		
Saturated model	1104.000	1270.642		
Independence model	4800.648	4814.535		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.779	2.573	3.006	2.868
Saturated model	3.016	3.016	3.016	3.472
Independence model	13.117	12.526	13.727	13.154

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	227	237
Independence model	45	47

Execution time summary

Minimization:	.015
Miscellaneous:	.618
Bootstrap:	.000
Total:	.633



6. Factor loadings, variances, and covariances constrained equal

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 2:51:21 PM

Title

Amos baseline model for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 2:51 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (manu)

Your model contains the following variables (manu)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (manu)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (manu)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	3	0	0	0	24
Unlabeled	2	0	28	0	0	30
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)

The model is recursive.



Sample size = 184
 Variable Summary (trade)
 Your model contains the following variables (trade)

Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFuncn
 BAuthn
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (trade)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	3	0	0	0	24
Unlabeled	2	0	28	0	0	30
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 84

Degrees of freedom (552 - 84): 468

Result (Default model)

Minimum was achieved

Chi-square = 879.866

Degrees of freedom = 468

Probability level = .000

manu (manu - Default model)

Estimates (manu - Default model)

Scalar Estimates (manu - Default model)

Maximum Likelihood Estimates

Regression Weights: (manu - Default model)



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			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.492	.041	12.039	***	pbcu
BAuthen	<--	SMEBE	.617	.044	13.917	***	pbau
BFunc	<--	SMEBE	.590	.042	14.064	***	pbpr
BReso	<--	SMEBE	.479	.050	9.512	***	
BAware	<--	SMEBE	.593	.046	13.019	***	pbaw
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.010	.071	14.192	***	p10
item22	<--	BFunc	1.021	.071	14.312	***	p9
item17	<--	BFunc	.651	.065	9.949	***	p8
item16	<--	BFunc	.519	.067	7.768	***	p7
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.040	.081	12.849	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	.804	.081	9.889	***	p17
item35	<--	BAttent	.908	.085	10.652	***	p16
item33	<--	BAttent	.875	.084	10.477	***	p15
item9	<--	BAuthen	1.017	.079	12.868	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.940	.053	17.731	***	p5
P1_14	<--	BAware	.931	.056	16.526	***	p4
P1_13	<--	BAware	.747	.052	14.469	***	p3
P1_12	<--	BAware	.651	.053	12.348	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.152	.102	11.343	***	p22
P2_3	<--	BReso	1.278	.105	12.142	***	p21
P2_4	<--	BReso	1.369	.128	10.721	***	
P2_5	<--	BReso	1.280	.110	11.607	***	p20
P2_6	<--	BReso	.811	.099	8.170	***	p19

Covariances: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.299	.033	9.089	***	v_e1617
e34	<-->	e35	.102	.028	3.648	***	v_e3435
e2_5	<-->	e2_6	.133	.030	4.447	***	v_e2_52_6

Variances: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.099	.036	2.758	.006	
res4			.180	.041	4.342	***	
res2			.155	.038	4.130	***	
res1			.364	.059	6.190	***	
res5			.104	.025	4.101	***	
e20			.342	.047	7.307	***	
e21			.439	.056	7.793	***	
e22			.340	.047	7.187	***	
e17			.433	.042	10.325	***	
e16			.583	.054	10.785	***	
e27			.563	.069	8.127	***	
e8			.360	.051	7.017	***	
e9			.393	.053	7.363	***	
e32			.319	.048	6.694	***	
e34			.463	.053	8.722	***	
e35			.449	.054	8.322	***	
e33			.354	.047	7.589	***	
e1_16			.279	.041	6.846	***	
e1_15			.278	.039	7.159	***	
e1_14			.365	.047	7.775	***	
e1_13			.374	.044	8.454	***	
e1_12			.484	.054	8.921	***	
e2_1			.488	.055	8.859	***	
e2_2			.366	.044	8.304	***	
e2_4			.308	.042	7.340	***	
e2_5			.376	.045	8.438	***	
e2_3			.246	.034	7.214	***	
e2_6			.672	.070	9.653	***	

trade (trade - Default model)

Estimates (trade - Default model)

Scalar Estimates (trade - Default model)

Maximum Likelihood Estimates

Regression Weights: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.492	.041	12.039	***	pbcu
BAuthen	<--	SMEBE	.617	.044	13.917	***	pbau
BFunc	<--	SMEBE	.590	.042	14.064	***	pbpr
BReso	<--	SMEBE	.390	.044	8.840	***	
BAware	<--	SMEBE	.593	.046	13.019	***	pbaw
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.010	.071	14.192	***	p10
item22	<--	BFunc	1.021	.071	14.312	***	p9

			Estimate	S.E.	C.R.	P	Label
item17	<--	BFunc	.651	.065	9.949	***	p8
item16	<--	BFunc	.519	.067	7.768	***	p7
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.040	.081	12.849	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	.804	.081	9.889	***	p17
item35	<--	BAttent	.908	.085	10.652	***	p16
item33	<--	BAttent	.875	.084	10.477	***	p15
item9	<--	BAuthen	1.017	.079	12.868	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.940	.053	17.731	***	p5
P1_14	<--	BAware	.931	.056	16.526	***	p4
P1_13	<--	BAware	.747	.052	14.469	***	p3
P1_12	<--	BAware	.651	.053	12.348	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.152	.102	11.343	***	p22
P2_3	<--	BReso	1.278	.105	12.142	***	p21
P2_4	<--	BReso	1.369	.138	9.925	***	
P2_5	<--	BReso	1.280	.110	11.607	***	p20
P2_6	<--	BReso	.811	.099	8.170	***	p19

Covariances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.299	.033	9.089	***	v_e1617
e34	<-->	e35	.102	.028	3.648	***	v_e3435
e2_5	<-->	e2_6	.133	.030	4.447	***	v_e2_52_6

Variances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.020	.023	.847	.397	
res4			.083	.029	2.854	.004	
res2			.076	.025	3.031	.002	
res1			.237	.043	5.560	***	
res5			.109	.024	4.600	***	
e20			.305	.040	7.704	***	
e21			.274	.037	7.433	***	
e22			.330	.042	7.778	***	
e17			.518	.049	10.580	***	
e16			.521	.048	10.764	***	
e27			.322	.041	7.822	***	
e8			.407	.050	8.118	***	
e9			.348	.044	7.919	***	
e32			.338	.046	7.405	***	
e34			.375	.043	8.634	***	
e35			.375	.045	8.287	***	
e33			.544	.063	8.615	***	
e1_16			.304	.042	7.248	***	
e1_15			.284	.039	7.373	***	
e1_14			.379	.048	7.964	***	
e1_13			.376	.044	8.533	***	
e1_12			.407	.046	8.841	***	
e2_1			.432	.049	8.759	***	
e2_2			.339	.041	8.188	***	
e2_4			.315	.043	7.318	***	
e2_5			.384	.045	8.466	***	
e2_3			.315	.041	7.736	***	
e2_6			.567	.059	9.575	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	84	879.866	468	.000	1.880
Saturated model	552	.000	0		
Independence model	46	4708.648	506	.000	9.306

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.067	.826	.795	.700
Saturated model	.000	1.000		
Independence model	.294	.237	.167	.217

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.813	.798	.903	.894	.902
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.925	.752	.834
Saturated model	.000	.000	.000

Model	PRATIO	PNFI	PCFI
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	411.866	332.133	499.406
Saturated model	.000	.000	.000
Independence model	4202.648	3986.627	4425.977

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.404	1.125	.907	1.364
Saturated model	.000	.000	.000	.000
Independence model	12.865	11.483	10.892	12.093

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.049	.044	.054	.619
Independence model	.151	.147	.155	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1047.866	1073.225		
Saturated model	1104.000	1270.642		
Independence model	4800.648	4814.535		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.863	2.645	3.102	2.932
Saturated model	3.016	3.016	3.016	3.472
Independence model	13.117	12.526	13.727	13.154

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	218	227
Independence model	45	47

Execution time summary

Minimization:	.000
Miscellaneous:	.614
Bootstrap:	.000
Total:	.614



7. Model 1 (c)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model for testing measurement model invariance of 3 smes with no equality constrained imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 2:56:31 PM

Title

Amos baseline model for testing measurement model invariance of 3 smes with no equality constrained imposed: Monday, November 26, 2018 2:56 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (trade)

Your model contains the following variables (trade)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (trade)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0
Unlabeled	23	3	28	0	0	54
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)

The model is recursive.



Sample size = 184
 Variable Summary (service)
 Your model contains the following variables (service)

Observed, endogenous variables

- item20
- item21
- item22
- item17
- item16
- item27
- item8
- item9
- item32
- item34
- item35
- item33
- P1_16
- P1_15
- P1_14
- P1_13
- P1_12
- P2_1
- P2_2
- P2_3
- P2_4
- P2_5
- P2_6

Unobserved, endogenous variables

- BFunc
- BAuthen
- BAttent
- BAware
- BReso

Unobserved, exogenous variables

- e20
- e21
- e22
- e17
- e16
- e27
- e8
- e9
- e32
- e34
- e35
- e33
- SMEBE
- res3
- res4
- res2
- e1_16
- e1_15
- e1_14
- e1_13
- e1_12
- res1
- e2_1
- e2_2
- e2_4
- e2_5
- e2_3
- res5
- e2_6

Variable counts (service)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (service)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0
Unlabeled	23	3	28	0	0	54
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 108

Degrees of freedom (552 - 108): 444

Result (Default model)

Minimum was achieved

Chi-square = 839.382

Degrees of freedom = 444

Probability level = .000

trade (trade - Default model)

Estimates (trade - Default model)

Scalar Estimates (trade - Default model)

Maximum Likelihood Estimates

Regression Weights: (trade - Default model)



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			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.595	.057	10.360	***	
BAuthen	<--	SMEBE	.712	.059	12.123	***	
BFunc	<--	SMEBE	.654	.058	11.197	***	
BReso	<--	SMEBE	.376	.052	7.168	***	
BAware	<--	SMEBE	.648	.065	9.956	***	
item20	<--	BFunc	1.000				
item21	<--	BFunc	.916	.082	11.142	***	
item22	<--	BFunc	.855	.084	10.186	***	
item17	<--	BFunc	.746	.082	9.038	***	
item16	<--	BFunc	.576	.079	7.328	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.837	.088	9.561	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	.587	.090	6.512	***	
item35	<--	BAttent	.794	.097	8.184	***	
item33	<--	BAttent	.448	.098	4.580	***	
item9	<--	BAuthen	.875	.085	10.290	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.890	.070	12.657	***	
P1_14	<--	BAware	.750	.072	10.457	***	
P1_13	<--	BAware	.651	.068	9.566	***	
P1_12	<--	BAware	.552	.067	8.205	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.137	.156	7.304	***	
P2_3	<--	BReso	1.405	.176	7.969	***	
P2_4	<--	BReso	1.444	.181	7.982	***	
P2_5	<--	BReso	1.372	.180	7.619	***	
P2_6	<--	BReso	.768	.150	5.117	***	

Covariances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.161	.035	4.637	***	
e34	<-->	e35	.111	.035	3.150	.002	
e2_5	<-->	e2_6	.165	.043	3.849	***	

Variances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.021	.029	.712	.477	
res4			.090	.039	2.310	.021	
res2			.088	.029	3.044	.002	
res1			.279	.052	5.367	***	
res5			.101	.027	3.796	***	
e20			.285	.039	7.255	***	
e21			.284	.037	7.638	***	
e22			.348	.042	8.207	***	
e17			.386	.045	8.630	***	
e16			.405	.045	9.015	***	
e27			.296	.042	7.086	***	
e8			.423	.050	8.470	***	
e9			.363	.045	8.134	***	
e32			.285	.048	5.992	***	
e34			.400	.046	8.709	***	
e35			.377	.047	7.976	***	
e33			.569	.061	9.261	***	
e1_16			.272	.043	6.380	***	
e1_15			.275	.039	7.063	***	
e1_14			.391	.047	8.340	***	
e1_13			.382	.044	8.625	***	
e1_12			.411	.046	8.941	***	
e2_1			.437	.050	8.795	***	
e2_2			.349	.042	8.311	***	
e2_4			.307	.042	7.245	***	
e2_5			.395	.050	7.938	***	
e2_3			.295	.041	7.280	***	
e2_6			.593	.065	9.180	***	

service (service - Default model)

Estimates (service - Default model)

Scalar Estimates (service - Default model)

Maximum Likelihood Estimates

Regression Weights: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.505	.048	10.481	***	
BAuthen	<--	SMEBE	.642	.057	11.199	***	
BFunc	<--	SMEBE	.628	.051	12.234	***	
BReso	<--	SMEBE	.552	.049	11.340	***	
BAware	<--	SMEBE	.637	.058	10.969	***	
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.031	.076	13.540	***	
item22	<--	BFunc	1.008	.081	12.510	***	

			Estimate	S.E.	C.R.	P	Label
item17	<--	BFunc	.808	.082	9.908	***	
item16	<--	BFunc	.724	.080	9.079	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.900	.088	10.197	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.086	.112	9.676	***	
item35	<--	BAttent	1.110	.113	9.805	***	
item33	<--	BAttent	1.056	.112	9.416	***	
item9	<--	BAuthen	.986	.092	10.694	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	1.028	.072	14.294	***	
P1_14	<--	BAware	.912	.063	14.480	***	
P1_13	<--	BAware	.950	.064	14.960	***	
P1_12	<--	BAware	.869	.069	12.628	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.115	.099	11.257	***	
P2_3	<--	BReso	1.148	.096	11.971	***	
P2_4	<--	BReso	1.251	.105	11.864	***	
P2_5	<--	BReso	1.236	.106	11.647	***	
P2_6	<--	BReso	1.132	.106	10.688	***	

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.201	.032	6.256	***	
e34	<-->	e35	.064	.028	2.301	.021	
e2_5	<-->	e2_6	.075	.028	2.656	.008	

Variances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.011	.018	.649	.517	
res4			.040	.015	2.609	.009	
res2			.050	.016	3.052	.002	
res1			.190	.033	5.741	***	
res5			.043	.012	3.455	***	
e20			.223	.028	7.905	***	
e21			.178	.024	7.311	***	
e22			.243	.030	8.019	***	
e17			.343	.039	8.869	***	
e16			.351	.039	9.013	***	
e27			.355	.042	8.437	***	
e8			.263	.032	8.309	***	
e9			.255	.032	7.919	***	
e32			.245	.030	8.081	***	
e34			.286	.036	7.843	***	
e35			.282	.036	7.756	***	
e33			.311	.038	8.277	***	
e1_16			.257	.032	7.994	***	
e1_15			.239	.031	7.776	***	
e1_14			.177	.023	7.664	***	
e1_13			.164	.022	7.329	***	
e1_12			.278	.033	8.475	***	
e2_1			.238	.028	8.534	***	
e2_2			.275	.033	8.457	***	
e2_4			.273	.033	8.152	***	
e2_5			.289	.035	8.189	***	
e2_3			.220	.027	8.086	***	
e2_6			.345	.040	8.564	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	108	839.382	444	.000	1.890
Saturated model	552	.000	0		
Independence model	46	5780.020	506	.000	11.423

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.043	.835	.795	.672
Saturated model	.000	1.000		
Independence model	.324	.169	.094	.155

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.855	.835	.926	.915	.925
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.877	.750	.812
Saturated model	.000	.000	.000

Model	PRATIO	PNFI	PCFI
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	395.382	317.512	481.056
Saturated model	.000	.000	.000
Independence model	5274.020	5032.699	5521.815

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.293	1.080	.868	1.314
Saturated model	.000	.000	.000	.000
Independence model	15.792	14.410	13.751	15.087

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.049	.044	.054	.579
Independence model	.169	.165	.173	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1055.382	1087.985		
Saturated model	1104.000	1270.642		
Independence model	5872.020	5885.907		

ECVI

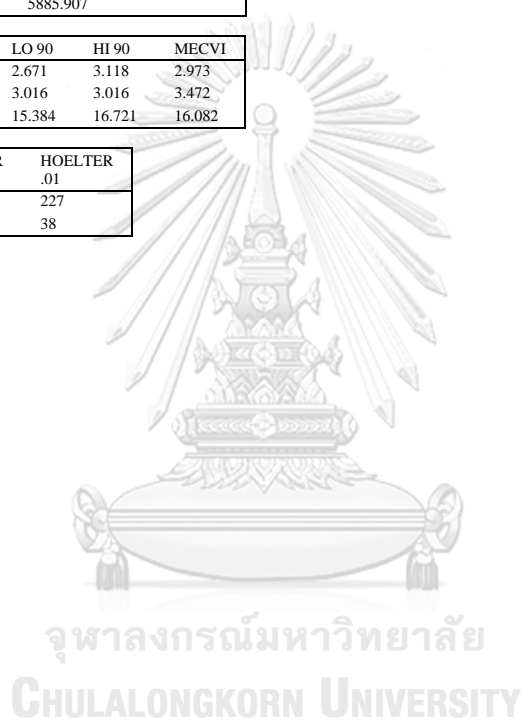
Model	ECVI	LO 90	HI 90	MECVI
Default model	2.884	2.671	3.118	2.973
Saturated model	3.016	3.016	3.016	3.472
Independence model	16.044	15.384	16.721	16.082

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	217	227
Independence model	37	38

Execution time summary

Minimization:	.016
Miscellaneous:	.555
Bootstrap:	.000
Total:	.571



8. Factor loadings, variances, and covariances constrained equal

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 3:02:07 PM

Title

Amos baseline model for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 3:02 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (service)

Your model contains the following variables (service)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (service)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (service)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	3	0	0	0	24
Unlabeled	2	0	28	0	0	30
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)

The model is recursive.



Sample size = 184
 Variable Summary (trade)
 Your model contains the following variables (trade)

Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunct
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (trade)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	3	0	0	0	24
Unlabeled	2	0	28	0	0	30
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 84

Degrees of freedom (552 - 84): 468

Result (Default model)

Minimum was achieved

Chi-square = 896.506

Degrees of freedom = 468

Probability level = .000

service (service - Default model)

Estimates (service - Default model)

Scalar Estimates (service - Default model)

Maximum Likelihood Estimates

Regression Weights: (service - Default model)



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			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.512	.037	13.785	***	pbcu
BAuthen	<--	SMEBE	.671	.041	16.309	***	pbau
BFunc	<--	SMEBE	.639	.038	16.623	***	pbpr
BReso	<--	SMEBE	.525	.041	12.817	***	
BAware	<--	SMEBE	.631	.043	14.645	***	pbaw
item20	<--	BFunc	1.000				
item21	<--	BFunc	.981	.056	17.445	***	p10
item22	<--	BFunc	.945	.059	16.118	***	p9
item17	<--	BFunc	.780	.058	13.358	***	p8
item16	<--	BFunc	.662	.056	11.728	***	p7
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.864	.062	14.034	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	.922	.077	11.935	***	p17
item35	<--	BAttent	1.021	.080	12.686	***	p16
item33	<--	BAttent	.866	.079	10.961	***	p15
item9	<--	BAuthen	.930	.062	14.901	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.975	.052	18.860	***	p5
P1_14	<--	BAware	.850	.048	17.899	***	p4
P1_13	<--	BAware	.846	.047	17.983	***	p3
P1_12	<--	BAware	.743	.049	15.031	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.122	.085	13.249	***	p22
P2_3	<--	BReso	1.218	.086	14.151	***	p21
P2_4	<--	BReso	1.285	.103	12.431	***	
P2_5	<--	BReso	1.285	.093	13.754	***	p20
P2_6	<--	BReso	1.032	.089	11.569	***	p19

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.184	.023	7.820	***	v_e1617
e34	<-->	e35	.063	.022	2.895	.004	v_e3435
e2_5	<-->	e2_6	.099	.024	4.138	***	v_e2_52_6

Variances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.008	.019	.446	.655	
res4			.051	.018	2.855	.004	
res2			.053	.017	3.092	.002	
res1			.226	.036	6.253	***	
res5			.042	.012	3.536	***	
e20			.220	.028	7.783	***	
e21			.179	.024	7.440	***	
e22			.247	.030	8.161	***	
e17			.327	.033	9.908	***	
e16			.338	.033	10.140	***	
e27			.353	.042	8.348	***	
e8			.264	.032	8.347	***	
e9			.257	.032	8.048	***	
e32			.238	.031	7.711	***	
e34			.293	.035	8.476	***	
e35			.280	.035	8.103	***	
e33			.323	.038	8.588	***	
e1_16			.250	.032	7.723	***	
e1_15			.231	.030	7.668	***	
e1_14			.176	.023	7.662	***	
e1_13			.172	.023	7.640	***	
e1_12			.289	.033	8.697	***	
e2_1			.241	.028	8.590	***	
e2_2			.277	.033	8.498	***	
e2_4			.268	.033	8.071	***	
e2_5			.299	.035	8.579	***	
e2_3			.216	.027	7.930	***	
e2_6			.373	.041	9.209	***	

trade (trade - Default model)

Estimates (trade - Default model)

Scalar Estimates (trade - Default model)

Maximum Likelihood Estimates

Regression Weights: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.512	.037	13.785	***	pbcu
BAuthen	<--	SMEBE	.671	.041	16.309	***	pbau
BFunc	<--	SMEBE	.639	.038	16.623	***	pbpr
BReso	<--	SMEBE	.416	.042	9.912	***	
BAware	<--	SMEBE	.631	.043	14.645	***	pbaw
item20	<--	BFunc	1.000				
item21	<--	BFunc	.981	.056	17.445	***	p10
item22	<--	BFunc	.945	.059	16.118	***	p9

			Estimate	S.E.	C.R.	P	Label
item17	<--	BFunc	.780	.058	13.358	***	p8
item16	<--	BFunc	.662	.056	11.728	***	p7
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.864	.062	14.034	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	.922	.077	11.935	***	p17
item35	<--	BAttent	1.021	.080	12.686	***	p16
item33	<--	BAttent	.866	.079	10.961	***	p15
item9	<--	BAuthen	.930	.062	14.901	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.975	.052	18.860	***	p5
P1_14	<--	BAware	.850	.048	17.899	***	p4
P1_13	<--	BAware	.846	.047	17.983	***	p3
P1_12	<--	BAware	.743	.049	15.031	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.122	.085	13.249	***	p22
P2_3	<--	BReso	1.218	.086	14.151	***	p21
P2_4	<--	BReso	1.364	.126	10.789	***	
P2_5	<--	BReso	1.285	.093	13.754	***	p20
P2_6	<--	BReso	1.032	.089	11.569	***	p19

Covariances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.184	.023	7.820	***	v_e1617
e34	<-->	e35	.063	.022	2.895	.004	v_e3435
e2_5	<-->	e2_6	.099	.024	4.138	***	v_e2_52_6

Variances: (trade - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.034	.027	1.272	.203	
res4	.089	.027	3.309	***	
res2	.071	.024	2.897	.004	
res1	.218	.040	5.486	***	
res5	.101	.021	4.753	***	
e20	.297	.039	7.702	***	
e21	.287	.037	7.720	***	
e22	.340	.042	8.129	***	
e17	.406	.041	9.925	***	
e16	.421	.041	10.193	***	
e27	.307	.042	7.359	***	
e8	.417	.049	8.463	***	
e9	.354	.044	7.998	***	
e32	.356	.046	7.761	***	
e34	.346	.042	8.290	***	
e35	.338	.043	7.876	***	
e33	.522	.060	8.680	***	
e1_16	.313	.042	7.438	***	
e1_15	.286	.039	7.349	***	
e1_14	.388	.046	8.349	***	
e1_13	.371	.045	8.308	***	
e1_12	.403	.046	8.669	***	
e2_1	.435	.050	8.784	***	
e2_2	.343	.041	8.295	***	
e2_4	.322	.043	7.415	***	
e2_5	.373	.044	8.454	***	
e2_3	.334	.042	8.026	***	
e2_6	.553	.059	9.339	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	84	896.506	468	.000	1.916
Saturated model	552	.000	0		
Independence model	46	5780.020	506	.000	11.423

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.064	.823	.791	.698
Saturated model	.000	1.000		
Independence model	.324	.169	.094	.155

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.845	.832	.919	.912	.919
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.925	.781	.850
Saturated model	.000	.000	.000

Model	PRATIO	PNFI	PCFI
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	428.506	347.697	517.110
Saturated model	.000	.000	.000
Independence model	5274.020	5032.699	5521.815

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.449	1.171	.950	1.413
Saturated model	.000	.000	.000	.000
Independence model	15.792	14.410	13.751	15.087

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.050	.045	.055	.491
Independence model	.169	.165	.173	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1064.506	1089.864		
Saturated model	1104.000	1270.642		
Independence model	5872.020	5885.907		

ECVI

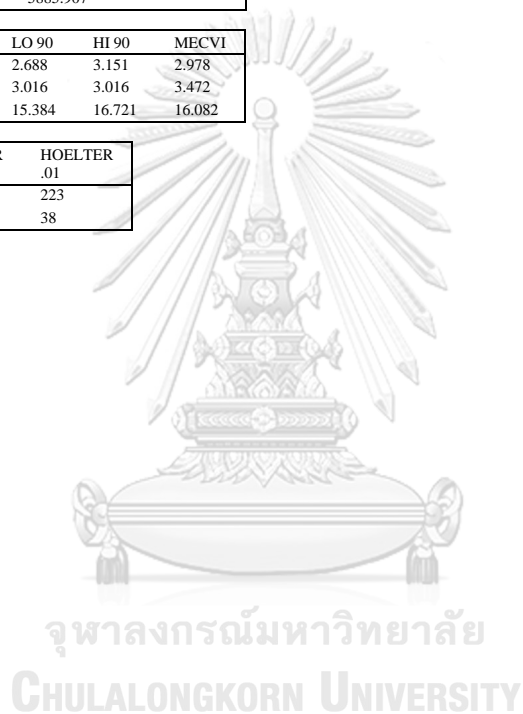
Model	ECVI	LO 90	HI 90	MECVI
Default model	2.908	2.688	3.151	2.978
Saturated model	3.016	3.016	3.016	3.472
Independence model	16.044	15.384	16.721	16.082

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	214	223
Independence model	37	38

Execution time summary

Minimization:	.000
Miscellaneous:	.533
Bootstrap:	.000
Total:	.533



9. Factor loadings constrained equal

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 3:06:41 PM

Title

Amos baseline model factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 3:06 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (manu)

Your model contains the following variables (manu)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (manu)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (manu)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	0	0	0	0	21
Unlabeled	2	3	28	0	0	33
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)



The model is recursive.
 Sample size = 184
 Variable Summary (service)
 Your model contains the following variables (service)
 Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunc
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (service)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (service)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	0	0	0	0	21
Unlabeled	2	3	28	0	0	33
Total	56	3	29	0	0	88

Group number 3 (Group number 3)

Notes for Group (Group number 3)

The model is recursive.

Sample size = 184

Variable Summary (trade)

Your model contains the following variables (trade)

Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34



item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunc
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33

SMEBE

res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (trade)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	0	0	0	0	21
Unlabeled	2	3	28	0	0	33
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 828

Number of distinct parameters to be estimated: 120

Degrees of freedom (828 - 120): 708

Result (Default model)

Minimum was achieved

Chi-square = 1327.116

Degrees of freedom = 708

Probability level = .000

manu (manu - Default model)

Estimates (manu - Default model)

Scalar Estimates (manu - Default model)

Maximum Likelihood Estimates

Regression Weights: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<---	SMEBE	.487	.031	15.715	***	pbcu
BAuthen	<---	SMEBE	.617	.035	17.687	***	pbau
BFunc	<---	SMEBE	.607	.032	18.835	***	pbpr
BReso	<---	SMEBE	.500	.045	11.115	***	
BAware	<---	SMEBE	.611	.036	17.129	***	pbaw
item20	<---	BFunc	1.000				
item21	<---	BFunc	1.015	.052	19.527	***	p10
item22	<---	BFunc	1.013	.053	18.993	***	p9
item17	<---	BFunc	.733	.051	14.419	***	p8
item16	<---	BFunc	.627	.051	12.285	***	p7
item27	<---	BAuthen	1.000				



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			Estimate	S.E.	C.R.	P	Label
item8	<--	BAuthen	.977	.061	16.135	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	.946	.068	13.924	***	p17
item35	<--	BAttent	1.009	.070	14.412	***	p16
item33	<--	BAttent	.981	.069	14.229	***	p15
item9	<--	BAuthen	1.004	.061	16.500	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.976	.043	22.663	***	p5
P1_14	<--	BAware	.911	.042	21.756	***	p4
P1_13	<--	BAware	.844	.040	21.027	***	p3
P1_12	<--	BAware	.746	.042	17.694	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.135	.072	15.832	***	p22
P2_3	<--	BReso	1.215	.072	16.896	***	p21
P2_4	<--	BReso	1.343	.107	12.534	***	
P2_5	<--	BReso	1.265	.077	16.333	***	p20
P2_6	<--	BReso	.976	.074	13.164	***	p19

Covariances: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.422	.059	7.157	***	
e34	<-->	e35	.135	.046	2.959	.003	
e2_5	<-->	e2_6	.096	.042	2.300	.021	

Variances: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.107	.036	2.933	.003	
res4			.149	.034	4.349	***	
res2			.149	.036	4.178	***	
res1			.327	.052	6.260	***	
res5			.104	.024	4.389	***	
e20			.344	.046	7.407	***	
e21			.438	.056	7.844	***	
e22			.342	.047	7.328	***	
e17			.529	.060	8.831	***	
e16			.709	.077	9.155	***	
e27			.556	.069	8.068	***	
e8			.377	.051	7.392	***	
e9			.395	.054	7.374	***	
e32			.332	.046	7.302	***	
e34			.472	.059	8.015	***	
e35			.470	.060	7.827	***	
e33			.341	.046	7.436	***	
e1_16			.287	.040	7.152	***	
e1_15			.287	.039	7.271	***	
e1_14			.382	.047	8.083	***	
e1_13			.362	.044	8.220	***	
e1_12			.468	.053	8.760	***	
e2_1			.485	.055	8.855	***	
e2_2			.365	.044	8.335	***	
e2_4			.311	.042	7.395	***	
e2_5			.361	.045	7.970	***	
e2_3			.257	.034	7.530	***	
e2_6			.641	.071	8.978	***	

service (service - Default model)

Estimates (service - Default model)

Scalar Estimates (service - Default model)

Maximum Likelihood Estimates

Regression Weights: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.487	.031	15.715	***	pbcu
BAuthen	<--	SMEBE	.617	.035	17.687	***	pbau
BFunc	<--	SMEBE	.607	.032	18.835	***	pbpr
BReso	<--	SMEBE	.521	.037	13.967	***	
BAware	<--	SMEBE	.611	.036	17.129	***	pbaw
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.015	.052	19.527	***	p10
item22	<--	BFunc	1.013	.053	18.993	***	p9
item17	<--	BFunc	.733	.051	14.419	***	p8
item16	<--	BFunc	.627	.051	12.285	***	p7
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.977	.061	16.135	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	.946	.068	13.924	***	p17
item35	<--	BAttent	1.009	.070	14.412	***	p16
item33	<--	BAttent	.981	.069	14.229	***	p15
item9	<--	BAuthen	1.004	.061	16.500	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.976	.043	22.663	***	p5

			Estimate	S.E.	C.R.	P	Label
P1_14	<--	BAware	.911	.042	21.756	***	p4
P1_13	<--	BAware	.844	.040	21.027	***	p3
P1_12	<--	BAware	.746	.042	17.694	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.135	.072	15.832	***	p22
P2_3	<--	BReso	1.215	.072	16.896	***	p21
P2_4	<--	BReso	1.275	.098	13.051	***	
P2_5	<--	BReso	1.265	.077	16.333	***	p20
P2_6	<--	BReso	.976	.074	13.164	***	p19

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.208	.032	6.450	***	
e34	<-->	e35	.073	.028	2.665	.008	
e2_5	<-->	e2_6	.080	.028	2.848	.004	

Variances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.008	.017	.470	.638	
res4			.050	.017	2.900	.004	
res2			.052	.017	3.178	.001	
res1			.218	.034	6.417	***	
res5			.043	.012	3.610	***	
e20			.222	.028	7.892	***	
e21			.176	.024	7.359	***	
e22			.241	.030	7.987	***	
e17			.349	.039	9.011	***	
e16			.360	.039	9.166	***	
e27			.357	.042	8.547	***	
e8			.263	.032	8.161	***	
e9			.256	.032	8.007	***	
e32			.238	.030	7.823	***	
e34			.297	.036	8.211	***	
e35			.290	.036	8.000	***	
e33			.310	.037	8.320	***	
e1_16			.252	.032	7.823	***	
e1_15			.231	.030	7.756	***	
e1_14			.172	.023	7.427	***	
e1_13			.175	.023	7.763	***	
e1_12			.292	.033	8.736	***	
e2_1			.242	.028	8.598	***	
e2_2			.276	.033	8.478	***	
e2_4			.267	.033	8.080	***	
e2_5			.286	.035	8.218	***	
e2_3			.216	.027	7.956	***	
e2_6			.366	.041	8.894	***	

trade (trade - Default model)

Estimates (trade - Default model)

Scalar Estimates (trade - Default model)

Maximum Likelihood Estimates

Regression Weights: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.487	.031	15.715	***	pbcu
BAuthen	<--	SMEBE	.617	.035	17.687	***	pbau
BFunct	<--	SMEBE	.607	.032	18.835	***	pbpr
BReso	<--	SMEBE	.410	.040	10.212	***	
BAware	<--	SMEBE	.611	.036	17.129	***	pbaw
item20	<--	BFunct	1.000				
item21	<--	BFunct	1.015	.052	19.527	***	p10
item22	<--	BFunct	1.013	.053	18.993	***	p9
item17	<--	BFunct	.733	.051	14.419	***	p8
item16	<--	BFunct	.627	.051	12.285	***	p7
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.977	.061	16.135	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	.946	.068	13.924	***	p17
item35	<--	BAttent	1.009	.070	14.412	***	p16
item33	<--	BAttent	.981	.069	14.229	***	p15
item9	<--	BAuthen	1.004	.061	16.500	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.976	.043	22.663	***	p5
P1_14	<--	BAware	.911	.042	21.756	***	p4
P1_13	<--	BAware	.844	.040	21.027	***	p3
P1_12	<--	BAware	.746	.042	17.694	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.135	.072	15.832	***	p22
P2_3	<--	BReso	1.215	.072	16.896	***	p21
P2_4	<--	BReso	1.357	.121	11.233	***	
P2_5	<--	BReso	1.265	.077	16.333	***	p20

	Estimate	S.E.	C.R.	P	Label
P2_6 <-- BReso	.976	.074	13.164	***	p19

Covariances: (trade - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.164	.035	4.728	***	
e34 <--> e35	.040	.033	1.202	.229	
e2_5 <--> e2_6	.143	.042	3.378	***	

Variances: (trade - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.034	.024	1.409	.159	
res4	.098	.027	3.630	***	
res2	.069	.023	2.958	.003	
res1	.213	.038	5.569	***	
res5	.105	.021	4.950	***	
e20	.303	.039	7.832	***	
e21	.286	.037	7.668	***	
e22	.335	.042	7.964	***	
e17	.396	.045	8.860	***	
e16	.403	.045	9.049	***	
e27	.323	.042	7.729	***	
e8	.406	.049	8.229	***	
e9	.346	.044	7.860	***	
e32	.374	.047	7.949	***	
e34	.321	.043	7.501	***	
e35	.327	.045	7.307	***	
e33	.507	.060	8.443	***	
e1_16	.318	.042	7.548	***	
e1_15	.288	.039	7.441	***	
e1_14	.383	.047	8.189	***	
e1_13	.371	.044	8.348	***	
e1_12	.403	.046	8.691	***	
e2_1	.431	.049	8.759	***	
e2_2	.340	.041	8.228	***	
e2_4	.318	.043	7.323	***	
e2_5	.395	.049	8.107	***	
e2_3	.327	.041	7.969	***	
e2_6	.579	.065	8.927	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	120	1327.116	708	.000	1.874
Saturated model	828	.000	0		
Independence model	69	8176.428	759	.000	10.773

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.070	.824	.794	.704
Saturated model	.000	1.000		
Independence model	.318	.189	.115	.173

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.838	.826	.917	.911	.917
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.933	.781	.855
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	619.116	520.365	725.668
Saturated model	.000	.000	.000
Independence model	7417.428	7130.199	7711.142

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.417	1.128	.948	1.322
Saturated model	.000	.000	.000	.000
Independence model	14.893	13.511	12.988	14.046

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.040	.037	.043	1.000
Independence model	.133	.131	.136	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1567.116	1603.342		
Saturated model	1656.000	1905.962		

Model	AIC	BCC	BIC	CAIC
Independence model	8314.428	8335.258		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.854	2.675	3.049	2.920
Saturated model	3.016	3.016	3.016	3.472
Independence model	15.145	14.621	15.680	15.183

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	321	333
Independence model	58	60

Execution time summary

Minimization:	.031
Miscellaneous:	.965
Bootstrap:	.000
Total:	.996



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10. Factor loadings constrained equal

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 3:09:52 PM

Title

Amos baseline model factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 3:09 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (manu)

Your model contains the following variables (manu)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (manu)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (manu)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	0	0	0	0	21
Unlabeled	2	3	28	0	0	33
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)



The model is recursive.
 Sample size = 184
 Variable Summary (service)
 Your model contains the following variables (service)
 Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunct
 BAuthen
 BAttent
 B Aware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (service)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (service)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	0	0	0	0	21
Unlabeled	2	3	28	0	0	33
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 87

Degrees of freedom (552 - 87): 465

Result (Default model)

Minimum was achieved

Chi-square = 852.298

Degrees of freedom = 465

Probability level = .000

manu (manu - Default model)

Estimates (manu - Default model)

Scalar Estimates (manu - Default model)

Maximum Likelihood Estimates



Regression Weights: (manu - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.485	.036	13.321	***	pbcu
BAuthen <-- SMEBE	.563	.043	13.136	***	pbau
BFunct <-- SMEBE	.582	.039	15.118	***	pbpr
BReso <-- SMEBE	.514	.048	10.744	***	
BAware <-- SMEBE	.610	.043	14.222	***	pbaw
item20 <-- BFunct	1.000				
item21 <-- BFunct	1.068	.066	16.099	***	p10
item22 <-- BFunct	1.089	.068	15.916	***	p9
item17 <-- BFunct	.724	.065	11.202	***	p8
item16 <-- BFunct	.638	.066	9.622	***	p7
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	1.077	.086	12.578	***	p13
item32 <-- BAttent	1.000				
item34 <-- BAttent	1.025	.085	12.021	***	p17
item35 <-- BAttent	1.035	.086	12.063	***	p16
item33 <-- BAttent	1.105	.086	12.928	***	p15
item9 <-- BAuthen	1.097	.087	12.648	***	p12
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	1.004	.053	19.015	***	p5
P1_14 <-- BAware	.966	.051	19.009	***	p4
P1_13 <-- BAware	.911	.049	18.664	***	p3
P1_12 <-- BAware	.824	.052	15.775	***	p2
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	1.133	.080	14.148	***	p22
P2_3 <-- BReso	1.168	.078	15.037	***	p21
P2_4 <-- BReso	1.314	.109	12.071	***	
P2_5 <-- BReso	1.223	.085	14.462	***	p20
P2_6 <-- BReso	1.032	.084	12.268	***	p19

Covariances: (manu - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.422	.059	7.185	***	
e34 <--> e35	.137	.046	2.984	.003	
e2_5 <--> e2_6	.092	.042	2.194	.028	

Variances: (manu - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.105	.033	3.156	.002	
res4	.133	.032	4.199	***	
res2	.143	.034	4.181	***	
res1	.296	.049	5.999	***	
res5	.106	.025	4.269	***	
e20	.353	.047	7.588	***	
e21	.431	.056	7.740	***	
e22	.327	.047	7.011	***	
e17	.530	.060	8.890	***	
e16	.709	.077	9.168	***	
e27	.563	.068	8.251	***	
e8	.361	.051	7.098	***	
e9	.381	.053	7.146	***	
e32	.342	.045	7.585	***	
e34	.469	.059	7.917	***	
e35	.476	.060	7.913	***	
e33	.319	.046	6.930	***	
e1_16	.299	.040	7.400	***	
e1_15	.294	.040	7.347	***	
e1_14	.375	.047	7.982	***	
e1_13	.355	.044	8.079	***	
e1_12	.461	.053	8.631	***	
e2_1	.479	.054	8.811	***	
e2_2	.360	.044	8.255	***	
e2_4	.317	.043	7.445	***	
e2_5	.365	.046	8.003	***	
e2_3	.262	.034	7.630	***	
e2_6	.639	.072	8.878	***	

service (service - Default model)

Estimates (service - Default model)

Scalar Estimates (service - Default model)

Maximum Likelihood Estimates

Regression Weights: (service - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.485	.036	13.321	***	pbcu
BAuthen <-- SMEBE	.563	.043	13.136	***	pbau
BFunct <-- SMEBE	.582	.039	15.118	***	pbpr
BReso <-- SMEBE	.534	.041	13.071	***	
BAware <-- SMEBE	.610	.043	14.222	***	pbaw
item20 <-- BFunct	1.000				
item21 <-- BFunct	1.068	.066	16.099	***	p10

			Estimate	S.E.	C.R.	P	Label
item22	<--	BFunct	1.089	.068	15.916	***	p9
item17	<--	BFunct	.724	.065	11.202	***	p8
item16	<--	BFunct	.638	.066	9.622	***	p7
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.077	.086	12.578	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.025	.085	12.021	***	p17
item35	<--	BAttent	1.035	.086	12.063	***	p16
item33	<--	BAttent	1.105	.086	12.928	***	p15
item9	<--	BAuthen	1.097	.087	12.648	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	1.004	.053	19.015	***	p5
P1_14	<--	BAware	.966	.051	19.009	***	p4
P1_13	<--	BAware	.911	.049	18.664	***	p3
P1_12	<--	BAware	.824	.052	15.775	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.133	.080	14.148	***	p22
P2_3	<--	BReso	1.168	.078	15.037	***	p21
P2_4	<--	BReso	1.250	.099	12.633	***	
P2_5	<--	BReso	1.223	.085	14.462	***	p20
P2_6	<--	BReso	1.032	.084	12.268	***	p19

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.212	.033	6.518	***	
e34	<-->	e35	.071	.027	2.605	.009	
e2_5	<-->	e2_6	.079	.028	2.814	.005	

Variances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.009	.015	.594	.552	
res4			.043	.016	2.760	.006	
res2			.050	.016	3.205	.001	
res1			.194	.032	6.139	***	
res5			.043	.012	3.507	***	
e20			.226	.028	8.030	***	
e21			.174	.024	7.234	***	
e22			.237	.030	7.818	***	
e17			.355	.039	9.065	***	
e16			.362	.039	9.179	***	
e27			.366	.042	8.724	***	
e8			.261	.032	8.039	***	
e9			.254	.032	7.910	***	
e32			.242	.030	8.033	***	
e34			.292	.036	8.096	***	
e35			.291	.036	8.067	***	
e33			.305	.038	8.089	***	
e1_16			.257	.032	8.010	***	
e1_15			.237	.030	7.864	***	
e1_14			.173	.023	7.378	***	
e1_13			.169	.022	7.577	***	
e1_12			.284	.033	8.612	***	
e2_1			.239	.028	8.550	***	
e2_2			.275	.033	8.437	***	
e2_4			.271	.033	8.121	***	
e2_5			.289	.035	8.262	***	
e2_3			.218	.027	8.043	***	
e2_6			.355	.040	8.767	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	87	852.298	465	.000	1.833
Saturated model	552	.000	0		
Independence model	46	5864.187	506	.000	11.589

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.064	.829	.797	.698
Saturated model	.000	1.000		
Independence model	.335	.174	.098	.159

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.855	.842	.928	.921	.928
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.919	.785	.853

Model	PRATIO	PNFI	PCFI
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	387.298	309.280	473.140
Saturated model	.000	.000	.000
Independence model	5358.187	5115.009	5607.836

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.329	1.058	.845	1.293
Saturated model	.000	.000	.000	.000
Independence model	16.022	14.640	13.975	15.322

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.048	.043	.053	.769
Independence model	.170	.166	.174	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1026.298	1052.562		
Saturated model	1104.000	1270.642		
Independence model	5956.187	5970.074		

ECVI

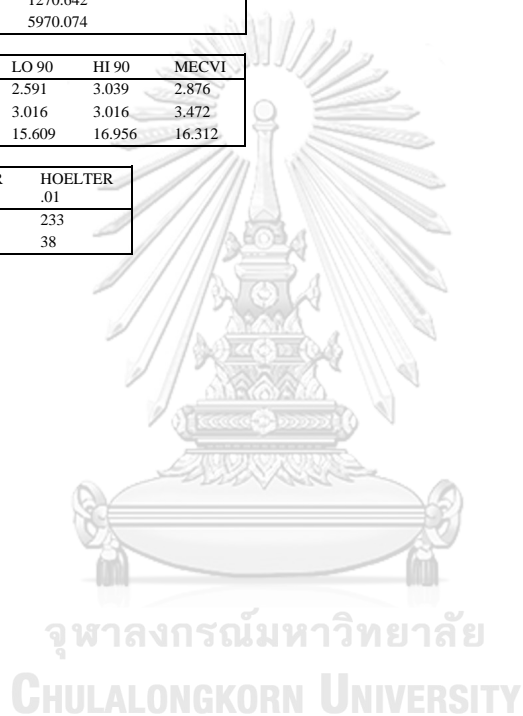
Model	ECVI	LO 90	HI 90	MECVI
Default model	2.804	2.591	3.039	2.876
Saturated model	3.016	3.016	3.016	3.472
Independence model	16.274	15.609	16.956	16.312

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	223	233
Independence model	36	38

Execution time summary

Minimization:	.016
Miscellaneous:	.702
Bootstrap:	.000
Total:	.718



11. Factor loadings constrained equal

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 3:13:28 PM

Title

Amos baseline model factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 3:13 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (manu)

Your model contains the following variables (manu)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (manu)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (manu)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	0	0	0	0	21
Unlabeled	2	3	28	0	0	33
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)



The model is recursive.
 Sample size = 184
 Variable Summary (trade)
 Your model contains the following variables (trade)
 Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunct
 BAuthen
 BAttent
 B Aware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (trade)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	0	0	0	0	21
Unlabeled	2	3	28	0	0	33
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 87

Degrees of freedom (552 - 87): 465

Result (Default model)

Minimum was achieved

Chi-square = 862.633

Degrees of freedom = 465

Probability level = .000

manu (manu - Default model)

Estimates (manu - Default model)

Scalar Estimates (manu - Default model)

Maximum Likelihood Estimates



Regression Weights: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.483	.041	11.773	***	pbcu
BAuthen	<--	SMEBE	.615	.044	13.842	***	pbau
BFunc	<--	SMEBE	.593	.042	14.133	***	pbpr
BReso	<--	SMEBE	.480	.050	9.521	***	
BAware	<--	SMEBE	.594	.046	13.047	***	pbaw
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.005	.071	14.203	***	p10
item22	<--	BFunc	1.020	.071	14.367	***	p9
item17	<--	BFunc	.680	.065	10.506	***	p8
item16	<--	BFunc	.553	.066	8.379	***	p7
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.043	.081	12.821	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	.823	.083	9.949	***	p17
item35	<--	BAttent	.918	.087	10.597	***	p16
item33	<--	BAttent	.896	.085	10.530	***	p15
item9	<--	BAuthen	1.019	.079	12.838	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.940	.053	17.740	***	p5
P1_14	<--	BAware	.931	.056	16.530	***	p4
P1_13	<--	BAware	.747	.052	14.472	***	p3
P1_12	<--	BAware	.651	.053	12.345	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.151	.102	11.332	***	p22
P2_3	<--	BReso	1.278	.105	12.145	***	p21
P2_4	<--	BReso	1.370	.128	10.733	***	
P2_5	<--	BReso	1.282	.110	11.627	***	p20
P2_6	<--	BReso	.809	.099	8.169	***	p19

Covariances: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.419	.058	7.221	***	
e34	<-->	e35	.145	.046	3.169	.002	
e2_5	<-->	e2_6	.106	.042	2.532	.011	

Variances: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.100	.036	2.775	.006	
res4			.175	.041	4.290	***	
res2			.154	.038	4.099	***	
res1			.363	.059	6.184	***	
res5			.104	.025	4.094	***	
e20			.344	.047	7.298	***	
e21			.436	.056	7.783	***	
e22			.336	.047	7.145	***	
e17			.528	.059	8.907	***	
e16			.705	.076	9.233	***	
e27			.564	.069	8.136	***	
e8			.359	.051	7.004	***	
e9			.392	.053	7.358	***	
e32			.315	.047	6.673	***	
e34			.488	.059	8.217	***	
e35			.476	.060	7.895	***	
e33			.350	.047	7.474	***	
e1_16			.279	.041	6.845	***	
e1_15			.278	.039	7.160	***	
e1_14			.365	.047	7.777	***	
e1_13			.374	.044	8.454	***	
e1_12			.484	.054	8.922	***	
e2_1			.489	.055	8.867	***	
e2_2			.368	.044	8.324	***	
e2_4			.307	.042	7.346	***	
e2_5			.363	.045	7.970	***	
e2_3			.248	.034	7.249	***	
e2_6			.653	.071	9.171	***	

trade (trade - Default model)

Estimates (trade - Default model)

Scalar Estimates (trade - Default model)

Maximum Likelihood Estimates

Regression Weights: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.483	.041	11.773	***	pbcu
BAuthen	<--	SMEBE	.615	.044	13.842	***	pbau
BFunc	<--	SMEBE	.593	.042	14.133	***	pbpr
BReso	<--	SMEBE	.390	.044	8.826	***	
BAware	<--	SMEBE	.594	.046	13.047	***	pbaw
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.005	.071	14.203	***	p10

			Estimate	S.E.	C.R.	P	Label
item22	<--	BFunct	1.020	.071	14.367	***	p9
item17	<--	BFunct	.680	.065	10.506	***	p8
item16	<--	BFunct	.553	.066	8.379	***	p7
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.043	.081	12.821	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	.823	.083	9.949	***	p17
item35	<--	BAttent	.918	.087	10.597	***	p16
item33	<--	BAttent	.896	.085	10.530	***	p15
item9	<--	BAuthen	1.019	.079	12.838	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.940	.053	17.740	***	p5
P1_14	<--	BAware	.931	.056	16.530	***	p4
P1_13	<--	BAware	.747	.052	14.472	***	p3
P1_12	<--	BAware	.651	.053	12.345	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.151	.102	11.332	***	p22
P2_3	<--	BReso	1.278	.105	12.145	***	p21
P2_4	<--	BReso	1.372	.138	9.935	***	
P2_5	<--	BReso	1.282	.110	11.627	***	p20
P2_6	<--	BReso	.809	.099	8.169	***	p19

Covariances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.173	.035	4.930	***	
e34	<-->	e35	.062	.033	1.852	.064	
e2_5	<-->	e2_6	.158	.042	3.731	***	

Variances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.022	.023	.954	.340	
res4			.097	.030	3.239	.001	
res2			.075	.025	3.017	.003	
res1			.236	.043	5.541	***	
res5			.109	.024	4.599	***	
e20			.301	.039	7.725	***	
e21			.281	.037	7.552	***	
e22			.333	.042	7.840	***	
e17			.406	.045	8.947	***	
e16			.411	.045	9.150	***	
e27			.323	.041	7.820	***	
e8			.406	.050	8.094	***	
e9			.347	.044	7.891	***	
e32			.351	.047	7.521	***	
e34			.343	.043	7.946	***	
e35			.346	.045	7.625	***	
e33			.524	.062	8.525	***	
e1_16			.304	.042	7.248	***	
e1_15			.284	.039	7.375	***	
e1_14			.379	.048	7.967	***	
e1_13			.376	.044	8.535	***	
e1_12			.407	.046	8.843	***	
e2_1			.431	.049	8.753	***	
e2_2			.339	.041	8.187	***	
e2_4			.313	.043	7.281	***	
e2_5			.397	.049	8.096	***	
e2_3			.311	.040	7.703	***	
e2_6			.585	.064	9.125	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	87	862.633	465	.000	1.855
Saturated model	552	.000	0		
Independence model	46	4708.648	506	.000	9.306

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.068	.828	.795	.697
Saturated model	.000	1.000		
Independence model	.294	.237	.167	.217

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.817	.801	.906	.897	.905
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.919	.751	.832

Model	PRATIO	PNFI	PCFI
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	397.633	318.930	484.152
Saturated model	.000	.000	.000
Independence model	4202.648	3986.627	4425.977

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.357	1.086	.871	1.323
Saturated model	.000	.000	.000	.000
Independence model	12.865	11.483	10.892	12.093

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.048	.043	.053	.702
Independence model	.151	.147	.155	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1036.633	1062.897		
Saturated model	1104.000	1270.642		
Independence model	4800.648	4814.535		

ECVI

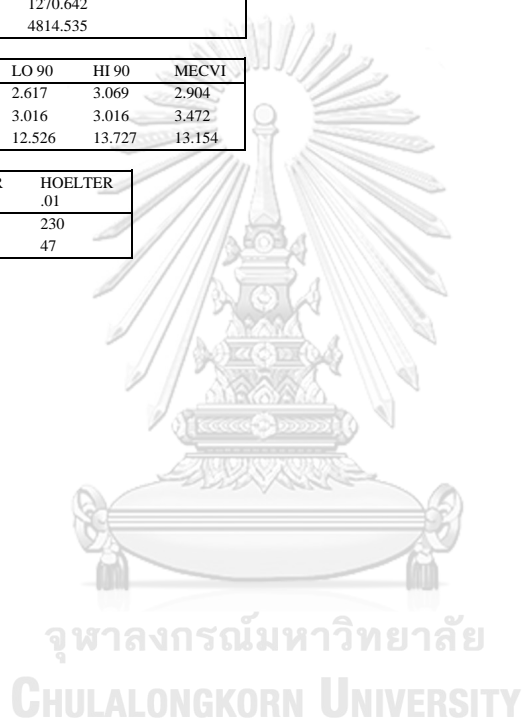
Model	ECVI	LO 90	HI 90	MECVI
Default model	2.832	2.617	3.069	2.904
Saturated model	3.016	3.016	3.016	3.472
Independence model	13.117	12.526	13.727	13.154

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	221	230
Independence model	45	47

Execution time summary

Minimization:	.006
Miscellaneous:	.595
Bootstrap:	.000
Total:	.601



12. Factor loadings constrained equal

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 3:20:01 PM

Title

Amos baseline model factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 3:20 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (service)

Your model contains the following variables (service)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (service)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (service)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	0	0	0	0	21
Unlabeled	2	3	28	0	0	33
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)



The model is recursive.
 Sample size = 184
 Variable Summary (trade)
 Your model contains the following variables (trade)
 Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunct
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (trade)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	0	0	0	0	21
Unlabeled	2	3	28	0	0	33
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 87

Degrees of freedom (552 - 87): 465

Result (Default model)

Minimum was achieved

Chi-square = 893.906

Degrees of freedom = 465

Probability level = .000

service (service - Default model)

Estimates (service - Default model)

Scalar Estimates (service - Default model)

Maximum Likelihood Estimates



Regression Weights: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.508	.037	13.671	***	pbcu
BAuthen	<--	SMEBE	.670	.041	16.283	***	pbau
BFunct	<--	SMEBE	.639	.038	16.630	***	pbpr
BReso	<--	SMEBE	.525	.041	12.803	***	
BAware	<--	SMEBE	.631	.043	14.645	***	pbaw
item20	<--	BFunct	1.000				
item21	<--	BFunct	.980	.056	17.449	***	p10
item22	<--	BFunct	.945	.059	16.124	***	p9
item17	<--	BFunct	.779	.058	13.368	***	p8
item16	<--	BFunct	.663	.056	11.749	***	p7
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.864	.062	14.022	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	.931	.078	11.927	***	p17
item35	<--	BAttent	1.027	.081	12.632	***	p16
item33	<--	BAttent	.876	.080	11.010	***	p15
item9	<--	BAuthen	.930	.062	14.888	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.975	.052	18.863	***	p5
P1_14	<--	BAware	.850	.047	17.902	***	p4
P1_13	<--	BAware	.845	.047	17.985	***	p3
P1_12	<--	BAware	.742	.049	15.030	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.122	.085	13.260	***	p22
P2_3	<--	BReso	1.220	.086	14.183	***	p21
P2_4	<--	BReso	1.283	.103	12.434	***	
P2_5	<--	BReso	1.291	.093	13.841	***	p20
P2_6	<--	BReso	1.029	.089	11.595	***	p19

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.201	.032	6.296	***	
e34	<-->	e35	.070	.028	2.518	.012	
e2_5	<-->	e2_6	.077	.028	2.750	.006	

Variances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.009	.019	.464	.643	
res4			.050	.018	2.776	.005	
res2			.053	.017	3.073	.002	
res1			.226	.036	6.252	***	
res5			.043	.012	3.582	***	
e20			.219	.028	7.773	***	
e21			.179	.024	7.425	***	
e22			.246	.030	8.153	***	
e17			.342	.039	8.887	***	
e16			.353	.039	9.082	***	
e27			.354	.042	8.346	***	
e8			.264	.032	8.343	***	
e9			.257	.032	8.042	***	
e32			.238	.031	7.720	***	
e34			.296	.036	8.150	***	
e35			.284	.036	7.801	***	
e33			.322	.038	8.571	***	
e1_16			.250	.032	7.722	***	
e1_15			.231	.030	7.668	***	
e1_14			.176	.023	7.662	***	
e1_13			.172	.023	7.641	***	
e1_12			.289	.033	8.697	***	
e2_1			.242	.028	8.602	***	
e2_2			.277	.033	8.510	***	
e2_4			.268	.033	8.091	***	
e2_5			.285	.035	8.149	***	
e2_3			.216	.027	7.945	***	
e2_6			.359	.041	8.802	***	

trade (trade - Default model)

Estimates (trade - Default model)

Scalar Estimates (trade - Default model)

Maximum Likelihood Estimates

Regression Weights: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.508	.037	13.671	***	pbcu
BAuthen	<--	SMEBE	.670	.041	16.283	***	pbau
BFunct	<--	SMEBE	.639	.038	16.630	***	pbpr
BReso	<--	SMEBE	.414	.042	9.856	***	
BAware	<--	SMEBE	.631	.043	14.645	***	pbaw
item20	<--	BFunct	1.000				
item21	<--	BFunct	.980	.056	17.449	***	p10

			Estimate	S.E.	C.R.	P	Label
item22	<--	BFunc	.945	.059	16.124	***	p9
item17	<--	BFunc	.779	.058	13.368	***	p8
item16	<--	BFunc	.663	.056	11.749	***	p7
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.864	.062	14.022	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	.931	.078	11.927	***	p17
item35	<--	BAttent	1.027	.081	12.632	***	p16
item33	<--	BAttent	.876	.080	11.010	***	p15
item9	<--	BAuthen	.930	.062	14.888	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.975	.052	18.863	***	p5
P1_14	<--	BAware	.850	.047	17.902	***	p4
P1_13	<--	BAware	.845	.047	17.985	***	p3
P1_12	<--	BAware	.742	.049	15.030	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.122	.085	13.260	***	p22
P2_3	<--	BReso	1.220	.086	14.183	***	p21
P2_4	<--	BReso	1.369	.127	10.820	***	
P2_5	<--	BReso	1.291	.093	13.841	***	p20
P2_6	<--	BReso	1.029	.089	11.595	***	p19

Covariances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.157	.035	4.563	***	
e34	<-->	e35	.047	.034	1.374		.169
e2_5	<-->	e2_6	.140	.043	3.282	.001	

Variances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.035	.027	1.301	.193	
res4			.095	.028	3.424	***	
res2			.071	.024	2.902	.004	
res1			.218	.040	5.478	***	
res5			.102	.021	4.768	***	
e20			.296	.038	7.707	***	
e21			.289	.037	7.745	***	
e22			.341	.042	8.142	***	
e17			.386	.044	8.703	***	
e16			.400	.045	8.951	***	
e27			.307	.042	7.353	***	
e8			.417	.049	8.456	***	
e9			.354	.044	7.987	***	
e32			.363	.046	7.815	***	
e34			.333	.044	7.533	***	
e35			.327	.046	7.138	***	
e33			.513	.059	8.647	***	
e1_16			.313	.042	7.437	***	
e1_15			.285	.039	7.349	***	
e1_14			.388	.046	8.350	***	
e1_13			.371	.045	8.309	***	
e1_12			.403	.046	8.670	***	
e2_1			.433	.049	8.770	***	
e2_2			.342	.041	8.278	***	
e2_4			.318	.043	7.333	***	
e2_5			.392	.049	8.034	***	
e2_3			.328	.041	7.971	***	
e2_6			.580	.065	8.858	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	87	893.906	465	.000	1.922
Saturated model	552	.000	0		
Independence model	46	5780.020	506	.000	11.423

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.065	.824	.791	.694
Saturated model	.000	1.000		
Independence model	.324	.169	.094	.155

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.845	.832	.919	.912	.919
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.919	.777	.844

Model	PRATIO	PNFI	PCFI
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	428.906	348.167	517.440
Saturated model	.000	.000	.000
Independence model	5274.020	5032.699	5521.815

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.442	1.172	.951	1.414
Saturated model	.000	.000	.000	.000
Independence model	15.792	14.410	13.751	15.087

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.050	.045	.055	.467
Independence model	.169	.165	.173	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1067.906	1094.171		
Saturated model	1104.000	1270.642		
Independence model	5872.020	5885.907		

ECVI

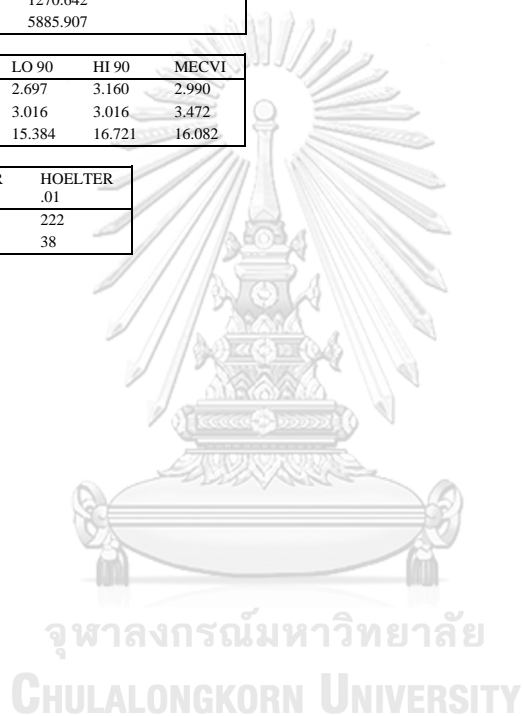
Model	ECVI	LO 90	HI 90	MECVI
Default model	2.918	2.697	3.160	2.990
Saturated model	3.016	3.016	3.016	3.472
Independence model	16.044	15.384	16.721	16.082

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	213	222
Independence model	37	38

Execution time summary

Minimization:	.016
Miscellaneous:	.671
Bootstrap:	.000
Total:	.687



13. Factor loadings on brand awareness constrained equal (Model 2)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model BAware factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 3:29:12 PM

Title

Amos baseline model baware factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 3:29 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (service)

Your model contains the following variables (service)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (service)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (service)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	5	0	0	0	0	5
Unlabeled	18	3	28	0	0	49
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)



The model is recursive.
 Sample size = 184
 Variable Summary (trade)
 Your model contains the following variables (trade)
 Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunct
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (trade)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	5	0	0	0	0	5
Unlabeled	18	3	28	0	0	49
Total	56	3	29	0	0	88

Group number 3 (Group number 3)

Notes for Group (Group number 3)

The model is recursive.

Sample size = 184

Variable Summary (manu)

Your model contains the following variables (manu)

Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34



item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunc
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33

SMEBE

res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (manu)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (manu)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	5	0	0	0	0	5
Unlabeled	18	3	28	0	0	49
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 828

Number of distinct parameters to be estimated: 152

Degrees of freedom (828 - 152): 676

Result (Default model)

Minimum was achieved

Chi-square = 1252.152

Degrees of freedom = 676

Probability level = .000

service (service - Default model)

Estimates (service - Default model)

Scalar Estimates (service - Default model)

Maximum Likelihood Estimates

Regression Weights: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<---	SMEBE	.489	.046	10.592	***	
BAuthen	<---	SMEBE	.622	.055	11.399	***	
BFunc	<---	SMEBE	.607	.048	12.589	***	
BReso	<---	SMEBE	.532	.046	11.540	***	
BAware	<---	SMEBE	.616	.036	17.248	***	pbaw
item20	<---	BFunc	1.000				
item21	<---	BFunc	1.030	.079	13.088	***	
item22	<---	BFunc	1.007	.083	12.089	***	
item17	<---	BFunc	.808	.084	9.585	***	
item16	<---	BFunc	.723	.082	8.783	***	
item27	<---	BAuthen	1.000				



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			Estimate	S.E.	C.R.	P	Label
item8	<--	BAuthen	.899	.091	9.828	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.086	.116	9.343	***	
item35	<--	BAttent	1.109	.117	9.457	***	
item33	<--	BAttent	1.056	.116	9.103	***	
item9	<--	BAuthen	.986	.096	10.323	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.975	.043	22.697	***	p5
P1_14	<--	BAware	.911	.042	21.806	***	p4
P1_13	<--	BAware	.845	.040	21.076	***	p3
P1_12	<--	BAware	.746	.042	17.732	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.117	.102	10.902	***	
P2_3	<--	BReso	1.148	.099	11.565	***	
P2_4	<--	BReso	1.251	.109	11.464	***	
P2_5	<--	BReso	1.237	.110	11.264	***	
P2_6	<--	BReso	1.133	.110	10.341	***	

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.201	.032	6.252	***	
e34	<-->	e35	.064	.028	2.307	.021	
e2_5	<-->	e2_6	.074	.028	2.641	.008	

Variances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.010	.018	.592	.554	
res4			.040	.015	2.580	.010	
res2			.050	.016	3.023	.003	
res1			.219	.034	6.429	***	
res5			.043	.013	3.444	***	
e20			.223	.028	7.890	***	
e21			.178	.024	7.302	***	
e22			.244	.030	8.015	***	
e17			.343	.039	8.865	***	
e16			.351	.039	9.009	***	
e27			.355	.042	8.437	***	
e8			.264	.032	8.318	***	
e9			.254	.032	7.916	***	
e32			.245	.030	8.073	***	
e34			.285	.036	7.835	***	
e35			.283	.036	7.755	***	
e33			.310	.038	8.266	***	
e1_16			.252	.032	7.824	***	
e1_15			.232	.030	7.759	***	
e1_14			.172	.023	7.423	***	
e1_13			.175	.023	7.760	***	
e1_12			.292	.033	8.734	***	
e2_1			.238	.028	8.529	***	
e2_2			.274	.032	8.442	***	
e2_4			.273	.034	8.146	***	
e2_5			.288	.035	8.176	***	
e2_3			.220	.027	8.081	***	
e2_6			.345	.040	8.553	***	

trade (trade - Default model)

Estimates (trade - Default model)

Scalar Estimates (trade - Default model)

Maximum Likelihood Estimates

Regression Weights: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.612	.056	11.000	***	
BAuthen	<--	SMEBE	.730	.056	12.955	***	
BFunc	<--	SMEBE	.673	.056	11.929	***	
BReso	<--	SMEBE	.388	.052	7.456	***	
BAware	<--	SMEBE	.616	.036	17.248	***	pbaw
item20	<--	BFunc	1.000				
item21	<--	BFunc	.914	.080	11.451	***	
item22	<--	BFunc	.854	.082	10.464	***	
item17	<--	BFunc	.746	.080	9.305	***	
item16	<--	BFunc	.575	.076	7.528	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.836	.085	9.846	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	.584	.087	6.677	***	
item35	<--	BAttent	.791	.094	8.424	***	
item33	<--	BAttent	.445	.095	4.677	***	
item9	<--	BAuthen	.874	.082	10.603	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.975	.043	22.697	***	p5

			Estimate	S.E.	C.R.	P	Label
P1_14	<--	BAware	.911	.042	21.806	***	p4
P1_13	<--	BAware	.845	.040	21.076	***	p3
P1_12	<--	BAware	.746	.042	17.732	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.136	.153	7.448	***	
P2_3	<--	BReso	1.404	.173	8.127	***	
P2_4	<--	BReso	1.443	.177	8.141	***	
P2_5	<--	BReso	1.372	.177	7.769	***	
P2_6	<--	BReso	.769	.147	5.223	***	

Covariances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.161	.035	4.634	***	
e34	<-->	e35	.112	.035	3.181	.001	
e2_5	<-->	e2_6	.165	.043	3.845	***	

Variances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.023	.029	.793	.428	
res4			.091	.039	2.333	.020	
res2			.089	.029	3.070	.002	
res1			.203	.037	5.527	***	
res5			.101	.026	3.837	***	
e20			.284	.039	7.257	***	
e21			.285	.037	7.659	***	
e22			.349	.042	8.221	***	
e17			.385	.045	8.631	***	
e16			.405	.045	9.018	***	
e27			.295	.042	7.076	***	
e8			.423	.050	8.474	***	
e9			.363	.045	8.138	***	
e32			.283	.048	5.966	***	
e34			.402	.046	8.726	***	
e35			.377	.047	7.998	***	
e33			.570	.062	9.268	***	
e1_16			.318	.042	7.576	***	
e1_15			.290	.039	7.485	***	
e1_14			.382	.047	8.206	***	
e1_13			.370	.044	8.360	***	
e1_12			.403	.046	8.702	***	
e2_1			.437	.050	8.799	***	
e2_2			.349	.042	8.318	***	
e2_4			.307	.042	7.261	***	
e2_5			.395	.050	7.949	***	
e2_3			.295	.040	7.296	***	
e2_6			.592	.065	9.182	***	

manu (manu - Default model)

Estimates (manu - Default model)

Scalar Estimates (manu - Default model)

Maximum Likelihood Estimates

Regression Weights: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.454	.057	8.032	***	
BAuthen	<--	SMEBE	.453	.064	7.082	***	
BFunc	<--	SMEBE	.505	.058	8.656	***	
BReso	<--	SMEBE	.504	.060	8.472	***	
BAware	<--	SMEBE	.616	.036	17.248	***	pbaw
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.166	.128	9.093	***	
item22	<--	BFunc	1.263	.129	9.777	***	
item17	<--	BFunc	.567	.105	5.402	***	
item16	<--	BFunc	.441	.114	3.868	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.480	.201	7.360	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	.920	.127	7.237	***	
item35	<--	BAttent	.907	.127	7.128	***	
item33	<--	BAttent	1.167	.133	8.774	***	
item9	<--	BAuthen	1.360	.190	7.167	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.975	.043	22.697	***	p5
P1_14	<--	BAware	.911	.042	21.806	***	p4
P1_13	<--	BAware	.845	.040	21.076	***	p3
P1_12	<--	BAware	.746	.042	17.732	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.151	.130	8.845	***	
P2_3	<--	BReso	1.188	.126	9.393	***	
P2_4	<--	BReso	1.297	.139	9.329	***	
P2_5	<--	BReso	1.189	.134	8.871	***	

	Estimate	S.E.	C.R.	P	Label
P2_6 <-- BReso	.837	.129	6.465	***	

Covariances: (manu - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.428	.058	7.443	***	
e34 <--> e35	.155	.046	3.352	***	
e2_5 <--> e2_6	.104	.042	2.478	.013	

Variances: (manu - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.076	.027	2.821	.005	
res4	.147	.037	3.954	***	
res2	.137	.035	3.900	***	
res1	.318	.052	6.098	***	
res5	.110	.030	3.704	***	
e20	.373	.048	7.792	***	
e21	.414	.056	7.374	***	
e22	.287	.049	5.872	***	
e17	.539	.059	9.185	***	
e16	.713	.076	9.388	***	
e27	.594	.068	8.709	***	
e8	.305	.053	5.727	***	
e9	.367	.053	6.867	***	
e32	.336	.046	7.232	***	
e34	.485	.060	8.126	***	
e35	.496	.061	8.190	***	
e33	.293	.049	5.932	***	
e1_16	.287	.040	7.153	***	
e1_15	.286	.039	7.268	***	
e1_14	.383	.047	8.087	***	
e1_13	.363	.044	8.227	***	
e1_12	.468	.053	8.761	***	
e2_1	.476	.054	8.737	***	
e2_2	.356	.044	8.086	***	
e2_4	.318	.043	7.451	***	
e2_5	.372	.046	8.027	***	
e2_3	.253	.034	7.333	***	
e2_6	.645	.071	9.077	***	

Model Fit Summary

CMIN

Model	NP	DF	P	CMIN/DF	
Default model	152	1252.152	676	.000	1.852
Saturated model	828	.000	0		
Independence model	69	8176.428	759	.000	10.773

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.053	.834	.797	.681
Saturated model	.000	1.000		
Independence model	.318	.189	.115	.173

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
Default model	.847	.828	.923	.913	.922
Saturated model	1.000	1.000	1.000	1.000	1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.891	.754	.821
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	576.152	480.563	679.551
Saturated model	.000	.000	.000
Independence model	7417.428	7130.199	7711.142

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.281	1.049	.875	1.238
Saturated model	.000	.000	.000	.000
Independence model	14.893	13.511	12.988	14.046

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.039	.036	.043	1.000
Independence model	.133	.131	.136	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1556.152	1602.039		
Saturated model	1656.000	1905.962		

Model	AIC	BCC	BIC	CAIC
Independence model	8314.428	8335.258		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.835	2.660	3.023	2.918
Saturated model	3.016	3.016	3.016	3.472
Independence model	15.145	14.621	15.680	15.183

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	326	338
Independence model	58	60

Execution time summary

Minimization:	.031
Miscellaneous:	.867
Bootstrap:	.000
Total:	.898



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14. Model 2 (a)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model BAware factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 7:07:47 PM

Title

Amos baseline model baware factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 7:07 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (service)

Your model contains the following variables (service)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (service)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (service)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	5	0	0	0	0	5
Unlabeled	18	3	28	0	0	49
Total	56	3	29	0	0	88

Group number 2 (Group number 2)



Notes for Group (Group number 2)

The model is recursive.

Sample size = 184

Variable Summary (manu)

Your model contains the following variables (manu)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (manu)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (manu)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	5	0	0	0	0	5
Unlabeled	18	3	28	0	0	49
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 103

Degrees of freedom (552 - 103): 449

Result (Default model)

Minimum was achieved

Chi-square = 821.948

Degrees of freedom = 449

Probability level = .000

service (service - Default model)

Estimates (service - Default model)

Scalar Estimates (service - Default model)



Maximum Likelihood Estimates
Regression Weights: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.496	.047	10.607	***	
BAuthen	<--	SMEBE	.631	.055	11.384	***	
BFunct	<--	SMEBE	.617	.049	12.530	***	
BReso	<--	SMEBE	.541	.047	11.534	***	
BAware	<--	SMEBE	.613	.043	14.206	***	pbaw
item20	<--	BFunct	1.000				
item21	<--	BFunct	1.031	.078	13.293	***	
item22	<--	BFunct	1.007	.082	12.277	***	
item17	<--	BFunct	.808	.083	9.731	***	
item16	<--	BFunct	.724	.081	8.917	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.899	.090	9.993	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.086	.114	9.493	***	
item35	<--	BAttent	1.109	.115	9.613	***	
item33	<--	BAttent	1.056	.114	9.244	***	
item9	<--	BAuthen	.986	.094	10.488	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	1.004	.053	19.062	***	p5
P1_14	<--	BAware	.966	.051	19.058	***	p4
P1_13	<--	BAware	.911	.049	18.697	***	p3
P1_12	<--	BAware	.824	.052	15.804	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.116	.101	11.062	***	
P2_3	<--	BReso	1.148	.098	11.749	***	
P2_4	<--	BReso	1.251	.107	11.645	***	
P2_5	<--	BReso	1.237	.108	11.437	***	
P2_6	<--	BReso	1.132	.108	10.499	***	

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.201	.032	6.253	***	
e34	<-->	e35	.064	.028	2.304	.021	
e2_5	<-->	e2_6	.074	.028	2.648	.008	

Variances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.011	.018	.624	.533	
res4			.040	.015	2.595	.009	
res2			.050	.016	3.037	.002	
res1			.196	.032	6.180	***	
res5			.043	.013	3.446	***	
e20			.223	.028	7.897	***	
e21			.178	.024	7.305	***	
e22			.243	.030	8.018	***	
e17			.343	.039	8.866	***	
e16			.351	.039	9.011	***	
e27			.355	.042	8.437	***	
e8			.263	.032	8.313	***	
e9			.254	.032	7.916	***	
e32			.245	.030	8.076	***	
e34			.285	.036	7.838	***	
e35			.283	.036	7.755	***	
e33			.311	.038	8.271	***	
e1_16			.257	.032	8.010	***	
e1_15			.237	.030	7.860	***	
e1_14			.172	.023	7.371	***	
e1_13			.169	.022	7.579	***	
e1_12			.284	.033	8.612	***	
e2_1			.238	.028	8.532	***	
e2_2			.275	.032	8.450	***	
e2_4			.273	.034	8.149	***	
e2_5			.288	.035	8.183	***	
e2_3			.220	.027	8.084	***	
e2_6			.345	.040	8.558	***	

manu (manu - Default model)

Estimates (manu - Default model)

Scalar Estimates (manu - Default model)

Maximum Likelihood Estimates

Regression Weights: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.458	.057	8.078	***	
BAuthen	<--	SMEBE	.458	.064	7.139	***	
BFunct	<--	SMEBE	.509	.059	8.695	***	
BReso	<--	SMEBE	.510	.060	8.525	***	
BAware	<--	SMEBE	.613	.043	14.206	***	pbaw
item20	<--	BFunct	1.000				

			Estimate	S.E.	C.R.	P	Label
item21	<--	BFunct	1.165	.127	9.168	***	
item22	<--	BFunct	1.263	.128	9.862	***	
item17	<--	BFunct	.567	.104	5.445	***	
item16	<--	BFunct	.441	.113	3.899	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.480	.199	7.436	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	.920	.126	7.292	***	
item35	<--	BAttent	.908	.126	7.186	***	
item33	<--	BAttent	1.167	.132	8.851	***	
item9	<--	BAuthen	1.359	.188	7.239	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	1.004	.053	19.062	***	p5
P1_14	<--	BAware	.966	.051	19.058	***	p4
P1_13	<--	BAware	.911	.049	18.697	***	p3
P1_12	<--	BAware	.824	.052	15.804	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.151	.129	8.913	***	
P2_3	<--	BReso	1.188	.126	9.467	***	
P2_4	<--	BReso	1.297	.138	9.404	***	
P2_5	<--	BReso	1.190	.133	8.944	***	
P2_6	<--	BReso	.838	.128	6.521	***	

Covariances: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.428	.058	7.443	***	
e34	<-->	e35	.155	.046	3.355	***	
e2_5	<-->	e2_6	.104	.042	2.473	.013	

Variances: (manu - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.076	.027	2.835	.005	
res4	.148	.037	3.974	***	
res2	.138	.035	3.931	***	
res1	.289	.049	5.860	***	
res5	.109	.029	3.718	***	
e20	.373	.048	7.793	***	
e21	.414	.056	7.378	***	
e22	.287	.049	5.876	***	
e17	.539	.059	9.185	***	
e16	.712	.076	9.388	***	
e27	.593	.068	8.710	***	
e8	.306	.053	5.743	***	
e9	.367	.053	6.879	***	
e32	.336	.046	7.238	***	
e34	.485	.060	8.131	***	
e35	.496	.060	8.192	***	
e33	.293	.049	5.937	***	
e1_16	.298	.040	7.400	***	
e1_15	.293	.040	7.342	***	
e1_14	.376	.047	7.986	***	
e1_13	.356	.044	8.086	***	
e1_12	.461	.053	8.633	***	
e2_1	.476	.054	8.740	***	
e2_2	.356	.044	8.092	***	
e2_4	.317	.043	7.454	***	
e2_5	.371	.046	8.028	***	
e2_3	.253	.034	7.341	***	
e2_6	.645	.071	9.077	***	

Model Fit Summary

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	103	821.948	449	.000	1.831
Saturated model	552	.000	0		
Independence model	46	5864.187	506	.000	11.589

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.047	.833	.795	.678
Saturated model	.000	1.000		
Independence model	.335	.174	.098	.159

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.860	.842	.931	.922	.930
Saturated model	1.000	1.000	1.000	1.000	1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI

Model	PRATIO	PNFI	PCFI
Default model	.887	.763	.826
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	372.948	296.419	457.301
Saturated model	.000	.000	.000
Independence model	5358.187	5115.009	5607.836

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.246	1.019	.810	1.249
Saturated model	.000	.000	.000	.000
Independence model	16.022	14.640	13.975	15.322

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.048	.042	.053	.772
Independence model	.170	.166	.174	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1027.948	1059.042		
Saturated model	1104.000	1270.642		
Independence model	5956.187	5970.074		

ECVI

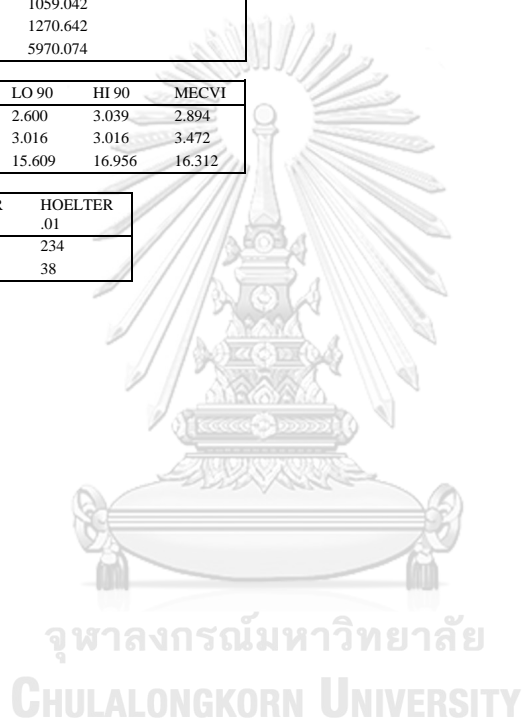
Model	ECVI	LO 90	HI 90	MECVI
Default model	2.809	2.600	3.039	2.894
Saturated model	3.016	3.016	3.016	3.472
Independence model	16.274	15.609	16.956	16.312

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	224	234
Independence model	36	38

Execution time summary

Minimization:	.000
Miscellaneous:	.686
Bootstrap:	.000
Total:	.686



15. Model 2 (c)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model BAware factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 7:12:16 PM

Title

Amos baseline model baware factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 7:12 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (service)

Your model contains the following variables (service)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (service)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (service)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	5	0	0	0	0	5
Unlabeled	18	3	28	0	0	49
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)



The model is recursive.
 Sample size = 184
 Variable Summary (trade)
 Your model contains the following variables (trade)
 Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunct
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (trade)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	5	0	0	0	0	5
Unlabeled	18	3	28	0	0	49
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 103

Degrees of freedom (552 - 103): 449

Result (Default model)

Minimum was achieved

Chi-square = 856.336

Degrees of freedom = 449

Probability level = .000

service (service - Default model)

Estimates (service - Default model)

Scalar Estimates (service - Default model)

Maximum Likelihood Estimates



Regression Weights: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.490	.047	10.540	***	
BAuthen	<--	SMEBE	.624	.055	11.329	***	
BFunc	<--	SMEBE	.609	.049	12.482	***	
BReso	<--	SMEBE	.534	.047	11.465	***	
BAware	<--	SMEBE	.634	.043	14.732	***	pbaw
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.030	.078	13.131	***	
item22	<--	BFunc	1.007	.083	12.132	***	
item17	<--	BFunc	.808	.084	9.615	***	
item16	<--	BFunc	.723	.082	8.811	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.899	.091	9.865	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.086	.116	9.376	***	
item35	<--	BAttent	1.109	.117	9.493	***	
item33	<--	BAttent	1.056	.116	9.133	***	
item9	<--	BAuthen	.986	.095	10.360	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.974	.052	18.852	***	p5
P1_14	<--	BAware	.850	.047	17.911	***	p4
P1_13	<--	BAware	.846	.047	18.005	***	p3
P1_12	<--	BAware	.742	.049	15.039	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.116	.102	10.936	***	
P2_3	<--	BReso	1.148	.099	11.605	***	
P2_4	<--	BReso	1.251	.109	11.504	***	
P2_5	<--	BReso	1.237	.109	11.302	***	
P2_6	<--	BReso	1.132	.109	10.373	***	

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.201	.032	6.253	***	
e34	<-->	e35	.064	.028	2.306	.021	
e2_5	<-->	e2_6	.074	.028	2.643	.008	

Variances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.011	.018	.595	.552	
res4			.040	.015	2.583	.010	
res2			.050	.016	3.026	.002	
res1			.226	.036	6.241	***	
res5			.043	.013	3.447	***	
e20			.223	.028	7.892	***	
e21			.178	.024	7.304	***	
e22			.243	.030	8.014	***	
e17			.343	.039	8.865	***	
e16			.351	.039	9.010	***	
e27			.355	.042	8.438	***	
e8			.264	.032	8.318	***	
e9			.254	.032	7.917	***	
e32			.245	.030	8.074	***	
e34			.285	.036	7.836	***	
e35			.283	.036	7.754	***	
e33			.311	.038	8.268	***	
e1_16			.250	.032	7.723	***	
e1_15			.231	.030	7.674	***	
e1_14			.176	.023	7.661	***	
e1_13			.172	.023	7.635	***	
e1_12			.289	.033	8.696	***	
e2_1			.238	.028	8.530	***	
e2_2			.274	.032	8.444	***	
e2_4			.273	.034	8.145	***	
e2_5			.288	.035	8.177	***	
e2_3			.220	.027	8.081	***	
e2_6			.345	.040	8.555	***	

trade (trade - Default model)

Estimates (trade - Default model)

Scalar Estimates (trade - Default model)

Maximum Likelihood Estimates

Regression Weights: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.616	.056	10.977	***	
BAuthen	<--	SMEBE	.734	.057	12.890	***	
BFunc	<--	SMEBE	.677	.057	11.877	***	
BReso	<--	SMEBE	.390	.052	7.463	***	
BAware	<--	SMEBE	.634	.043	14.732	***	pbaw
item20	<--	BFunc	1.000				
item21	<--	BFunc	.914	.079	11.516	***	

			Estimate	S.E.	C.R.	P	Label
item22	<--	BFunct	.854	.081	10.523	***	
item17	<--	BFunct	.746	.080	9.358	***	
item16	<--	BFunct	.575	.076	7.572	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.836	.084	9.915	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	.583	.087	6.717	***	
item35	<--	BAttent	.791	.093	8.478	***	
item33	<--	BAttent	.444	.095	4.701	***	
item9	<--	BAuthen	.873	.082	10.670	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.974	.052	18.852	***	p5
P1_14	<--	BAware	.850	.047	17.911	***	p4
P1_13	<--	BAware	.846	.047	18.005	***	p3
P1_12	<--	BAware	.742	.049	15.039	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.136	.152	7.478	***	
P2_3	<--	BReso	1.404	.172	8.162	***	
P2_4	<--	BReso	1.443	.176	8.176	***	
P2_5	<--	BReso	1.371	.176	7.802	***	
P2_6	<--	BReso	.769	.147	5.244	***	

Covariances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.161	.035	4.633	***	
e34	<-->	e35	.112	.035	3.184	.001	
e2_5	<-->	e2_6	.165	.043	3.846	***	

Variances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.023	.029	.792	.428	
res4			.091	.039	2.335	.020	
res2			.089	.029	3.079	.002	
res1			.210	.039	5.432	***	
res5			.101	.026	3.848	***	
e20			.284	.039	7.260	***	
e21			.285	.037	7.660	***	
e22			.349	.042	8.221	***	
e17			.385	.045	8.631	***	
e16			.405	.045	9.018	***	
e27			.295	.042	7.078	***	
e8			.423	.050	8.474	***	
e9			.363	.045	8.143	***	
e32			.283	.047	5.967	***	
e34			.402	.046	8.729	***	
e35			.378	.047	8.001	***	
e33			.570	.062	9.269	***	
e1_16			.312	.042	7.456	***	
e1_15			.287	.039	7.383	***	
e1_14			.388	.046	8.362	***	
e1_13			.370	.045	8.317	***	
e1_12			.403	.046	8.678	***	
e2_1			.437	.050	8.799	***	
e2_2			.349	.042	8.321	***	
e2_4			.307	.042	7.262	***	
e2_5			.395	.050	7.951	***	
e2_3			.295	.040	7.298	***	
e2_6			.592	.065	9.182	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	103	856.336	449	.000	1.907
Saturated model	552	.000	0		
Independence model	46	5780.020	506	.000	11.423

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.054	.833	.794	.677
Saturated model	.000	1.000		
Independence model	.324	.169	.094	.155

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.852	.833	.924	.913	.923
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.887	.756	.819

Model	PRATIO	PNFI	PCFI
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	407.336	328.511	493.959
Saturated model	.000	.000	.000
Independence model	5274.020	5032.699	5521.815

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.340	1.113	.898	1.350
Saturated model	.000	.000	.000	.000
Independence model	15.792	14.410	13.751	15.087

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.050	.045	.055	.521
Independence model	.169	.165	.173	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1062.336	1093.430		
Saturated model	1104.000	1270.642		
Independence model	5872.020	5885.907		

ECVI

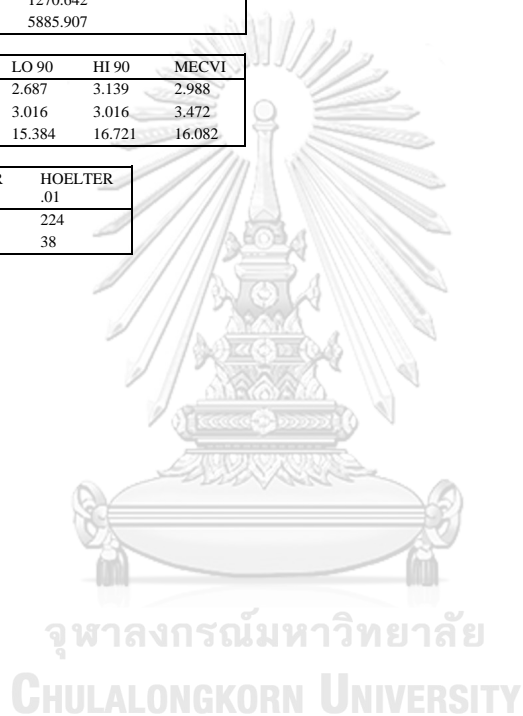
Model	ECVI	LO 90	HI 90	MECVI
Default model	2.903	2.687	3.139	2.988
Saturated model	3.016	3.016	3.016	3.472
Independence model	16.044	15.384	16.721	16.082

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	215	224
Independence model	37	38

Execution time summary

Minimization:	.000
Miscellaneous:	.555
Bootstrap:	.000
Total:	.555



16. Factor loadings on brand functionality constrained equal (Model 3)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model BFuncnt factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 7:14:44 PM

Title

Amos baseline model BFuncnt factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 7:14 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (trade)

Your model contains the following variables (trade)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFuncnt

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (trade)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	5	0	0	0	0	5
Unlabeled	18	3	28	0	0	49
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)



The model is recursive.
 Sample size = 184
 Variable Summary (service)
 Your model contains the following variables (service)
 Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunct
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (service)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (service)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	5	0	0	0	0	5
Unlabeled	18	3	28	0	0	49
Total	56	3	29	0	0	88

Group number 3 (Group number 3)

Notes for Group (Group number 3)

The model is recursive.

Sample size = 184

Variable Summary (manu)

Your model contains the following variables (manu)

Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34



item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunc
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33

SMEBE

res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (manu)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (manu)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	5	0	0	0	0	5
Unlabeled	18	3	28	0	0	49
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 828

Number of distinct parameters to be estimated: 152

Degrees of freedom (828 - 152): 676

Result (Default model)

Minimum was achieved

Chi-square = 1243.926

Degrees of freedom = 676

Probability level = .000

trade (trade - Default model)

Estimates (trade - Default model)

Scalar Estimates (trade - Default model)

Maximum Likelihood Estimates

Regression Weights: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<---	SMEBE	.596	.055	10.900	***	
BAuthen	<---	SMEBE	.713	.055	12.936	***	
BFunc	<---	SMEBE	.605	.032	18.661	***	pbpr
BReso	<---	SMEBE	.375	.051	7.317	***	
BAware	<---	SMEBE	.645	.062	10.352	***	
item20	<---	BFunc	1.000				
item21	<---	BFunc	1.019	.052	19.587	***	p2
item22	<---	BFunc	1.014	.053	18.974	***	p3
item17	<---	BFunc	.731	.051	14.349	***	p4
item16	<---	BFunc	.625	.051	12.224	***	p5
item27	<---	BAuthen	1.000				



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			Estimate	S.E.	C.R.	P	Label
item8	<--	BAuthen	.837	.087	9.577	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	.586	.090	6.509	***	
item35	<--	BAttent	.793	.097	8.185	***	
item33	<--	BAttent	.448	.098	4.582	***	
item9	<--	BAuthen	.873	.085	10.281	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.890	.070	12.652	***	
P1_14	<--	BAware	.749	.072	10.438	***	
P1_13	<--	BAware	.651	.068	9.553	***	
P1_12	<--	BAware	.552	.067	8.204	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.136	.155	7.308	***	
P2_3	<--	BReso	1.403	.176	7.969	***	
P2_4	<--	BReso	1.442	.181	7.982	***	
P2_5	<--	BReso	1.370	.180	7.618	***	
P2_6	<--	BReso	.767	.150	5.114	***	

Covariances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.166	.035	4.774	***	
e34	<-->	e35	.112	.035	3.165	.002	
e2_5	<-->	e2_6	.165	.043	3.849	***	

Variances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.019	.029	.641	.522	
res4			.088	.039	2.284	.022	
res2			.073	.024	3.101	.002	
res1			.282	.052	5.393	***	
res5			.102	.027	3.805	***	
e20			.305	.039	7.856	***	
e21			.279	.037	7.608	***	
e22			.336	.042	7.974	***	
e17			.399	.045	8.875	***	
e16			.406	.045	9.059	***	
e27			.295	.042	7.100	***	
e8			.422	.050	8.476	***	
e9			.364	.045	8.155	***	
e32			.285	.047	5.992	***	
e34			.401	.046	8.719	***	
e35			.377	.047	7.993	***	
e33			.569	.061	9.263	***	
e1_16			.271	.043	6.369	***	
e1_15			.275	.039	7.053	***	
e1_14			.391	.047	8.343	***	
e1_13			.382	.044	8.625	***	
e1_12			.411	.046	8.940	***	
e2_1			.436	.050	8.791	***	
e2_2			.348	.042	8.305	***	
e2_4			.308	.042	7.244	***	
e2_5			.395	.050	7.937	***	
e2_3			.296	.041	7.278	***	
e2_6			.593	.065	9.180	***	

service (service - Default model)

Estimates (service - Default model)

Scalar Estimates (service - Default model)

Maximum Likelihood Estimates

Regression Weights: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.490	.045	10.773	***	
BAuthen	<--	SMEBE	.623	.054	11.604	***	
BFunc	<--	SMEBE	.605	.032	18.661	***	pbpr
BReso	<--	SMEBE	.536	.045	11.817	***	
BAware	<--	SMEBE	.618	.054	11.387	***	
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.019	.052	19.587	***	p2
item22	<--	BFunc	1.014	.053	18.974	***	p3
item17	<--	BFunc	.731	.051	14.349	***	p4
item16	<--	BFunc	.625	.051	12.224	***	p5
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.899	.091	9.847	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.087	.116	9.374	***	
item35	<--	BAttent	1.110	.117	9.489	***	
item33	<--	BAttent	1.056	.116	9.122	***	
item9	<--	BAuthen	.987	.095	10.350	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	1.028	.074	13.969	***	

			Estimate	S.E.	C.R.	P	Label
P1_14	<--	BAware	.912	.064	14.150	***	
P1_13	<--	BAware	.950	.065	14.619	***	
P1_12	<--	BAware	.869	.070	12.343	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.115	.102	10.925	***	
P2_3	<--	BReso	1.149	.099	11.617	***	
P2_4	<--	BReso	1.252	.109	11.519	***	
P2_5	<--	BReso	1.237	.109	11.303	***	
P2_6	<--	BReso	1.132	.109	10.369	***	

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.209	.032	6.465	***	
e34	<-->	e35	.064	.028	2.291	.022	
e2_5	<-->	e2_6	.075	.028	2.658	.008	

Variances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.012	.018	.673	.501	
res4			.040	.015	2.596	.009	
res2			.055	.017	3.318	***	
res1			.190	.033	5.694	***	
res5			.042	.012	3.379	***	
e20			.222	.028	7.892	***	
e21			.175	.024	7.319	***	
e22			.240	.030	7.982	***	
e17			.350	.039	9.016	***	
e16			.361	.039	9.170	***	
e27			.355	.042	8.425	***	
e8			.264	.032	8.305	***	
e9			.254	.032	7.893	***	
e32			.245	.030	8.073	***	
e34			.285	.036	7.825	***	
e35			.282	.036	7.744	***	
e33			.311	.038	8.267	***	
e1_16			.257	.032	7.988	***	
e1_15			.239	.031	7.771	***	
e1_14			.177	.023	7.659	***	
e1_13			.164	.022	7.321	***	
e1_12			.278	.033	8.472	***	
e2_1			.238	.028	8.534	***	
e2_2			.275	.033	8.456	***	
e2_4			.273	.033	8.147	***	
e2_5			.288	.035	8.187	***	
e2_3			.220	.027	8.084	***	
e2_6			.345	.040	8.564	***	

manu (manu - Default model)

Estimates (manu - Default model)

Scalar Estimates (manu - Default model)

Maximum Likelihood Estimates

Regression Weights: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.467	.056	8.296	***	
BAuthen	<--	SMEBE	.465	.064	7.285	***	
BFunct	<--	SMEBE	.605	.032	18.661	***	pbpr
BReso	<--	SMEBE	.514	.059	8.665	***	
BAware	<--	SMEBE	.588	.063	9.288	***	
item20	<--	BFunct	1.000				
item21	<--	BFunct	1.019	.052	19.587	***	p2
item22	<--	BFunct	1.014	.053	18.974	***	p3
item17	<--	BFunct	.731	.051	14.349	***	p4
item16	<--	BFunct	.625	.051	12.224	***	p5
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.476	.196	7.547	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	.919	.124	7.383	***	
item35	<--	BAttent	.906	.125	7.271	***	
item33	<--	BAttent	1.167	.130	8.991	***	
item9	<--	BAuthen	1.358	.185	7.347	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.977	.076	12.935	***	
P1_14	<--	BAware	1.093	.083	13.135	***	
P1_13	<--	BAware	.835	.074	11.243	***	
P1_12	<--	BAware	.749	.078	9.598	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.152	.128	9.020	***	
P2_3	<--	BReso	1.188	.124	9.572	***	
P2_4	<--	BReso	1.296	.136	9.504	***	
P2_5	<--	BReso	1.190	.132	9.045	***	

	Estimate	S.E.	C.R.	P	Label
P2_6 <-- BReso	.838	.127	6.600	***	

Covariances: (manu - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.422	.059	7.161	***	
e34 <--> e35	.155	.046	3.373	***	
e2_5 <--> e2_6	.104	.042	2.465	.014	

Variances: (manu - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.076	.027	2.856	.004	
res4	.146	.037	3.970	***	
res2	.149	.036	4.121	***	
res1	.310	.056	5.574	***	
res5	.112	.030	3.777	***	
e20	.344	.046	7.409	***	
e21	.437	.056	7.825	***	
e22	.342	.047	7.330	***	
e17	.530	.060	8.838	***	
e16	.708	.077	9.159	***	
e27	.593	.068	8.708	***	
e8	.307	.053	5.769	***	
e9	.367	.053	6.885	***	
e32	.335	.046	7.255	***	
e34	.485	.060	8.150	***	
e35	.496	.060	8.212	***	
e33	.292	.049	5.956	***	
e1_16	.298	.041	7.296	***	
e1_15	.289	.039	7.327	***	
e1_14	.336	.047	7.158	***	
e1_13	.362	.044	8.276	***	
e1_12	.473	.054	8.776	***	
e2_1	.476	.054	8.739	***	
e2_2	.355	.044	8.083	***	
e2_4	.318	.043	7.462	***	
e2_5	.371	.046	8.026	***	
e2_3	.253	.034	7.340	***	
e2_6	.644	.071	9.075	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	152	1243.926	676	.000	1.840
Saturated model	828	.000	0		
Independence model	69	8176.428	759	.000	10.773

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.055	.835	.798	.682
Saturated model	.000	1.000		
Independence model	.318	.189	.115	.173

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.848	.829	.924	.914	.923
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.891	.755	.822
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	567.926	472.783	670.878
Saturated model	.000	.000	.000
Independence model	7417.428	7130.199	7711.142

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.266	1.034	.861	1.222
Saturated model	.000	.000	.000	.000
Independence model	14.893	13.511	12.988	14.046

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.039	.036	.043	1.000
Independence model	.133	.131	.136	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1547.926	1593.812		
Saturated model	1656.000	1905.962		

Model	AIC	BCC	BIC	CAIC
Independence model	8314.428	8335.258		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.820	2.646	3.007	2.903
Saturated model	3.016	3.016	3.016	3.472
Independence model	15.145	14.621	15.680	15.183

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	328	340
Independence model	58	60

Execution time summary

Minimization:	.031
Miscellaneous:	.702
Bootstrap:	.000
Total:	.733



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17. Factor loadings on brand authenticity constrained equal (Model 4)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model BAuthen factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 7:19:29 PM

Title

Amos baseline model bauthen factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 7:19 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (trade)

Your model contains the following variables (trade)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (trade)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	3	0	0	0	0	3
Unlabeled	20	3	28	0	0	51
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)



The model is recursive.
 Sample size = 184
 Variable Summary (service)
 Your model contains the following variables (service)
 Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunct
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (service)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (service)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	3	0	0	0	0	3
Unlabeled	20	3	28	0	0	51
Total	56	3	29	0	0	88

Group number 3 (Group number 3)

Notes for Group (Group number 3)

The model is recursive.

Sample size = 184

Variable Summary (manu)

Your model contains the following variables (manu)

Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34



item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (manu)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (manu)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	3	0	0	0	0	3
Unlabeled	20	3	28	0	0	51
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 828

Number of distinct parameters to be estimated: 156

Degrees of freedom (828 - 156): 672

Result (Default model)

Minimum was achieved

Chi-square = 1239.081

Degrees of freedom = 672

Probability level = .000

trade (trade - Default model)

Estimates (trade - Default model)

Scalar Estimates (trade - Default model)

Maximum Likelihood Estimates

Regression Weights: (trade - Default model)

		Estimate	S.E.	C.R.	P	Label
BAttent	<--- SMEBE	.583	.055	10.648	***	
BAuthen	<--- SMEBE	.627	.035	17.837	***	pbau
BFunc	<--- SMEBE	.644	.055	11.681	***	
BReso	<--- SMEBE	.369	.051	7.215	***	
BAware	<--- SMEBE	.634	.062	10.211	***	
item20	<--- BFunc	1.000				
item21	<--- BFunc	.914	.084	10.919	***	
item22	<--- BFunc	.855	.086	9.989	***	
item17	<--- BFunc	.746	.084	8.883	***	
item16	<--- BFunc	.576	.080	7.205	***	
item27	<--- BAuthen	1.000				

			Estimate	S.E.	C.R.	P	Label
item8	<--	BAuthen	.978	.060	16.350	***	p2
item32	<--	BAttent	1.000				
item34	<--	BAttent	.590	.092	6.380	***	
item35	<--	BAttent	.798	.100	8.017	***	
item33	<--	BAttent	.450	.100	4.495	***	
item9	<--	BAuthen	1.002	.060	16.686	***	p3
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.891	.071	12.471	***	
P1_14	<--	BAware	.750	.073	10.307	***	
P1_13	<--	BAware	.652	.069	9.430	***	
P1_12	<--	BAware	.552	.068	8.084	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.137	.158	7.209	***	
P2_3	<--	BReso	1.404	.179	7.857	***	
P2_4	<--	BReso	1.444	.183	7.876	***	
P2_5	<--	BReso	1.373	.183	7.518	***	
P2_6	<--	BReso	.769	.152	5.052	***	

Covariances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.161	.035	4.624	***	
e34	<-->	e35	.110	.035	3.117	.002	
e2_5	<-->	e2_6	.165	.043	3.841	***	

Variances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.025	.024	1.043	.297	
res4			.089	.039	2.292	.022	
res2			.085	.029	2.939	.003	
res1			.280	.052	5.336	***	
res5			.102	.027	3.762	***	
e20			.284	.039	7.243	***	
e21			.285	.037	7.640	***	
e22			.349	.042	8.206	***	
e17			.386	.045	8.623	***	
e16			.404	.045	9.010	***	
e27			.316	.041	7.717	***	
e8			.411	.050	8.273	***	
e9			.350	.044	7.922	***	
e32			.287	.048	6.007	***	
e34			.400	.046	8.691	***	
e35			.375	.047	7.938	***	
e33			.569	.061	9.256	***	
e1_16			.272	.043	6.375	***	
e1_15			.274	.039	7.037	***	
e1_14			.391	.047	8.334	***	
e1_13			.382	.044	8.620	***	
e1_12			.411	.046	8.940	***	
e2_1			.437	.050	8.791	***	
e2_2			.349	.042	8.303	***	
e2_4			.307	.042	7.229	***	
e2_5			.395	.050	7.928	***	
e2_3			.296	.041	7.277	***	
e2_6			.592	.065	9.177	***	

service (service - Default model)

Estimates (service - Default model)

Scalar Estimates (service - Default model)

Maximum Likelihood Estimates

Regression Weights: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.508	.046	11.162	***	
BAuthen	<--	SMEBE	.627	.035	17.837	***	pbau
BFunc	<--	SMEBE	.632	.047	13.318	***	
BReso	<--	SMEBE	.555	.046	12.194	***	
BAware	<--	SMEBE	.641	.055	11.752	***	
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.031	.076	13.616	***	
item22	<--	BFunc	1.008	.080	12.588	***	
item17	<--	BFunc	.809	.081	9.971	***	
item16	<--	BFunc	.725	.079	9.143	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.978	.060	16.350	***	p2
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.085	.111	9.736	***	
item35	<--	BAttent	1.109	.112	9.867	***	
item33	<--	BAttent	1.055	.111	9.475	***	
item9	<--	BAuthen	1.002	.060	16.686	***	p3
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	1.028	.072	14.359	***	

			Estimate	S.E.	C.R.	P	Label
P1_14	<--	BAware	.912	.063	14.547	***	
P1_13	<--	BAware	.950	.063	15.032	***	
P1_12	<--	BAware	.869	.068	12.685	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.114	.098	11.324	***	
P2_3	<--	BReso	1.148	.095	12.048	***	
P2_4	<--	BReso	1.250	.105	11.939	***	
P2_5	<--	BReso	1.235	.105	11.722	***	
P2_6	<--	BReso	1.131	.105	10.762	***	

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.201	.032	6.253	***	
e34	<-->	e35	.064	.028	2.307	.021	
e2_5	<-->	e2_6	.074	.028	2.651	.008	

Variances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.010	.016	.597	.550	
res4			.040	.015	2.623	.009	
res2			.050	.016	3.037	.002	
res1			.190	.033	5.746	***	
res5			.043	.012	3.478	***	
e20			.224	.028	7.912	***	
e21			.178	.024	7.321	***	
e22			.243	.030	8.021	***	
e17			.343	.039	8.870	***	
e16			.351	.039	9.013	***	
e27			.359	.042	8.571	***	
e8			.261	.032	8.166	***	
e9			.257	.032	8.046	***	
e32			.244	.030	8.076	***	
e34			.286	.036	7.845	***	
e35			.282	.036	7.757	***	
e33			.311	.038	8.277	***	
e1_16			.257	.032	7.996	***	
e1_15			.239	.031	7.778	***	
e1_14			.177	.023	7.666	***	
e1_13			.163	.022	7.329	***	
e1_12			.278	.033	8.476	***	
e2_1			.237	.028	8.531	***	
e2_2			.275	.033	8.459	***	
e2_4			.273	.034	8.153	***	
e2_5			.289	.035	8.189	***	
e2_3			.220	.027	8.086	***	
e2_6			.345	.040	8.562	***	

manu (manu - Default model)

Estimates (manu - Default model)

Scalar Estimates (manu - Default model)

Maximum Likelihood Estimates

Regression Weights: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.459	.056	8.178	***	
BAuthen	<--	SMEBE	.627	.035	17.837	***	pbau
BFunct	<--	SMEBE	.507	.058	8.763	***	
BReso	<--	SMEBE	.504	.059	8.540	***	
BAware	<--	SMEBE	.577	.063	9.144	***	
item20	<--	BFunct	1.000				
item21	<--	BFunct	1.163	.128	9.114	***	
item22	<--	BFunct	1.264	.129	9.827	***	
item17	<--	BFunct	.569	.105	5.444	***	
item16	<--	BFunct	.442	.114	3.893	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.978	.060	16.350	***	p2
item32	<--	BAttent	1.000				
item34	<--	BAttent	.926	.127	7.281	***	
item35	<--	BAttent	.911	.127	7.160	***	
item33	<--	BAttent	1.172	.133	8.827	***	
item9	<--	BAuthen	1.002	.060	16.686	***	p3
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.976	.077	12.743	***	
P1_14	<--	BAware	1.094	.084	12.967	***	
P1_13	<--	BAware	.836	.075	11.121	***	
P1_12	<--	BAware	.750	.079	9.486	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.151	.129	8.901	***	
P2_3	<--	BReso	1.186	.126	9.442	***	
P2_4	<--	BReso	1.293	.138	9.372	***	
P2_5	<--	BReso	1.185	.133	8.905	***	

	Estimate	S.E.	C.R.	P	Label
P2_6 <-- BReso	.835	.129	6.489	***	

Covariances: (manu - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.428	.057	7.440	***	
e34 <--> e35	.154	.046	3.345	***	
e2_5 <--> e2_6	.105	.042	2.492	.013	

Variances: (manu - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.099	.037	2.683	.007	
res4	.143	.036	3.915	***	
res2	.137	.035	3.914	***	
res1	.309	.056	5.551	***	
res5	.113	.030	3.773	***	
e20	.373	.048	7.796	***	
e21	.416	.056	7.404	***	
e22	.286	.049	5.863	***	
e17	.538	.059	9.182	***	
e16	.712	.076	9.387	***	
e27	.557	.069	8.073	***	
e8	.376	.051	7.382	***	
e9	.396	.054	7.397	***	
e32	.338	.046	7.289	***	
e34	.483	.059	8.132	***	
e35	.495	.060	8.202	***	
e33	.292	.049	5.945	***	
e1_16	.299	.041	7.297	***	
e1_15	.290	.040	7.339	***	
e1_14	.336	.047	7.145	***	
e1_13	.361	.044	8.264	***	
e1_12	.472	.054	8.772	***	
e2_1	.474	.054	8.730	***	
e2_2	.354	.044	8.072	***	
e2_4	.318	.043	7.456	***	
e2_5	.373	.046	8.035	***	
e2_3	.253	.034	7.330	***	
e2_6	.645	.071	9.077	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	156	1239.081	672	.000	1.844
Saturated model	828	.000	0		
Independence model	69	8176.428	759	.000	10.773

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.048	.835	.797	.678
Saturated model	.000	1.000		
Independence model	.318	.189	.115	.173

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.848	.829	.924	.914	.924
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.885	.751	.818
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	567.081	472.097	669.877
Saturated model	.000	.000	.000
Independence model	7417.428	7130.199	7711.142

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.257	1.033	.860	1.220
Saturated model	.000	.000	.000	.000
Independence model	14.893	13.511	12.988	14.046

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.039	.036	.043	1.000
Independence model	.133	.131	.136	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1551.081	1598.175		
Saturated model	1656.000	1905.962		

Model	AIC	BCC	BIC	CAIC
Independence model	8314.428	8335.258		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.825	2.652	3.013	2.911
Saturated model	3.016	3.016	3.016	3.472
Independence model	15.145	14.621	15.680	15.183

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	327	339
Independence model	58	60

Execution time summary

Minimization:	.031
Miscellaneous:	.711
Bootstrap:	.000
Total:	.742



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18. Factor loadings on brand attentiveness constrained equal (Model 5)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model BAttent factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 7:29:34 PM

Title

Amos baseline model BAttent factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 7:29 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (trade)

Your model contains the following variables (trade)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (trade)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	4	0	0	0	0	4
Unlabeled	19	3	28	0	0	50
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)



The model is recursive.
 Sample size = 184
 Variable Summary (service)
 Your model contains the following variables (service)
 Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunct
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (service)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (service)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	4	0	0	0	0	4
Unlabeled	19	3	28	0	0	50
Total	56	3	29	0	0	88

Group number 3 (Group number 3)

Notes for Group (Group number 3)

The model is recursive.

Sample size = 184

Variable Summary (manufacturing)

Your model contains the following variables (manufacturing)

Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34



item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (manufacturing)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (manufacturing)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	4	0	0	0	0	4
Unlabeled	19	3	28	0	0	50
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 828

Number of distinct parameters to be estimated: 154

Degrees of freedom (828 - 154): 674

Result (Default model)

Minimum was achieved

Chi-square = 1251.707

Degrees of freedom = 674

Probability level = .000

trade (trade - Default model)

Estimates (trade - Default model)

Scalar Estimates (trade - Default model)

Maximum Likelihood Estimates

Regression Weights: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<---	SMEBE	.485	.031	15.576	***	pbcu
BAuthen	<---	SMEBE	.741	.057	12.991	***	
BFunc	<---	SMEBE	.688	.057	12.109	***	
BReso	<---	SMEBE	.394	.052	7.538	***	
BAware	<---	SMEBE	.669	.064	10.469	***	
item20	<---	BFunc	1.000				
item21	<---	BFunc	.908	.078	11.595	***	
item22	<---	BFunc	.854	.080	10.680	***	
item17	<---	BFunc	.746	.079	9.486	***	
item16	<---	BFunc	.577	.075	7.699	***	
item27	<---	BAuthen	1.000				

			Estimate	S.E.	C.R.	P	Label
item8	<--	BAuthen	.841	.084	9.997	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	.953	.068	13.943	***	p2
item35	<--	BAttent	1.015	.070	14.409	***	p3
item33	<--	BAttent	.985	.069	14.223	***	p4
item9	<--	BAuthen	.882	.082	10.803	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.890	.068	13.085	***	
P1_14	<--	BAware	.749	.069	10.780	***	
P1_13	<--	BAware	.650	.066	9.852	***	
P1_12	<--	BAware	.551	.065	8.448	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.139	.151	7.555	***	
P2_3	<--	BReso	1.401	.170	8.218	***	
P2_4	<--	BReso	1.440	.175	8.234	***	
P2_5	<--	BReso	1.373	.174	7.870	***	
P2_6	<--	BReso	.768	.145	5.281	***	

Covariances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.160	.035	4.609	***	
e34	<-->	e35	.037	.033	1.124	.261	
e2_5	<-->	e2_6	.165	.043	3.844	***	

Variances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.021	.030	.707	.479	
res4			.100	.027	3.733	***	
res2			.086	.029	2.941	.003	
res1			.290	.053	5.465	***	
res5			.101	.026	3.856	***	
e20			.282	.039	7.233	***	
e21			.289	.038	7.707	***	
e22			.347	.042	8.209	***	
e17			.385	.045	8.626	***	
e16			.403	.045	9.010	***	
e27			.300	.042	7.111	***	
e8			.422	.050	8.446	***	
e9			.359	.044	8.077	***	
e32			.380	.048	7.995	***	
e34			.316	.042	7.457	***	
e35			.327	.045	7.295	***	
e33			.500	.059	8.431	***	
e1_16			.271	.043	6.359	***	
e1_15			.275	.039	7.051	***	
e1_14			.391	.047	8.342	***	
e1_13			.383	.044	8.628	***	
e1_12			.411	.046	8.943	***	
e2_1			.437	.050	8.797	***	
e2_2			.347	.042	8.302	***	
e2_4			.309	.042	7.276	***	
e2_5			.394	.050	7.939	***	
e2_3			.297	.041	7.315	***	
e2_6			.593	.065	9.182	***	

service (service - Default model)

Estimates (service - Default model)

Scalar Estimates (service - Default model)

Maximum Likelihood Estimates

Regression Weights: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.485	.031	15.576	***	pbu
BAuthen	<--	SMEBE	.611	.054	11.247	***	
BFunc	<--	SMEBE	.599	.048	12.515	***	
BReso	<--	SMEBE	.525	.046	11.471	***	
BAware	<--	SMEBE	.607	.055	11.085	***	
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.030	.080	12.898	***	
item22	<--	BFunc	1.007	.085	11.912	***	
item17	<--	BFunc	.808	.085	9.452	***	
item16	<--	BFunc	.723	.084	8.654	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.902	.093	9.668	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	.953	.068	13.943	***	p2
item35	<--	BAttent	1.015	.070	14.409	***	p3
item33	<--	BAttent	.985	.069	14.223	***	p4
item9	<--	BAuthen	.987	.098	10.120	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	1.028	.075	13.781	***	

			Estimate	S.E.	C.R.	P	Label
P1_14	<--	BAware	.912	.065	13.960	***	
P1_13	<--	BAware	.950	.066	14.418	***	
P1_12	<--	BAware	.869	.071	12.181	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.114	.104	10.733	***	
P2_3	<--	BReso	1.148	.101	11.419	***	
P2_4	<--	BReso	1.251	.111	11.321	***	
P2_5	<--	BReso	1.237	.111	11.116	***	
P2_6	<--	BReso	1.131	.111	10.196	***	

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.201	.032	6.252	***	
e34	<-->	e35	.073	.027	2.644	.008	
e2_5	<-->	e2_6	.074	.028	2.646	.008	

Variances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.012	.018	.653	.514	
res4			.049	.017	2.853	.004	
res2			.049	.016	2.990	.003	
res1			.189	.033	5.665	***	
res5			.043	.013	3.401	***	
e20			.223	.028	7.889	***	
e21			.178	.024	7.300	***	
e22			.244	.030	8.016	***	
e17			.343	.039	8.863	***	
e16			.351	.039	9.010	***	
e27			.356	.042	8.433	***	
e8			.262	.032	8.288	***	
e9			.255	.032	7.906	***	
e32			.238	.030	7.848	***	
e34			.297	.036	8.206	***	
e35			.289	.036	7.994	***	
e33			.310	.037	8.329	***	
e1_16			.257	.032	7.986	***	
e1_15			.239	.031	7.768	***	
e1_14			.177	.023	7.655	***	
e1_13			.164	.022	7.320	***	
e1_12			.278	.033	8.469	***	
e2_1			.238	.028	8.526	***	
e2_2			.276	.033	8.453	***	
e2_4			.273	.034	8.140	***	
e2_5			.288	.035	8.175	***	
e2_3			.220	.027	8.076	***	
e2_6			.345	.040	8.556	***	

manufacturing (manufacturing - Default model)

Estimates (manufacturing - Default model)

Scalar Estimates (manufacturing - Default model)

Maximum Likelihood Estimates

Regression Weights: (manufacturing - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.485	.031	15.576	***	pbcu
BAuthen	<--	SMEBE	.454	.064	7.091	***	
BFunc	<--	SMEBE	.506	.058	8.678	***	
BReso	<--	SMEBE	.503	.059	8.460	***	
BAware	<--	SMEBE	.576	.064	9.047	***	
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.166	.128	9.085	***	
item22	<--	BFunc	1.266	.129	9.785	***	
item17	<--	BFunc	.568	.105	5.410	***	
item16	<--	BFunc	.442	.114	3.872	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.478	.201	7.370	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	.953	.068	13.943	***	p2
item35	<--	BAttent	1.015	.070	14.409	***	p3
item33	<--	BAttent	.985	.069	14.223	***	p4
item9	<--	BAuthen	1.357	.189	7.175	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.978	.077	12.750	***	
P1_14	<--	BAware	1.093	.085	12.923	***	
P1_13	<--	BAware	.835	.075	11.076	***	
P1_12	<--	BAware	.749	.079	9.456	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.151	.130	8.860	***	
P2_3	<--	BReso	1.187	.126	9.401	***	
P2_4	<--	BReso	1.294	.139	9.330	***	
P2_5	<--	BReso	1.188	.134	8.874	***	

	Estimate	S.E.	C.R.	P	Label
P2_6 <-- BReso	.836	.129	6.470	***	

Covariances: (manufacturing - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.428	.058	7.443	***	
e34 <--> e35	.135	.046	2.958	.003	
e2_5 <--> e2_6	.104	.042	2.478	.013	

Variances: (manufacturing - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.076	.027	2.821	.005	
res4	.148	.035	4.287	***	
res2	.134	.035	3.870	***	
res1	.308	.056	5.527	***	
res5	.111	.030	3.726	***	
e20	.373	.048	7.806	***	
e21	.415	.056	7.393	***	
e22	.286	.049	5.860	***	
e17	.538	.059	9.185	***	
e16	.712	.076	9.388	***	
e27	.593	.068	8.704	***	
e8	.306	.053	5.728	***	
e9	.368	.054	6.872	***	
e32	.332	.045	7.304	***	
e34	.473	.059	7.997	***	
e35	.469	.060	7.804	***	
e33	.340	.046	7.416	***	
e1_16	.299	.041	7.292	***	
e1_15	.288	.039	7.312	***	
e1_14	.337	.047	7.161	***	
e1_13	.362	.044	8.273	***	
e1_12	.473	.054	8.774	***	
e2_1	.475	.054	8.733	***	
e2_2	.355	.044	8.074	***	
e2_4	.319	.043	7.458	***	
e2_5	.372	.046	8.027	***	
e2_3	.253	.034	7.329	***	
e2_6	.645	.071	9.075	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	154	1251.707	674	.000	1.857
Saturated model	828	.000	0		
Independence model	69	8176.428	759	.000	10.773

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.060	.833	.794	.678
Saturated model	.000	1.000		
Independence model	.318	.189	.115	.173

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.847	.828	.923	.912	.922
Saturated model	1.000	1.000	1.000	1.000	1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.888	.752	.819
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	577.707	482.087	681.136
Saturated model	.000	.000	.000
Independence model	7417.428	7130.199	7711.142

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.280	1.052	.878	1.241
Saturated model	.000	.000	.000	.000
Independence model	14.893	13.511	12.988	14.046

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.040	.036	.043	1.000
Independence model	.133	.131	.136	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1559.707	1606.198		
Saturated model	1656.000	1905.962		

Model	AIC	BCC	BIC	CAIC
Independence model	8314.428	8335.258		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.841	2.667	3.029	2.926
Saturated model	3.016	3.016	3.016	3.472
Independence model	15.145	14.621	15.680	15.183

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	325	337
Independence model	58	60

Execution time summary

Minimization:	.032
Miscellaneous:	.632
Bootstrap:	.000
Total:	.664



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19. Model 5 (a)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model BAttent factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 7:35:20 PM

Title

Amos baseline model BAttent factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 7:35 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (service)

Your model contains the following variables (service)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthn

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (service)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (service)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	4	0	0	0	0	4
Unlabeled	19	3	28	0	0	50
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)



The model is recursive.
 Sample size = 184
 Variable Summary (manufacturing)
 Your model contains the following variables (manufacturing)
 Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunct
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (manufacturing)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (manufacturing)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	4	0	0	0	0	4
Unlabeled	19	3	28	0	0	50
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 104

Degrees of freedom (552 - 104): 448

Result (Default model)

Minimum was achieved

Chi-square = 815.319

Degrees of freedom = 448

Probability level = .000

service (service - Default model)

Estimates (service - Default model)

Scalar Estimates (service - Default model)

Maximum Likelihood Estimates



Regression Weights: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.488	.037	13.266	***	pbcu
BAuthen	<--	SMEBE	.626	.055	11.332	***	
BFunct	<--	SMEBE	.614	.049	12.520	***	
BReso	<--	SMEBE	.538	.047	11.516	***	
BAware	<--	SMEBE	.622	.056	11.123	***	
item20	<--	BFunct	1.000				
item21	<--	BFunct	1.031	.078	13.222	***	
item22	<--	BFunct	1.007	.082	12.210	***	
item17	<--	BFunct	.808	.083	9.678	***	
item16	<--	BFunct	.723	.082	8.863	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.901	.091	9.928	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.023	.085	12.053	***	p2
item35	<--	BAttent	1.035	.085	12.120	***	p3
item33	<--	BAttent	1.104	.085	12.974	***	p4
item9	<--	BAuthen	.987	.095	10.406	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	1.028	.073	14.038	***	
P1_14	<--	BAware	.912	.064	14.220	***	
P1_13	<--	BAware	.950	.065	14.684	***	
P1_12	<--	BAware	.869	.070	12.402	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.115	.101	10.993	***	
P2_3	<--	BReso	1.149	.098	11.687	***	
P2_4	<--	BReso	1.252	.108	11.586	***	
P2_5	<--	BReso	1.237	.109	11.379	***	
P2_6	<--	BReso	1.132	.108	10.438	***	

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.201	.032	6.256	***	
e34	<-->	e35	.072	.027	2.613	.009	
e2_5	<-->	e2_6	.074	.028	2.647	.008	

Variances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.012	.018	.651	.515	
res4			.043	.016	2.769	.006	
res2			.050	.016	3.020	.003	
res1			.190	.033	5.706	***	
res5			.043	.013	3.424	***	
e20			.223	.028	7.896	***	
e21			.178	.024	7.305	***	
e22			.243	.030	8.018	***	
e17			.343	.039	8.867	***	
e16			.351	.039	9.012	***	
e27			.356	.042	8.436	***	
e8			.263	.032	8.299	***	
e9			.254	.032	7.909	***	
e32			.241	.030	8.035	***	
e34			.292	.036	8.109	***	
e35			.291	.036	8.070	***	
e33			.304	.038	8.095	***	
e1_16			.257	.032	7.990	***	
e1_15			.239	.031	7.770	***	
e1_14			.177	.023	7.658	***	
e1_13			.164	.022	7.326	***	
e1_12			.278	.033	8.472	***	
e2_1			.238	.028	8.532	***	
e2_2			.275	.033	8.454	***	
e2_4			.273	.033	8.146	***	
e2_5			.288	.035	8.181	***	
e2_3			.220	.027	8.083	***	
e2_6			.345	.040	8.560	***	

manufacturing (manufacturing - Default model)

Estimates (manufacturing - Default model)

Scalar Estimates (manufacturing - Default model)

Maximum Likelihood Estimates

Regression Weights: (manufacturing - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.488	.037	13.266	***	pbcu
BAuthen	<--	SMEBE	.463	.064	7.210	***	
BFunct	<--	SMEBE	.515	.059	8.792	***	
BReso	<--	SMEBE	.511	.060	8.553	***	
BAware	<--	SMEBE	.583	.064	9.138	***	
item20	<--	BFunct	1.000				
item21	<--	BFunct	1.166	.127	9.211	***	

			Estimate	S.E.	C.R.	P	Label
item22	<--	BFunc	1.266	.127	9.927	***	
item17	<--	BFunc	.568	.104	5.483	***	
item16	<--	BFunc	.442	.113	3.925	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.474	.196	7.503	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.023	.085	12.053	***	p2
item35	<--	BAttent	1.035	.085	12.120	***	p3
item33	<--	BAttent	1.104	.085	12.974	***	p4
item9	<--	BAuthen	1.354	.185	7.300	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.978	.076	12.874	***	
P1_14	<--	BAware	1.093	.084	13.057	***	
P1_13	<--	BAware	.835	.075	11.185	***	
P1_12	<--	BAware	.749	.078	9.548	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.151	.128	8.975	***	
P2_3	<--	BReso	1.187	.125	9.524	***	
P2_4	<--	BReso	1.294	.137	9.452	***	
P2_5	<--	BReso	1.187	.132	8.989	***	
P2_6	<--	BReso	.836	.128	6.551	***	

Covariances: (manufacturing - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.428	.057	7.443	***	
e34	<-->	e35	.137	.046	2.993	.003	
e2_5	<-->	e2_6	.105	.042	2.482	.013	

Variances: (manufacturing - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.076	.027	2.838	.005	
res4	.133	.032	4.140	***	
res2	.134	.035	3.893	***	
res1	.310	.056	5.562	***	
res5	.112	.030	3.769	***	
e20	.373	.048	7.815	***	
e21	.415	.056	7.402	***	
e22	.286	.049	5.878	***	
e17	.538	.059	9.186	***	
e16	.712	.076	9.389	***	
e27	.592	.068	8.703	***	
e8	.307	.053	5.762	***	
e9	.368	.053	6.896	***	
e32	.341	.045	7.570	***	
e34	.470	.059	7.919	***	
e35	.476	.060	7.904	***	
e33	.319	.046	6.921	***	
e1_16	.299	.041	7.295	***	
e1_15	.288	.039	7.318	***	
e1_14	.337	.047	7.161	***	
e1_13	.362	.044	8.274	***	
e1_12	.473	.054	8.775	***	
e2_1	.475	.054	8.734	***	
e2_2	.355	.044	8.077	***	
e2_4	.319	.043	7.461	***	
e2_5	.372	.046	8.031	***	
e2_3	.253	.034	7.333	***	
e2_6	.645	.071	9.077	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	104	815.319	448	.000	1.820
Saturated model	552	.000	0		
Independence model	46	5864.187	506	.000	11.589

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.048	.834	.796	.677
Saturated model	.000	1.000		
Independence model	.335	.174	.098	.159

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.861	.843	.932	.923	.931
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.885	.762	.825

Model	PRATIO	PNFI	PCFI
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	367.319	291.205	451.261
Saturated model	.000	.000	.000
Independence model	5358.187	5115.009	5607.836

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.228	1.004	.796	1.233
Saturated model	.000	.000	.000	.000
Independence model	16.022	14.640	13.975	15.322

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.047	.042	.052	.800
Independence model	.170	.166	.174	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1023.319	1054.716		
Saturated model	1104.000	1270.642		
Independence model	5956.187	5970.074		

ECVI

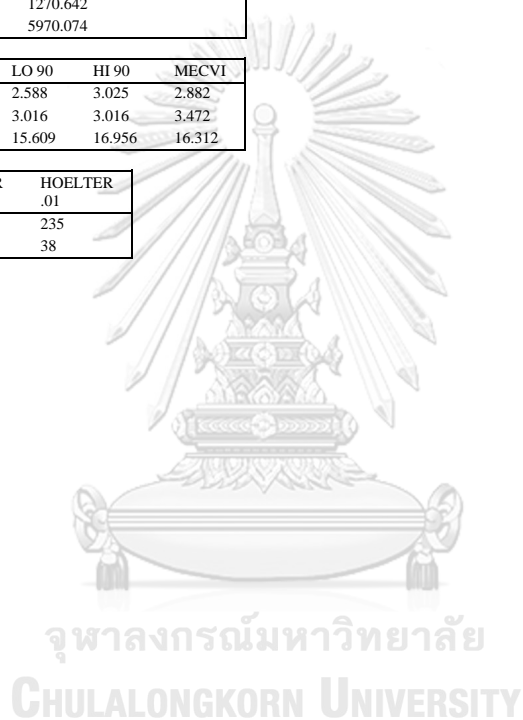
Model	ECVI	LO 90	HI 90	MECVI
Default model	2.796	2.588	3.025	2.882
Saturated model	3.016	3.016	3.016	3.472
Independence model	16.274	15.609	16.956	16.312

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	225	235
Independence model	36	38

Execution time summary

Minimization:	.016
Miscellaneous:	.548
Bootstrap:	.000
Total:	.564



20. Model 5 (b)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model B\Attent factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 7:39:28 PM

Title

Amos baseline model B\Attent factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 7:39 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (trade)

Your model contains the following variables (trade)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (trade)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	4	0	0	0	0	4
Unlabeled	19	3	28	0	0	50
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)



The model is recursive.
 Sample size = 184
 Variable Summary (manufacturing)
 Your model contains the following variables (manufacturing)
 Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunct
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (manufacturing)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (manufacturing)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	4	0	0	0	0	4
Unlabeled	19	3	28	0	0	50
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 104

Degrees of freedom (552 - 104): 448

Result (Default model)

Minimum was achieved

Chi-square = 820.717

Degrees of freedom = 448

Probability level = .000

trade (trade - Default model)

Estimates (trade - Default model)

Scalar Estimates (trade - Default model)

Maximum Likelihood Estimates



Regression Weights: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.480	.041	11.682	***	pbcu
BAuthen	<--	SMEBE	.717	.058	12.441	***	
BFunc	<--	SMEBE	.663	.057	11.560	***	
BReso	<--	SMEBE	.380	.052	7.287	***	
BAware	<--	SMEBE	.647	.064	10.067	***	
item20	<--	BFunc	1.000				
item21	<--	BFunc	.910	.081	11.192	***	
item22	<--	BFunc	.854	.083	10.294	***	
item17	<--	BFunc	.746	.082	9.143	***	
item16	<--	BFunc	.576	.078	7.422	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.839	.087	9.612	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	.831	.083	9.980	***	p2
item35	<--	BAttent	.925	.087	10.605	***	p3
item33	<--	BAttent	.902	.086	10.542	***	p4
item9	<--	BAuthen	.880	.085	10.379	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.890	.070	12.730	***	
P1_14	<--	BAware	.749	.071	10.507	***	
P1_13	<--	BAware	.651	.068	9.606	***	
P1_12	<--	BAware	.551	.067	8.241	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.139	.155	7.366	***	
P2_3	<--	BReso	1.401	.175	8.014	***	
P2_4	<--	BReso	1.440	.179	8.030	***	
P2_5	<--	BReso	1.372	.179	7.673	***	
P2_6	<--	BReso	.768	.149	5.150	***	

Covariances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.160	.035	4.613	***	
e34	<-->	e35	.059	.033	1.777	.076	
e2_5	<-->	e2_6	.165	.043	3.843	***	

Variances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.019	.030	.657	.511	
res4			.099	.030	3.339	***	
res2			.086	.029	2.942	.003	
res1			.288	.053	5.415	***	
res5			.101	.027	3.800	***	
e20			.283	.039	7.226	***	
e21			.288	.038	7.681	***	
e22			.348	.042	8.201	***	
e17			.385	.045	8.622	***	
e16			.404	.045	9.008	***	
e27			.298	.042	7.097	***	
e8			.423	.050	8.451	***	
e9			.360	.044	8.089	***	
e32			.355	.047	7.570	***	
e34			.340	.043	7.901	***	
e35			.345	.045	7.593	***	
e33			.519	.061	8.507	***	
e1_16			.271	.043	6.352	***	
e1_15			.275	.039	7.041	***	
e1_14			.391	.047	8.336	***	
e1_13			.383	.044	8.623	***	
e1_12			.411	.046	8.940	***	
e2_1			.436	.050	8.792	***	
e2_2			.347	.042	8.297	***	
e2_4			.309	.042	7.260	***	
e2_5			.394	.050	7.932	***	
e2_3			.297	.041	7.299	***	
e2_6			.593	.065	9.179	***	

manufacturing (manufacturing - Default model)

Estimates (manufacturing - Default model)

Scalar Estimates (manufacturing - Default model)

Maximum Likelihood Estimates

Regression Weights: (manufacturing - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.480	.041	11.682	***	pbcu
BAuthen	<--	SMEBE	.444	.064	6.925	***	
BFunc	<--	SMEBE	.497	.059	8.484	***	
BReso	<--	SMEBE	.496	.060	8.301	***	
BAware	<--	SMEBE	.568	.064	8.878	***	
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.165	.130	8.955	***	

			Estimate	S.E.	C.R.	P	Label
item22	<--	BFunc	1.265	.131	9.634	***	
item17	<--	BFunc	.567	.106	5.333	***	
item16	<--	BFunc	.441	.116	3.817	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.484	.205	7.226	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	.831	.083	9.980	***	p2
item35	<--	BAttent	.925	.087	10.605	***	p3
item33	<--	BAttent	.902	.086	10.542	***	p4
item9	<--	BAuthen	1.363	.194	7.041	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.978	.078	12.617	***	
P1_14	<--	BAware	1.093	.085	12.784	***	
P1_13	<--	BAware	.835	.076	10.961	***	
P1_12	<--	BAware	.749	.080	9.358	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.151	.132	8.742	***	
P2_3	<--	BReso	1.187	.128	9.274	***	
P2_4	<--	BReso	1.294	.141	9.203	***	
P2_5	<--	BReso	1.187	.136	8.754	***	
P2_6	<--	BReso	.837	.131	6.386	***	

Covariances: (manufacturing - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.428	.058	7.442	***	
e34	<-->	e35	.145	.046	3.153	.002	
e2_5	<-->	e2_6	.104	.042	2.473	.013	

Variances: (manufacturing - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.076	.027	2.797	.005	
res4	.174	.041	4.255	***	
res2	.135	.035	3.849	***	
res1	.305	.056	5.482	***	
res5	.111	.030	3.676	***	
e20	.373	.048	7.791	***	
e21	.415	.056	7.379	***	
e22	.286	.049	5.844	***	
e17	.538	.059	9.183	***	
e16	.713	.076	9.388	***	
e27	.595	.068	8.707	***	
e8	.305	.054	5.690	***	
e9	.367	.054	6.843	***	
e32	.316	.047	6.691	***	
e34	.488	.060	8.193	***	
e35	.475	.060	7.867	***	
e33	.349	.047	7.447	***	
e1_16	.299	.041	7.289	***	
e1_15	.288	.039	7.307	***	
e1_14	.337	.047	7.159	***	
e1_13	.362	.044	8.272	***	
e1_12	.473	.054	8.774	***	
e2_1	.475	.054	8.730	***	
e2_2	.355	.044	8.070	***	
e2_4	.319	.043	7.455	***	
e2_5	.372	.046	8.024	***	
e2_3	.253	.035	7.323	***	
e2_6	.644	.071	9.073	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	104	820.717	448	.000	1.832
Saturated model	552	.000	0		
Independence model	46	4708.648	506	.000	9.306

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.059	.835	.797	.678
Saturated model	.000	1.000		
Independence model	.294	.237	.167	.217

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.826	.803	.913	.900	.911
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.885	.731	.807

Model	PRATIO	PNFI	PCFI
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	372.717	296.237	457.021
Saturated model	.000	.000	.000
Independence model	4202.648	3986.627	4425.977

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.242	1.018	.809	1.249
Saturated model	.000	.000	.000	.000
Independence model	12.865	11.483	10.892	12.093

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.048	.043	.053	.768
Independence model	.151	.147	.155	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1028.717	1060.113		
Saturated model	1104.000	1270.642		
Independence model	4800.648	4814.535		

ECVI

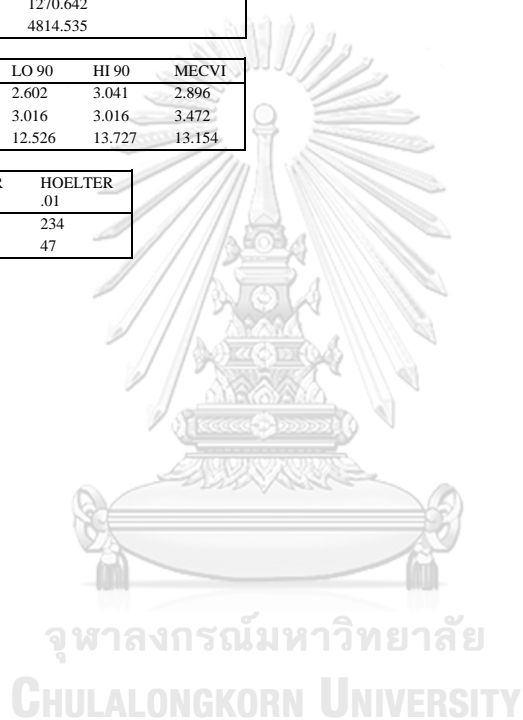
Model	ECVI	LO 90	HI 90	MECVI
Default model	2.811	2.602	3.041	2.896
Saturated model	3.016	3.016	3.016	3.472
Independence model	13.117	12.526	13.727	13.154

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	224	234
Independence model	45	47

Execution time summary

Minimization:	.000
Miscellaneous:	.702
Bootstrap:	.000
Total:	.702



21. Factor loadings on brand resonance constrained equal (Model 6)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model BReso factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 7:46:12 PM

Title

Amos baseline model breso factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 7:46 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (service)

Your model contains the following variables (service)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (service)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (service)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	5	0	0	0	0	5
Unlabeled	18	3	28	0	0	49
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)



The model is recursive.
 Sample size = 184
 Variable Summary (manu)
 Your model contains the following variables (manu)
 Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunc
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (manu)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (manu)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	5	0	0	0	0	5
Unlabeled	18	3	28	0	0	49
Total	56	3	29	0	0	88

Group number 3 (Group number 3)

Notes for Group (Group number 3)

The model is recursive.

Sample size = 184

Variable Summary (trade)

Your model contains the following variables (trade)

Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34



item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunc
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (trade)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	5	0	0	0	0	5
Unlabeled	18	3	28	0	0	49
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 828

Number of distinct parameters to be estimated: 152

Degrees of freedom (828 - 152): 676

Result (Default model)

Minimum was achieved

Chi-square = 1240.529

Degrees of freedom = 676

Probability level = .000

service (service - Default model)

Estimates (service - Default model)

Scalar Estimates (service - Default model)

Maximum Likelihood Estimates

Regression Weights: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<---	SMEBE	.504	.048	10.452	***	
BAuthen	<---	SMEBE	.643	.057	11.213	***	
BFunc	<---	SMEBE	.628	.051	12.231	***	
BReso	<---	SMEBE	.540	.043	12.673	***	
BAware	<---	SMEBE	.638	.058	10.988	***	
item20	<---	BFunc	1.000				
item21	<---	BFunc	1.032	.076	13.532	***	
item22	<---	BFunc	1.009	.081	12.519	***	
item17	<---	BFunc	.808	.082	9.894	***	
item16	<---	BFunc	.723	.080	9.066	***	
item27	<---	BAuthen	1.000				



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			Estimate	S.E.	C.R.	P	Label
item8	<--	BAuthen	.898	.088	10.197	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.087	.113	9.660	***	
item35	<--	BAttent	1.112	.114	9.795	***	
item33	<--	BAttent	1.057	.112	9.404	***	
item9	<--	BAuthen	.984	.092	10.703	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	1.028	.072	14.302	***	
P1_14	<--	BAware	.911	.063	14.479	***	
P1_13	<--	BAware	.950	.064	14.959	***	
P1_12	<--	BAware	.869	.069	12.632	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.132	.071	15.987	***	p2
P2_3	<--	BReso	1.215	.071	17.102	***	p3
P2_4	<--	BReso	1.316	.077	17.099	***	p4
P2_5	<--	BReso	1.261	.076	16.484	***	p5
P2_6	<--	BReso	.971	.073	13.266	***	p6

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.201	.032	6.263	***	
e34	<-->	e35	.063	.028	2.285	.022	
e2_5	<-->	e2_6	.082	.028	2.921	.003	

Variances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.012	.018	.669	.503	
res4			.040	.015	2.631	.009	
res2			.050	.016	3.034	.002	
res1			.189	.033	5.728	***	
res5			.042	.012	3.634	***	
e20			.224	.028	7.911	***	
e21			.178	.024	7.312	***	
e22			.242	.030	8.011	***	
e17			.344	.039	8.871	***	
e16			.352	.039	9.015	***	
e27			.354	.042	8.422	***	
e8			.264	.032	8.310	***	
e9			.255	.032	7.915	***	
e32			.245	.030	8.082	***	
e34			.285	.036	7.831	***	
e35			.282	.036	7.739	***	
e33			.311	.038	8.269	***	
e1_16			.257	.032	7.995	***	
e1_15			.239	.031	7.774	***	
e1_14			.177	.023	7.669	***	
e1_13			.164	.022	7.334	***	
e1_12			.278	.033	8.475	***	
e2_1			.243	.028	8.619	***	
e2_2			.277	.033	8.507	***	
e2_4			.264	.033	8.055	***	
e2_5			.287	.035	8.260	***	
e2_3			.215	.027	7.979	***	
e2_6			.369	.041	8.919	***	

manu (manu - Default model)

Estimates (manu - Default model)

Scalar Estimates (manu - Default model)

Maximum Likelihood Estimates

Regression Weights: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.451	.057	7.846	***	
BAuthen	<--	SMEBE	.450	.065	6.947	***	
BFunc	<--	SMEBE	.501	.059	8.441	***	
BReso	<--	SMEBE	.487	.047	10.348	***	
BAware	<--	SMEBE	.572	.065	8.830	***	
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.164	.129	9.020	***	
item22	<--	BFunc	1.263	.130	9.703	***	
item17	<--	BFunc	.567	.106	5.373	***	
item16	<--	BFunc	.442	.115	3.849	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.479	.203	7.301	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	.920	.128	7.182	***	
item35	<--	BAttent	.908	.128	7.077	***	
item33	<--	BAttent	1.167	.134	8.705	***	
item9	<--	BAuthen	1.359	.191	7.112	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.977	.077	12.673	***	

			Estimate	S.E.	C.R.	P	Label
P1_14	<--	BAware	1.093	.085	12.855	***	
P1_13	<--	BAware	.835	.076	11.016	***	
P1_12	<--	BAware	.749	.080	9.407	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.132	.071	15.987	***	p2
P2_3	<--	BReso	1.215	.071	17.102	***	p3
P2_4	<--	BReso	1.316	.077	17.099	***	p4
P2_5	<--	BReso	1.261	.076	16.484	***	p5
P2_6	<--	BReso	.971	.073	13.266	***	p6

Covariances: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.428	.058	7.440	***	
e34	<-->	e35	.155	.046	3.354	***	
e2_5	<-->	e2_6	.097	.042	2.307	.021	

Variances: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.075	.027	2.799	.005	
res4			.147	.037	3.932	***	
res2			.136	.035	3.874	***	
res1			.305	.056	5.497	***	
res5			.105	.024	4.358	***	
e20			.372	.048	7.786	***	
e21			.415	.056	7.380	***	
e22			.287	.049	5.864	***	
e17			.538	.059	9.182	***	
e16			.712	.076	9.387	***	
e27			.593	.068	8.704	***	
e8			.306	.053	5.726	***	
e9			.367	.054	6.861	***	
e32			.336	.046	7.230	***	
e34			.485	.060	8.127	***	
e35			.496	.061	8.188	***	
e33			.293	.049	5.920	***	
e1_16			.298	.041	7.290	***	
e1_15			.288	.039	7.317	***	
e1_14			.337	.047	7.158	***	
e1_13			.362	.044	8.273	***	
e1_12			.473	.054	8.774	***	
e2_1			.481	.054	8.840	***	
e2_2			.363	.044	8.320	***	
e2_4			.316	.041	7.610	***	
e2_5			.364	.046	7.977	***	
e2_3			.256	.034	7.504	***	
e2_6			.640	.071	8.975	***	

trade (trade - Default model)

Estimates (trade - Default model)

Scalar Estimates (trade - Default model)

Maximum Likelihood Estimates

Regression Weights: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.594	.057	10.349	***	
BAuthen	<--	SMEBE	.711	.059	12.118	***	
BFunc	<--	SMEBE	.655	.058	11.206	***	
BReso	<--	SMEBE	.407	.042	9.680	***	
BAware	<--	SMEBE	.647	.065	9.946	***	
item20	<--	BFunc	1.000				
item21	<--	BFunc	.916	.082	11.143	***	
item22	<--	BFunc	.857	.084	10.200	***	
item17	<--	BFunc	.745	.083	9.031	***	
item16	<--	BFunc	.575	.079	7.318	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.838	.088	9.572	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	.588	.090	6.520	***	
item35	<--	BAttent	.795	.097	8.180	***	
item33	<--	BAttent	.450	.098	4.595	***	
item9	<--	BAuthen	.876	.085	10.292	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.891	.070	12.652	***	
P1_14	<--	BAware	.750	.072	10.455	***	
P1_13	<--	BAware	.652	.068	9.565	***	
P1_12	<--	BAware	.552	.067	8.205	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.132	.071	15.987	***	p2
P2_3	<--	BReso	1.215	.071	17.102	***	p3
P2_4	<--	BReso	1.316	.077	17.099	***	p4
P2_5	<--	BReso	1.261	.076	16.484	***	p5

	Estimate	S.E.	C.R.	P	Label
P2_6 <--> BReso	.971	.073	13.266	***	p6

Covariances: (trade - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.162	.035	4.647	***	
e34 <--> e35	.111	.035	3.142	.002	
e2_5 <--> e2_6	.144	.042	3.390	***	

Variances: (trade - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.021	.029	.713	.476	
res4	.090	.039	2.321	.020	
res2	.088	.029	3.037	.002	
res1	.279	.052	5.372	***	
res5	.109	.021	5.118	***	
e20	.285	.039	7.265	***	
e21	.284	.037	7.642	***	
e22	.347	.042	8.204	***	
e17	.387	.045	8.635	***	
e16	.405	.045	9.019	***	
e27	.297	.042	7.105	***	
e8	.422	.050	8.469	***	
e9	.362	.045	8.137	***	
e32	.286	.048	6.002	***	
e34	.400	.046	8.705	***	
e35	.377	.047	7.974	***	
e33	.568	.061	9.259	***	
e1_16	.272	.043	6.391	***	
e1_15	.275	.039	7.057	***	
e1_14	.391	.047	8.338	***	
e1_13	.382	.044	8.623	***	
e1_12	.411	.046	8.940	***	
e2_1	.431	.049	8.750	***	
e2_2	.340	.041	8.225	***	
e2_4	.321	.042	7.635	***	
e2_5	.394	.049	8.104	***	
e2_3	.324	.041	7.946	***	
e2_6	.580	.065	8.926	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	152	1240.529	676	.000	1.835
Saturated model	828	.000	0		
Independence model	69	8176.428	759	.000	10.773

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.046	.835	.798	.682
Saturated model	.000	1.000		
Independence model	.318	.189	.115	.173

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.848	.830	.925	.915	.924
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.891	.756	.823
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	564.529	469.578	667.297
Saturated model	.000	.000	.000
Independence model	7417.428	7130.199	7711.142

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.260	1.028	.855	1.215
Saturated model	.000	.000	.000	.000
Independence model	14.893	13.511	12.988	14.046

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.039	.036	.042	1.000
Independence model	.133	.131	.136	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1544.529	1590.416		
Saturated model	1656.000	1905.962		

Model	AIC	BCC	BIC	CAIC
Independence model	8314.428	8335.258		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.813	2.640	3.001	2.897
Saturated model	3.016	3.016	3.016	3.472
Independence model	15.145	14.621	15.680	15.183

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	329	341
Independence model	58	60

Execution time summary

Minimization:	.022
Miscellaneous:	.880
Bootstrap:	.000
Total:	.902



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22. Factor loadings of item P1_12 on brand awareness constrained equal (Model 7 c)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model BAware P1_12 factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 7:57:54 PM

Title

Amos baseline model baware p1_13 factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 7:57 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (trade)

Your model contains the following variables (trade)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (trade)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	1	0	0	0	0	1
Unlabeled	22	3	28	0	0	53



	Weights	Covariances	Variances	Means	Intercepts	Total
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)

The model is recursive.

Sample size = 184

Variable Summary (service)

Your model contains the following variables (service)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e52

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (service)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (service)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	1	0	0	0	0	1
Unlabeled	22	3	28	0	0	53
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 107

Degrees of freedom (552 - 107): 445

Result (Default model)

Minimum was achieved

Chi-square = 849.958

Degrees of freedom = 445

Probability level = .000



trade (trade - Default model)
 Estimates (trade - Default model)
 Scalar Estimates (trade - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (trade - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.595	.057	10.368	***	
BAuthen <-- SMEBE	.711	.059	12.118	***	
BFunc <-- SMEBE	.655	.058	11.200	***	
BReso <-- SMEBE	.377	.053	7.174	***	
BAware <-- SMEBE	.601	.060	9.961	***	
item20 <-- BFunc	1.000				
item21 <-- BFunc	.915	.082	11.142	***	
item22 <-- BFunc	.856	.084	10.189	***	
item17 <-- BFunc	.746	.082	9.038	***	
item16 <-- BFunc	.575	.079	7.326	***	
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	.836	.088	9.557	***	
item32 <-- BAttent	1.000				
item34 <-- BAttent	.586	.090	6.509	***	
item35 <-- BAttent	.793	.097	8.181	***	
item33 <-- BAttent	.448	.098	4.577	***	
item9 <-- BAuthen	.875	.085	10.289	***	
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	.961	.076	12.567	***	
P1_14 <-- BAware	.813	.078	10.434	***	
P1_13 <-- BAware	.712	.074	9.650	***	
P1_12 <-- BAware	.737	.049	15.140	***	
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	1.137	.156	7.308	***	
P2_3 <-- BReso	1.404	.176	7.970	***	
P2_4 <-- BReso	1.443	.181	7.985	***	
P2_5 <-- BReso	1.372	.180	7.621	***	
P2_6 <-- BReso	.768	.150	5.121	***	

Covariances: (trade - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.161	.035	4.639	***	
e34 <--> e35	.111	.035	3.157	.002	
e2_5 <--> e2_6	.165	.043	3.845	***	

Variances: (trade - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.021	.029	.730	.466	
res4	.090	.039	2.310	.021	
res2	.088	.029	3.040	.002	
res1	.233	.044	5.305	***	
res5	.101	.027	3.795	***	
e20	.285	.039	7.257	***	
e21	.284	.037	7.640	***	
e22	.348	.042	8.207	***	
e17	.386	.045	8.631	***	
e16	.405	.045	9.016	***	
e27	.296	.042	7.083	***	
e8	.423	.050	8.470	***	
e9	.363	.045	8.133	***	
e32	.285	.048	5.982	***	
e34	.401	.046	8.712	***	
e35	.377	.047	7.981	***	
e33	.569	.061	9.262	***	
e1_16	.298	.042	7.090	***	
e1_15	.280	.040	7.060	***	
e1_14	.390	.047	8.297	***	
e1_13	.377	.044	8.560	***	
e1_12	.406	.047	8.626	***	
e2_1	.437	.050	8.795	***	
e2_2	.349	.042	8.310	***	
e2_4	.307	.042	7.246	***	
e2_5	.395	.050	7.939	***	
e2_3	.296	.041	7.284	***	
e2_6	.592	.065	9.180	***	

service (service - Default model)
 Estimates (service - Default model)
 Scalar Estimates (service - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (service - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.505	.048	10.479	***	
BAuthen <-- SMEBE	.643	.057	11.200	***	
BFunc <-- SMEBE	.628	.051	12.238	***	
BReso <-- SMEBE	.552	.049	11.336	***	

			Estimate	S.E.	C.R.	P	Label
BAware	<--	SMEBE	.672	.059	11.357	***	
item20	<--	BFunct	1.000				
item21	<--	BFunct	1.031	.076	13.542	***	
item22	<--	BFunct	1.008	.081	12.514	***	
item17	<--	BFunct	.808	.082	9.907	***	
item16	<--	BFunct	.723	.080	9.076	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.900	.088	10.198	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.086	.112	9.675	***	
item35	<--	BAttent	1.110	.113	9.802	***	
item33	<--	BAttent	1.056	.112	9.416	***	
item9	<--	BAuthen	.986	.092	10.694	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.975	.064	15.301	***	
P1_14	<--	BAware	.863	.056	15.477	***	
P1_13	<--	BAware	.897	.056	16.001	***	
P1_12	<--	BAware	.737	.049	15.140	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.115	.099	11.257	***	
P2_3	<--	BReso	1.148	.096	11.967	***	
P2_4	<--	BReso	1.251	.105	11.862	***	
P2_5	<--	BReso	1.236	.106	11.648	***	
P2_6	<--	BReso	1.132	.106	10.688	***	

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.201	.032	6.258	***	
e34	<-->	e35	.064	.028	2.301	.021	
e2_5	<-->	e2_6	.075	.028	2.653	.008	

Variances: (service - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.011	.018	.643	.520	
res4	.040	.015	2.608	.009	
res2	.050	.016	3.044	.002	
res1	.214	.036	5.986	***	
res5	.043	.012	3.463	***	
e20	.223	.028	7.905	***	
e21	.178	.024	7.313	***	
e22	.243	.030	8.019	***	
e17	.343	.039	8.870	***	
e16	.351	.039	9.014	***	
e27	.355	.042	8.438	***	
e8	.263	.032	8.309	***	
e9	.255	.032	7.919	***	
e32	.245	.030	8.081	***	
e34	.285	.036	7.843	***	
e35	.282	.036	7.756	***	
e33	.311	.038	8.276	***	
e1_16	.252	.032	7.780	***	
e1_15	.236	.031	7.736	***	
e1_14	.176	.023	7.648	***	
e1_13	.165	.022	7.349	***	
e1_12	.290	.033	8.742	***	
e2_1	.238	.028	8.534	***	
e2_2	.275	.033	8.456	***	
e2_4	.273	.033	8.151	***	
e2_5	.288	.035	8.187	***	
e2_3	.220	.027	8.086	***	
e2_6	.345	.040	8.563	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	107	849.958	445	.000	1.910
Saturated model	552	.000	0		
Independence model	46	5780.020	506	.000	11.423

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.045	.834	.794	.672
Saturated model	.000	1.000		
Independence model	.324	.169	.094	.155

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.853	.833	.924	.913	.923
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.879	.750	.812
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	404.958	326.421	491.294
Saturated model	.000	.000	.000
Independence model	5274.020	5032.699	5521.815

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.322	1.106	.892	1.342
Saturated model	.000	.000	.000	.000
Independence model	15.792	14.410	13.751	15.087

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.050	.045	.055	.511
Independence model	.169	.165	.173	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1063.958	1096.260		
Saturated model	1104.000	1270.642		
Independence model	5872.020	5885.907		

ECVI

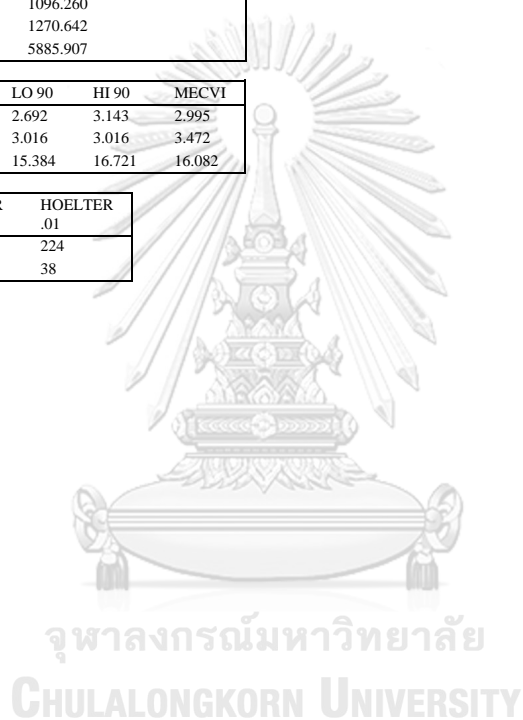
Model	ECVI	LO 90	HI 90	MECVI
Default model	2.907	2.692	3.143	2.995
Saturated model	3.016	3.016	3.016	3.472
Independence model	16.044	15.384	16.721	16.082

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	215	224
Independence model	37	38

Execution time summary

Minimization:	.016
Miscellaneous:	.564
Bootstrap:	.000
Total:	.580



23. Factor loadings of item P1_13 on brand awareness constrained equal (Model 8)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model BAware P1_13 factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 8:07:22 PM

Title

Amos baseline model baware p1_13 factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Monday,

November 26, 2018 8:07 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (trade)

Your model contains the following variables (trade)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (trade)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	1	0	0	0	0	1



	Weights	Covariances	Variances	Means	Intercepts	Total
Unlabeled	22	3	28	0	0	53
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)

The model is recursive.

Sample size = 184

Variable Summary (service)

Your model contains the following variables (service)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuth

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (service)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (service)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	1	0	0	0	0	1
Unlabeled	22	3	28	0	0	53
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 107

Degrees of freedom (552 - 107): 445

Result (Default model)

Minimum was achieved

Chi-square = 849.124

Degrees of freedom = 445



Probability level = .000
 trade (trade - Default model)
 Estimates (trade - Default model)
 Scalar Estimates (trade - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.595	.057	10.365	***	
BAuthen	<--	SMEBE	.711	.059	12.106	***	
BFunc	<--	SMEBE	.655	.058	11.208	***	
BReso	<--	SMEBE	.377	.053	7.171	***	
BAware	<--	SMEBE	.590	.059	9.971	***	
item20	<--	BFunc	1.000				
item21	<--	BFunc	.915	.082	11.144	***	
item22	<--	BFunc	.855	.084	10.188	***	
item17	<--	BFunc	.746	.082	9.045	***	
item16	<--	BFunc	.575	.078	7.328	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.837	.088	9.552	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	.586	.090	6.504	***	
item35	<--	BAttent	.793	.097	8.181	***	
item33	<--	BAttent	.448	.098	4.575	***	
item9	<--	BAuthen	.875	.085	10.289	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.977	.077	12.761	***	
P1_14	<--	BAware	.828	.078	10.575	***	
P1_13	<--	BAware	.845	.046	18.184	***	
P1_12	<--	BAware	.611	.074	8.293	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.137	.156	7.307	***	
P2_3	<--	BReso	1.404	.176	7.968	***	
P2_4	<--	BReso	1.443	.181	7.983	***	
P2_5	<--	BReso	1.372	.180	7.619	***	
P2_6	<--	BReso	.769	.150	5.121	***	

Covariances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.161	.035	4.637	***	
e34	<-->	e35	.111	.035	3.159	.002	
e2_5	<-->	e2_6	.165	.043	3.845	***	

Variances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.021	.029	.735	.462	
res4			.090	.039	2.312	.021	
res2			.088	.029	3.029	.002	
res1			.230	.043	5.380	***	
res5			.101	.027	3.794	***	
e20			.284	.039	7.254	***	
e21			.284	.037	7.642	***	
e22			.348	.042	8.210	***	
e17			.386	.045	8.630	***	
e16			.405	.045	9.016	***	
e27			.296	.042	7.085	***	
e8			.423	.050	8.467	***	
e9			.362	.045	8.127	***	
e32			.285	.048	5.979	***	
e34			.401	.046	8.712	***	
e35			.377	.047	7.979	***	
e33			.569	.061	9.262	***	
e1_16			.304	.042	7.227	***	
e1_15			.277	.039	7.011	***	
e1_14			.387	.047	8.271	***	
e1_13			.372	.045	8.244	***	
e1_12			.408	.046	8.903	***	
e2_1			.437	.050	8.795	***	
e2_2			.349	.042	8.309	***	
e2_4			.307	.042	7.246	***	
e2_5			.395	.050	7.939	***	
e2_3			.296	.041	7.284	***	
e2_6			.592	.065	9.180	***	

service (service - Default model)
 Estimates (service - Default model)
 Scalar Estimates (service - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.505	.048	10.477	***	
BAuthen	<--	SMEBE	.643	.057	11.204	***	
BFunc	<--	SMEBE	.628	.051	12.237	***	

			Estimate	S.E.	C.R.	P	Label
BReso	<--	SMEBE	.551	.049	11.334	***	
BAware	<--	SMEBE	.677	.059	11.463	***	
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.031	.076	13.541	***	
item22	<--	BFunc	1.008	.081	12.512	***	
item17	<--	BFunc	.808	.082	9.910	***	
item16	<--	BFunc	.724	.080	9.076	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.899	.088	10.196	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.086	.112	9.671	***	
item35	<--	BAttent	1.110	.113	9.802	***	
item33	<--	BAttent	1.056	.112	9.416	***	
item9	<--	BAuthen	.986	.092	10.699	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.971	.063	15.513	***	
P1_14	<--	BAware	.857	.055	15.641	***	
P1_13	<--	BAware	.845	.046	18.184	***	p2
P1_12	<--	BAware	.816	.061	13.351	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.115	.099	11.256	***	
P2_3	<--	BReso	1.149	.096	11.965	***	
P2_4	<--	BReso	1.252	.106	11.862	***	
P2_5	<--	BReso	1.237	.106	11.646	***	
P2_6	<--	BReso	1.132	.106	10.684	***	

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.201	.032	6.257	***	
e34	<-->	e35	.064	.028	2.302	.021	
e2_5	<-->	e2_6	.075	.028	2.654	.008	

Variances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.011	.018	.642	.521	
res4			.040	.015	2.612	.009	
res2			.050	.016	3.045	.002	
res1			.215	.036	6.017	***	
res5			.043	.012	3.462	***	
e20			.223	.028	7.906	***	
e21			.178	.024	7.313	***	
e22			.243	.030	8.019	***	
e17			.343	.039	8.869	***	
e16			.351	.039	9.013	***	
e27			.355	.042	8.437	***	
e8			.263	.032	8.313	***	
e9			.254	.032	7.918	***	
e32			.245	.030	8.081	***	
e34			.286	.036	7.844	***	
e35			.282	.036	7.755	***	
e33			.311	.038	8.274	***	
e1_16			.252	.032	7.763	***	
e1_15			.235	.030	7.722	***	
e1_14			.178	.023	7.660	***	
e1_13			.172	.022	7.681	***	
e1_12			.279	.033	8.476	***	
e2_1			.238	.028	8.535	***	
e2_2			.275	.033	8.456	***	
e2_4			.273	.033	8.150	***	
e2_5			.288	.035	8.187	***	
e2_3			.220	.027	8.086	***	
e2_6			.345	.040	8.564	***	

Model Fit Summary
CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	107	849.124	445	.000	1.908
Saturated model	552	.000	0		
Independence model	46	5780.020	506	.000	11.423

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.045	.834	.794	.673
Saturated model	.000	1.000		
Independence model	.324	.169	.094	.155

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.853	.833	.924	.913	.923
Saturated model	1.000	1.000	1.000	1.000	1.000

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.879	.750	.812
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	404.124	325.644	490.406
Saturated model	.000	.000	.000
Independence model	5274.020	5032.699	5521.815

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.320	1.104	.890	1.340
Saturated model	.000	.000	.000	.000
Independence model	15.792	14.410	13.751	15.087

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.050	.045	.055	.517
Independence model	.169	.165	.173	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1063.124	1095.426		
Saturated model	1104.000	1270.642		
Independence model	5872.020	5885.907		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.905	2.690	3.140	2.993
Saturated model	3.016	3.016	3.016	3.472
Independence model	16.044	15.384	16.721	16.082

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	215	224
Independence model	37	38

Execution time summary

Minimization:	.015
Miscellaneous:	.586
Bootstrap:	.000
Total:	.601

24. Factor loadings of item P1_14 on brand awareness constrained equal (Model 9)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model BAware P1_14 factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 8:13:55 PM

Title

Amos baseline model baware p1_14 factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 8:13 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (trade)

Your model contains the following variables (trade)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (trade)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	1	0	0	0	0	1
Unlabeled	22	3	28	0	0	53



	Weights	Covariances	Variances	Means	Intercepts	Total
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)

The model is recursive.

Sample size = 184

Variable Summary (service)

Your model contains the following variables (service)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e52

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (service)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (service)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	1	0	0	0	0	1
Unlabeled	22	3	28	0	0	53
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 107

Degrees of freedom (552 - 107): 445

Result (Default model)

Minimum was achieved

Chi-square = 842.158

Degrees of freedom = 445

Probability level = .000



trade (trade - Default model)
 Estimates (trade - Default model)
 Scalar Estimates (trade - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (trade - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.595	.057	10.361	***	
BAuthen <-- SMEBE	.711	.059	12.112	***	
BFunc <-- SMEBE	.655	.058	11.207	***	
BReso <-- SMEBE	.377	.053	7.172	***	
BAware <-- SMEBE	.621	.061	10.147	***	
item20 <-- BFunc	1.000				
item21 <-- BFunc	.915	.082	11.144	***	
item22 <-- BFunc	.855	.084	10.189	***	
item17 <-- BFunc	.745	.082	9.043	***	
item16 <-- BFunc	.575	.078	7.329	***	
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	.837	.088	9.553	***	
item32 <-- BAttent	1.000				
item34 <-- BAttent	.587	.090	6.508	***	
item35 <-- BAttent	.794	.097	8.183	***	
item33 <-- BAttent	.448	.098	4.579	***	
item9 <-- BAuthen	.875	.085	10.291	***	
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	.931	.071	13.086	***	
P1_14 <-- BAware	.850	.047	18.097	***	
P1_13 <-- BAware	.684	.070	9.772	***	
P1_12 <-- BAware	.577	.070	8.294	***	
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	1.137	.156	7.306	***	
P2_3 <-- BReso	1.405	.176	7.968	***	
P2_4 <-- BReso	1.444	.181	7.982	***	
P2_5 <-- BReso	1.372	.180	7.619	***	
P2_6 <-- BReso	.768	.150	5.119	***	

Covariances: (trade - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.161	.035	4.637	***	
e34 <--> e35	.111	.035	3.154	.002	
e2_5 <--> e2_6	.165	.043	3.846	***	

Variances: (trade - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.021	.029	.732	.464	
res4	.090	.039	2.313	.021	
res2	.088	.029	3.037	.002	
res1	.252	.046	5.470	***	
res5	.101	.027	3.794	***	
e20	.284	.039	7.253	***	
e21	.284	.037	7.642	***	
e22	.348	.042	8.209	***	
e17	.386	.045	8.630	***	
e16	.405	.045	9.015	***	
e27	.296	.042	7.085	***	
e8	.423	.050	8.470	***	
e9	.362	.045	8.129	***	
e32	.285	.048	5.986	***	
e34	.401	.046	8.710	***	
e35	.377	.047	7.977	***	
e33	.569	.061	9.261	***	
e1_16	.287	.042	6.880	***	
e1_15	.276	.039	7.046	***	
e1_14	.382	.047	8.152	***	
e1_13	.381	.044	8.601	***	
e1_12	.412	.046	8.935	***	
e2_1	.437	.050	8.796	***	
e2_2	.349	.042	8.310	***	
e2_4	.307	.042	7.247	***	
e2_5	.395	.050	7.939	***	
e2_3	.295	.041	7.282	***	
e2_6	.593	.065	9.180	***	

service (service - Default model)
 Estimates (service - Default model)
 Scalar Estimates (service - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (service - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.505	.048	10.480	***	
BAuthen <-- SMEBE	.643	.057	11.200	***	
BFunc <-- SMEBE	.628	.051	12.233	***	
BReso <-- SMEBE	.552	.049	11.339	***	

			Estimate	S.E.	C.R.	P	Label
BAware	<--	SMEBE	.660	.058	11.424	***	
item20	<--	BFunct	1.000				
item21	<--	BFunct	1.031	.076	13.538	***	
item22	<--	BFunct	1.008	.081	12.512	***	
item17	<--	BFunct	.808	.082	9.907	***	
item16	<--	BFunct	.724	.080	9.077	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.900	.088	10.198	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.086	.112	9.675	***	
item35	<--	BAttent	1.110	.113	9.805	***	
item33	<--	BAttent	1.055	.112	9.415	***	
item9	<--	BAuthen	.986	.092	10.695	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.992	.065	15.310	***	
P1_14	<--	BAware	.850	.047	18.097	***	p2
P1_13	<--	BAware	.917	.057	16.145	***	
P1_12	<--	BAware	.839	.063	13.330	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.115	.099	11.256	***	
P2_3	<--	BReso	1.148	.096	11.971	***	
P2_4	<--	BReso	1.251	.105	11.865	***	
P2_5	<--	BReso	1.236	.106	11.648	***	
P2_6	<--	BReso	1.131	.106	10.687	***	

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.201	.032	6.256	***	
e34	<-->	e35	.064	.028	2.300	.021	
e2_5	<-->	e2_6	.075	.028	2.656	.008	

Variances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.011	.018	.646	.518	
res4			.040	.015	2.609	.009	
res2			.050	.016	3.052	.002	
res1			.204	.034	5.990	***	
res5			.043	.012	3.457	***	
e20			.224	.028	7.906	***	
e21			.178	.024	7.312	***	
e22			.243	.030	8.018	***	
e17			.343	.039	8.869	***	
e16			.351	.039	9.013	***	
e27			.355	.042	8.437	***	
e8			.263	.032	8.310	***	
e9			.255	.032	7.919	***	
e32			.245	.030	8.081	***	
e34			.286	.036	7.843	***	
e35			.282	.036	7.755	***	
e33			.311	.038	8.277	***	
e1_16			.253	.032	7.871	***	
e1_15			.239	.031	7.776	***	
e1_14			.181	.023	7.857	***	
e1_13			.164	.022	7.325	***	
e1_12			.277	.033	8.469	***	
e2_1			.238	.028	8.534	***	
e2_2			.275	.033	8.457	***	
e2_4			.273	.033	8.151	***	
e2_5			.288	.035	8.189	***	
e2_3			.220	.027	8.086	***	
e2_6			.345	.040	8.564	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	107	842.158	445	.000	1.892
Saturated model	552	.000	0		
Independence model	46	5780.020	506	.000	11.423

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.043	.835	.795	.673
Saturated model	.000	1.000		
Independence model	.324	.169	.094	.155

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.854	.834	.926	.914	.925
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.879	.751	.813
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	397.158	319.138	482.983
Saturated model	.000	.000	.000
Independence model	5274.020	5032.699	5521.815

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.301	1.085	.872	1.320
Saturated model	.000	.000	.000	.000
Independence model	15.792	14.410	13.751	15.087

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.049	.044	.054	.572
Independence model	.169	.165	.173	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1056.158	1088.460		
Saturated model	1104.000	1270.642		
Independence model	5872.020	5885.907		

ECVI

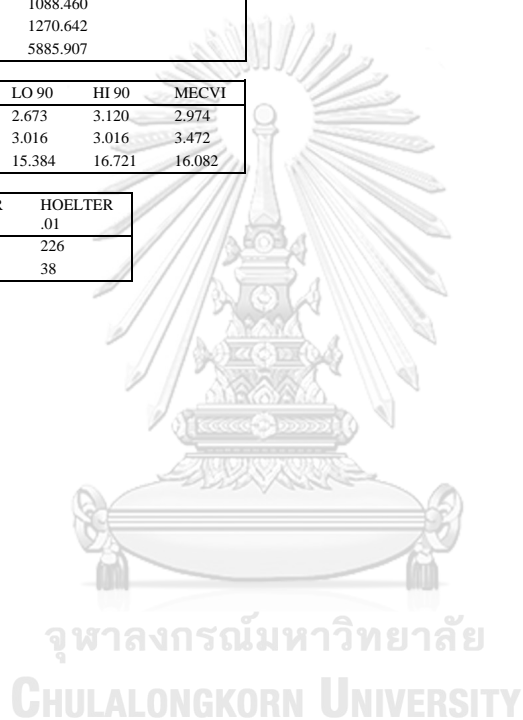
Model	ECVI	LO 90	HI 90	MECVI
Default model	2.886	2.673	3.120	2.974
Saturated model	3.016	3.016	3.016	3.472
Independence model	16.044	15.384	16.721	16.082

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	217	226
Independence model	37	38

Execution time summary

Minimization:	.000
Miscellaneous:	.686
Bootstrap:	.000
Total:	.686



25. Factor loadings of item P1_15 on brand awareness constrained equal (Model 10)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model BAware P1_15 factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 8:30:43 PM

Title

Amos baseline model baware p1_15 factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 8:30 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (trade)

Your model contains the following variables (trade)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (trade)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	1	0	0	0	0	1
Unlabeled	22	3	28	0	0	53



	Weights	Covariances	Variances	Means	Intercepts	Total
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)

The model is recursive.

Sample size = 184

Variable Summary (service)

Your model contains the following variables (service)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e52

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (service)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (service)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	1	0	0	0	0	1
Unlabeled	22	3	28	0	0	53
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 107

Degrees of freedom (552 - 107): 445

Result (Default model)

Minimum was achieved

Chi-square = 841.298

Degrees of freedom = 445

Probability level = .000



trade (trade - Default model)
 Estimates (trade - Default model)
 Scalar Estimates (trade - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.595	.057	10.360	***	
BAuthen	<--	SMEBE	.711	.059	12.110	***	
BFunc	<--	SMEBE	.655	.058	11.201	***	
BReso	<--	SMEBE	.376	.053	7.169	***	
BAware	<--	SMEBE	.622	.061	10.210	***	
item20	<--	BFunc	1.000				
item21	<--	BFunc	.915	.082	11.141	***	
item22	<--	BFunc	.855	.084	10.188	***	
item17	<--	BFunc	.746	.082	9.039	***	
item16	<--	BFunc	.576	.079	7.329	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.837	.088	9.558	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	.587	.090	6.509	***	
item35	<--	BAttent	.794	.097	8.183	***	
item33	<--	BAttent	.448	.098	4.581	***	
item9	<--	BAuthen	.875	.085	10.288	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.964	.051	19.075	***	p2
P1_14	<--	BAware	.781	.072	10.835	***	
P1_13	<--	BAware	.679	.069	9.857	***	
P1_12	<--	BAware	.573	.069	8.353	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.137	.156	7.305	***	
P2_3	<--	BReso	1.404	.176	7.968	***	
P2_4	<--	BReso	1.444	.181	7.983	***	
P2_5	<--	BReso	1.372	.180	7.619	***	
P2_6	<--	BReso	.768	.150	5.119	***	

Covariances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.161	.035	4.637	***	
e34	<-->	e35	.111	.035	3.152	.002	
e2_5	<-->	e2_6	.165	.043	3.847	***	

Variances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.021	.029	.723	.469	
res4			.090	.039	2.311	.021	
res2			.088	.029	3.034	.002	
res1			.259	.046	5.568	***	
res5			.101	.027	3.795	***	
e20			.285	.039	7.256	***	
e21			.284	.037	7.640	***	
e22			.348	.042	8.207	***	
e17			.386	.045	8.631	***	
e16			.405	.045	9.015	***	
e27			.296	.042	7.089	***	
e8			.423	.050	8.467	***	
e9			.362	.045	8.129	***	
e32			.285	.048	5.989	***	
e34			.400	.046	8.709	***	
e35			.377	.047	7.976	***	
e33			.569	.061	9.261	***	
e1_16			.284	.041	6.863	***	
e1_15			.268	.039	6.906	***	
e1_14			.389	.047	8.323	***	
e1_13			.381	.044	8.611	***	
e1_12			.412	.046	8.940	***	
e2_1			.437	.050	8.795	***	
e2_2			.349	.042	8.310	***	
e2_4			.307	.042	7.244	***	
e2_5			.395	.050	7.939	***	
e2_3			.295	.041	7.282	***	
e2_6			.593	.065	9.180	***	

service (service - Default model)
 Estimates (service - Default model)
 Scalar Estimates (service - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.505	.048	10.480	***	
BAuthen	<--	SMEBE	.642	.057	11.197	***	
BFunc	<--	SMEBE	.628	.051	12.233	***	
BReso	<--	SMEBE	.552	.049	11.342	***	

			Estimate	S.E.	C.R.	P	Label
BAware	<--	SMEBE	.658	.057	11.475	***	
item20	<--	BFunct	1.000				
item21	<--	BFunct	1.031	.076	13.540	***	
item22	<--	BFunct	1.008	.081	12.510	***	
item17	<--	BFunct	.808	.082	9.907	***	
item16	<--	BFunct	.724	.080	9.078	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.900	.088	10.196	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.086	.112	9.676	***	
item35	<--	BAttent	1.110	.113	9.805	***	
item33	<--	BAttent	1.055	.112	9.415	***	
item9	<--	BAuthen	.986	.092	10.693	***	
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.964	.051	19.075	***	p2
P1_14	<--	BAware	.882	.056	15.636	***	
P1_13	<--	BAware	.921	.056	16.312	***	
P1_12	<--	BAware	.842	.063	13.410	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.115	.099	11.257	***	
P2_3	<--	BReso	1.148	.096	11.973	***	
P2_4	<--	BReso	1.251	.105	11.865	***	
P2_5	<--	BReso	1.236	.106	11.648	***	
P2_6	<--	BReso	1.132	.106	10.690	***	

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.201	.032	6.256	***	
e34	<-->	e35	.064	.028	2.300	.021	
e2_5	<-->	e2_6	.075	.028	2.655	.008	

Variances: (service - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.012	.018	.652	.514	
res4	.040	.015	2.610	.009	
res2	.050	.016	3.053	.002	
res1	.202	.034	6.018	***	
res5	.043	.012	3.453	***	
e20	.224	.028	7.906	***	
e21	.178	.024	7.311	***	
e22	.243	.030	8.018	***	
e17	.343	.039	8.869	***	
e16	.351	.039	9.013	***	
e27	.355	.042	8.437	***	
e8	.263	.032	8.309	***	
e9	.255	.032	7.918	***	
e32	.245	.030	8.080	***	
e34	.286	.036	7.843	***	
e35	.282	.036	7.755	***	
e33	.311	.038	8.277	***	
e1_16	.254	.032	7.900	***	
e1_15	.243	.031	7.947	***	
e1_14	.178	.023	7.679	***	
e1_13	.163	.022	7.309	***	
e1_12	.277	.033	8.469	***	
e2_1	.238	.028	8.534	***	
e2_2	.275	.033	8.458	***	
e2_4	.273	.033	8.153	***	
e2_5	.289	.035	8.190	***	
e2_3	.220	.027	8.086	***	
e2_6	.345	.040	8.564	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	107	841.298	445	.000	1.891
Saturated model	552	.000	0		
Independence model	46	5780.020	506	.000	11.423

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.043	.835	.796	.673
Saturated model	.000	1.000		
Independence model	.324	.169	.094	.155

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
Default model	.854	.834	.926	.915	.925
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.879	.751	.813
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	396.298	318.337	482.067
Saturated model	.000	.000	.000
Independence model	5274.020	5032.699	5521.815

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.299	1.083	.870	1.317
Saturated model	.000	.000	.000	.000
Independence model	15.792	14.410	13.751	15.087

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.049	.044	.054	.579
Independence model	.169	.165	.173	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1055.298	1087.600		
Saturated model	1104.000	1270.642		
Independence model	5872.020	5885.907		

ECVI

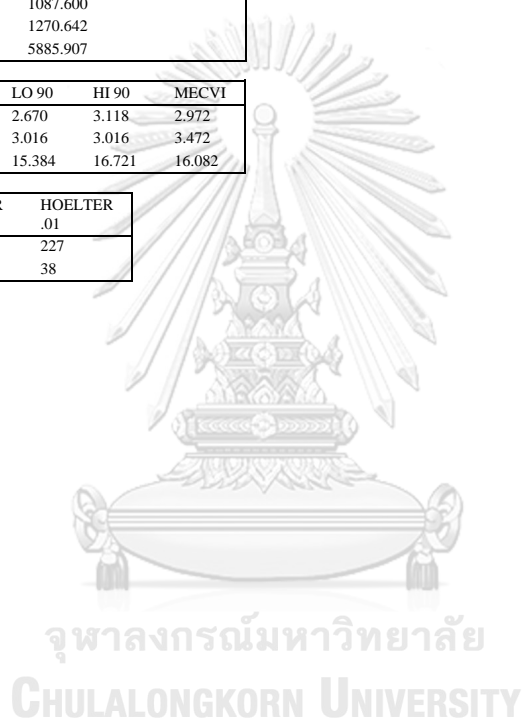
Model	ECVI	LO 90	HI 90	MECVI
Default model	2.883	2.670	3.118	2.972
Saturated model	3.016	3.016	3.016	3.472
Independence model	16.044	15.384	16.721	16.082

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	217	227
Independence model	37	38

Execution time summary

Minimization:	.016
Miscellaneous:	.570
Bootstrap:	.000
Total:	.586



26. Factor loadings of item P1_16 on brand awareness constrained equal (Model 11)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model BAware P1_16 factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Monday, November 26, 2018

Time: 9:02:34 PM

Title

Amos baseline model baware p1_16 factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Monday, November 26, 2018 9:02 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (trade)

Your model contains the following variables (trade)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (trade)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	1	0	0	0	0	1
Unlabeled	22	3	28	0	0	53



	Weights	Covariances	Variances	Means	Intercepts	Total
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)

The model is recursive.

Sample size = 184

Variable Summary (service)

Your model contains the following variables (service)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e52

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (service)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (service)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	1	0	0	0	0	1
Unlabeled	22	3	28	0	0	53
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 107

Degrees of freedom (552 - 107): 445

Result (Default model)

Minimum was achieved

Chi-square = 841.298

Degrees of freedom = 445

Probability level = .000



trade (trade - Default model)
 Estimates (trade - Default model)
 Scalar Estimates (trade - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (trade - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.595	.057	10.360	***	
BAuthen <-- SMEBE	.711	.059	12.110	***	
BFunc <-- SMEBE	.655	.058	11.201	***	
BReso <-- SMEBE	.376	.053	7.169	***	
BAware <-- SMEBE	.600	.059	10.199	***	
item20 <-- BFunc	1.000				
item21 <-- BFunc	.915	.082	11.141	***	
item22 <-- BFunc	.855	.084	10.188	***	
item17 <-- BFunc	.746	.082	9.039	***	
item16 <-- BFunc	.576	.079	7.329	***	
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	.837	.088	9.558	***	
item32 <-- BAttent	1.000				
item34 <-- BAttent	.587	.090	6.509	***	
item35 <-- BAttent	.794	.097	8.183	***	
item33 <-- BAttent	.448	.098	4.581	***	
item9 <-- BAuthen	.875	.085	10.288	***	
P1_16 <-- BAware	1.037	.054	19.075	***	p2
P1_15 <-- BAware	1.000				
P1_14 <-- BAware	.810	.075	10.824	***	
P1_13 <-- BAware	.704	.072	9.849	***	
P1_12 <-- BAware	.595	.071	8.348	***	
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	1.137	.156	7.305	***	
P2_3 <-- BReso	1.404	.176	7.968	***	
P2_4 <-- BReso	1.444	.181	7.983	***	
P2_5 <-- BReso	1.372	.180	7.619	***	
P2_6 <-- BReso	.768	.150	5.119	***	

Covariances: (trade - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.161	.035	4.637	***	
e34 <--> e35	.111	.035	3.152	.002	
e2_5 <--> e2_6	.165	.043	3.847	***	

Variances: (trade - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.021	.029	.723	.469	
res4	.090	.039	2.311	.021	
res2	.088	.029	3.034	.002	
res1	.240	.043	5.563	***	
res5	.101	.027	3.795	***	
e20	.285	.039	7.256	***	
e21	.284	.037	7.640	***	
e22	.348	.042	8.207	***	
e17	.386	.045	8.631	***	
e16	.405	.045	9.015	***	
e27	.296	.042	7.089	***	
e8	.423	.050	8.467	***	
e9	.362	.045	8.129	***	
e32	.285	.048	5.989	***	
e34	.400	.046	8.709	***	
e35	.377	.047	7.976	***	
e33	.569	.061	9.261	***	
e1_16	.284	.041	6.863	***	
e1_15	.268	.039	6.906	***	
e1_14	.389	.047	8.323	***	
e1_13	.381	.044	8.611	***	
e1_12	.412	.046	8.940	***	
e2_1	.437	.050	8.795	***	
e2_2	.349	.042	8.310	***	
e2_4	.307	.042	7.244	***	
e2_5	.395	.050	7.939	***	
e2_3	.295	.041	7.282	***	
e2_6	.593	.065	9.180	***	

service (service - Default model)
 Estimates (service - Default model)
 Scalar Estimates (service - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (service - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.505	.048	10.480	***	
BAuthen <-- SMEBE	.642	.057	11.197	***	
BFunc <-- SMEBE	.628	.051	12.233	***	
BReso <-- SMEBE	.552	.049	11.342	***	

			Estimate	S.E.	C.R.	P	Label
BAware	<--	SMEBE	.635	.055	11.447	***	
item20	<--	BFunct	1.000				
item21	<--	BFunct	1.031	.076	13.540	***	
item22	<--	BFunct	1.008	.081	12.510	***	
item17	<--	BFunct	.808	.082	9.907	***	
item16	<--	BFunct	.724	.080	9.078	***	
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.900	.088	10.196	***	
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.086	.112	9.676	***	
item35	<--	BAttent	1.110	.113	9.805	***	
item33	<--	BAttent	1.055	.112	9.415	***	
item9	<--	BAuthen	.986	.092	10.693	***	
P1_16	<--	BAware	1.037	.054	19.075	***	p2
P1_15	<--	BAware	1.000				
P1_14	<--	BAware	.915	.059	15.567	***	
P1_13	<--	BAware	.955	.059	16.234	***	
P1_12	<--	BAware	.873	.065	13.366	***	
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.115	.099	11.257	***	
P2_3	<--	BReso	1.148	.096	11.973	***	
P2_4	<--	BReso	1.251	.105	11.865	***	
P2_5	<--	BReso	1.236	.106	11.648	***	
P2_6	<--	BReso	1.132	.106	10.690	***	

Covariances: (service - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.201	.032	6.256	***	
e34	<-->	e35	.064	.028	2.300	.021	
e2_5	<-->	e2_6	.075	.028	2.655	.008	

Variances: (service - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.012	.018	.652	.514	
res4	.040	.015	2.610	.009	
res2	.050	.016	3.053	.002	
res1	.188	.031	6.002	***	
res5	.043	.012	3.453	***	
e20	.224	.028	7.906	***	
e21	.178	.024	7.311	***	
e22	.243	.030	8.018	***	
e17	.343	.039	8.869	***	
e16	.351	.039	9.013	***	
e27	.355	.042	8.437	***	
e8	.263	.032	8.309	***	
e9	.255	.032	7.918	***	
e32	.245	.030	8.080	***	
e34	.286	.036	7.843	***	
e35	.282	.036	7.755	***	
e33	.311	.038	8.277	***	
e1_16	.254	.032	7.900	***	
e1_15	.243	.031	7.947	***	
e1_14	.178	.023	7.679	***	
e1_13	.163	.022	7.309	***	
e1_12	.277	.033	8.469	***	
e2_1	.238	.028	8.534	***	
e2_2	.275	.033	8.458	***	
e2_4	.273	.033	8.153	***	
e2_5	.289	.035	8.190	***	
e2_3	.220	.027	8.086	***	
e2_6	.345	.040	8.564	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	107	841.298	445	.000	1.891
Saturated model	552	.000	0		
Independence model	46	5780.020	506	.000	11.423

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.043	.835	.796	.673
Saturated model	.000	1.000		
Independence model	.324	.169	.094	.155

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
Default model	.854	.834	.926	.915	.925
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.879	.751	.813
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	396.298	318.337	482.067
Saturated model	.000	.000	.000
Independence model	5274.020	5032.699	5521.815

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.299	1.083	.870	1.317
Saturated model	.000	.000	.000	.000
Independence model	15.792	14.410	13.751	15.087

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.049	.044	.054	.579
Independence model	.169	.165	.173	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1055.298	1087.600		
Saturated model	1104.000	1270.642		
Independence model	5872.020	5885.907		

ECVI

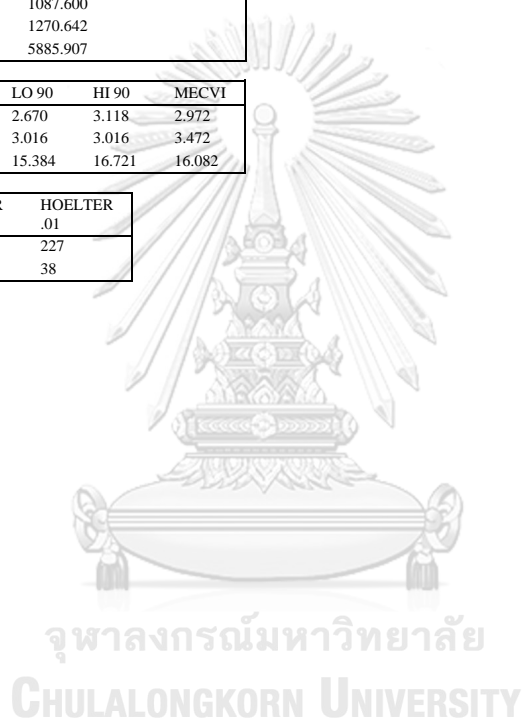
Model	ECVI	LO 90	HI 90	MECVI
Default model	2.883	2.670	3.118	2.972
Saturated model	3.016	3.016	3.016	3.472
Independence model	16.044	15.384	16.721	16.082

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Independence model	217	227
Independence model	37	38

Execution time summary

Minimization:	.000
Miscellaneous:	.633
Bootstrap:	.000
Total:	.633



27. Factor loadings of item 32 on brand attentiveness constrained equal (Model 20)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model BAttent item 32 factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Sunday, October 28, 2018

Time: 8:30:29 PM

Title

Amos baseline model BAttent item 32 factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Sunday, October 28, 2018 8:30 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (manu)

Your model contains the following variables (manu)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuth

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (manu)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (manu)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	1	0	0	0	0	1
Unlabeled	22	3	28	0	0	53



	Weights	Covariances	Variances	Means	Intercepts	Total
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)

The model is recursive.

Sample size = 184

Variable Summary (trade)

Your model contains the following variables (trade)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e52

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (trade)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	1	0	0	0	0	1
Unlabeled	22	3	28	0	0	53
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 107

Degrees of freedom (552 - 107): 445

Result (Default model)

Minimum was achieved

Chi-square = 805.338

Degrees of freedom = 445

Probability level = .000



manu (manu - Default model)
 Estimates (manu - Default model)
 Scalar Estimates (manu - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.354	.049	7.219	***	
BAuthen	<--	SMEBE	.449	.065	6.940	***	
BFunc	<--	SMEBE	.221	.058	3.822	***	
BReso	<--	SMEBE	.499	.060	8.261	***	
BAware	<--	SMEBE	.428	.058	7.439	***	
item20	<--	BFunc	2.264	.589	3.847	***	
item21	<--	BFunc	2.635	.680	3.876	***	
item22	<--	BFunc	2.859	.728	3.929	***	
item17	<--	BFunc	1.284	.229	5.613	***	
item16	<--	BFunc	1.000				
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.481	.203	7.293	***	
item32	<--	BAttent	1.355	.140	9.707	***	p2
item34	<--	BAttent	1.000				
item35	<--	BAttent	1.093	.141	7.730	***	
item33	<--	BAttent	1.480	.187	7.909	***	
item9	<--	BAuthen	1.361	.192	7.105	***	
P1_16	<--	BAware	1.334	.142	9.404	***	
P1_15	<--	BAware	1.304	.139	9.391	***	
P1_14	<--	BAware	1.459	.154	9.466	***	
P1_13	<--	BAware	1.114	.129	8.649	***	
P1_12	<--	BAware	1.000				
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.150	.131	8.809	***	
P2_3	<--	BReso	1.185	.127	9.345	***	
P2_4	<--	BReso	1.292	.139	9.271	***	
P2_5	<--	BReso	1.185	.134	8.814	***	
P2_6	<--	BReso	.836	.130	6.432	***	

Covariances: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.428	.058	7.441	***	
e34	<-->	e35	.172	.045	3.778	***	
e2_5	<-->	e2_6	.104	.042	2.476	.013	

Variances: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.075	.027	2.790	.005	
res4			.092	.025	3.641	***	
res2			.027	.014	1.878	.060	
res1			.172	.040	4.319	***	
res5			.112	.030	3.708	***	
e20			.372	.048	7.786	***	
e21			.415	.056	7.381	***	
e22			.287	.049	5.859	***	
e17			.538	.059	9.183	***	
e16			.712	.076	9.387	***	
e27			.594	.068	8.708	***	
e8			.305	.053	5.721	***	
e9			.367	.053	6.858	***	
e32			.320	.047	6.819	***	
e34			.511	.059	8.659	***	
e35			.505	.060	8.408	***	
e33			.293	.050	5.900	***	
e1_16			.298	.041	7.290	***	
e1_15			.288	.039	7.316	***	
e1_14			.337	.047	7.155	***	
e1_13			.362	.044	8.272	***	
e1_12			.473	.054	8.774	***	
e2_1			.474	.054	8.726	***	
e2_2			.354	.044	8.068	***	
e2_4			.319	.043	7.458	***	
e2_5			.373	.046	8.030	***	
e2_3			.253	.035	7.322	***	
e2_6			.644	.071	9.073	***	

trade (trade - Default model)
 Estimates (trade - Default model)
 Scalar Estimates (trade - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.405	.048	8.505	***	
BAuthen	<--	SMEBE	.711	.059	12.092	***	
BFunc	<--	SMEBE	.378	.052	7.212	***	
BReso	<--	SMEBE	.377	.053	7.170	***	

			Estimate	S.E.	C.R.	P	Label
BAware	<--	SMEBE	.356	.050	7.122	***	
item20	<--	BFunct	1.736	.236	7.345	***	
item21	<--	BFunct	1.585	.220	7.215	***	
item22	<--	BFunct	1.485	.214	6.943	***	
item17	<--	BFunct	1.295	.153	8.437	***	
item16	<--	BFunct	1.000				
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.838	.088	9.547	***	
item32	<--	BAttent	1.355	.140	9.707	***	p2
item34	<--	BAttent	1.000				
item35	<--	BAttent	1.204	.139	8.631	***	
item33	<--	BAttent	.702	.149	4.718	***	
item9	<--	BAuthen	.877	.085	10.290	***	
P1_16	<--	BAware	1.813	.221	8.202	***	
P1_15	<--	BAware	1.614	.201	8.043	***	
P1_14	<--	BAware	1.359	.184	7.366	***	
P1_13	<--	BAware	1.180	.168	7.031	***	
P1_12	<--	BAware	1.000				
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.138	.156	7.308	***	
P2_3	<--	BReso	1.404	.176	7.966	***	
P2_4	<--	BReso	1.443	.181	7.980	***	
P2_5	<--	BReso	1.373	.180	7.621	***	
P2_6	<--	BReso	.768	.150	5.119	***	

Covariances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.161	.035	4.627	***	
e34	<-->	e35	.093	.036	2.606	.009	
e2_5	<-->	e2_6	.165	.043	3.844	***	

Variances: (trade - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.021	.029	.704	.481	
res4	.047	.019	2.470	.014	
res2	.029	.011	2.549	.011	
res1	.086	.023	3.744	***	
res5	.101	.027	3.792	***	
e20	.284	.039	7.245	***	
e21	.286	.037	7.660	***	
e22	.348	.042	8.205	***	
e17	.386	.045	8.627	***	
e16	.404	.045	9.012	***	
e27	.297	.042	7.096	***	
e8	.423	.050	8.463	***	
e9	.361	.045	8.116	***	
e32	.309	.046	6.781	***	
e34	.382	.046	8.291	***	
e35	.362	.048	7.592	***	
e33	.554	.060	9.181	***	
e1_16	.271	.043	6.365	***	
e1_15	.275	.039	7.056	***	
e1_14	.391	.047	8.339	***	
e1_13	.382	.044	8.624	***	
e1_12	.411	.046	8.941	***	
e2_1	.437	.050	8.795	***	
e2_2	.348	.042	8.307	***	
e2_4	.308	.042	7.250	***	
e2_5	.394	.050	7.934	***	
e2_3	.296	.041	7.286	***	
e2_6	.593	.065	9.180	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	107	805.338	445	.000	1.810
Saturated model	552	.000	0		
Independence model	46	4708.648	506	.000	9.306

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.053	.839	.800	.676
Saturated model	.000	1.000		
Independence model	.294	.237	.167	.217

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.829	.806	.915	.903	.914
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.879	.729	.804
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	360.338	284.803	443.706
Saturated model	.000	.000	.000
Independence model	4202.648	3986.627	4425.977

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.200	.985	.778	1.212
Saturated model	.000	.000	.000	.000
Independence model	12.865	11.483	10.892	12.093

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.047	.042	.052	.824
Independence model	.151	.147	.155	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1019.338	1051.640		
Saturated model	1104.000	1270.642		
Independence model	4800.648	4814.535		

ECVI

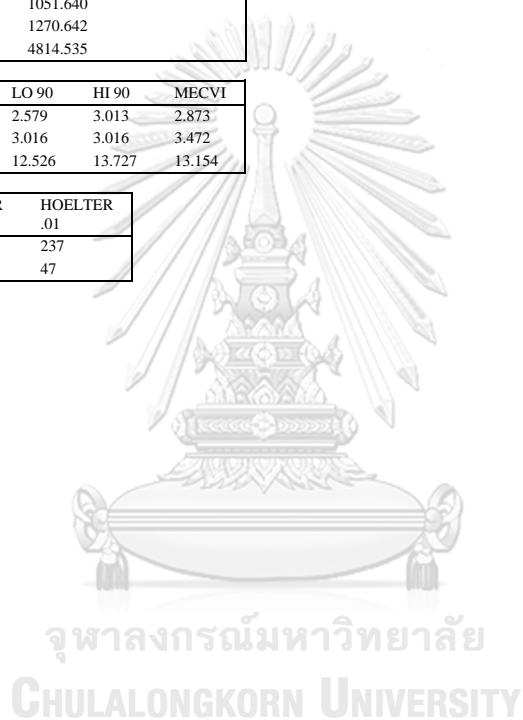
Model	ECVI	LO 90	HI 90	MECVI
Default model	2.785	2.579	3.013	2.873
Saturated model	3.016	3.016	3.016	3.472
Independence model	13.117	12.526	13.727	13.154

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	227	237
Independence model	45	47

Execution time summary

Minimization:	.015
Miscellaneous:	.688
Bootstrap:	.000
Total:	.703



28. Factor loadings of item 33 on BAttentive constrained equal (Model 21)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model BAttent item 33 factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Sunday, October 28, 2018

Time: 8:32:05 PM

Title

Amos baseline model BAttent item 33 factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Sunday, October 28, 2018 8:32 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (manu)

Your model contains the following variables (manu)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (manu)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (manu)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	1	0	0	0	0	1
Unlabeled	22	3	28	0	0	53
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)



The model is recursive.
 Sample size = 184
 Variable Summary (trade)
 Your model contains the following variables (trade)
 Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunct
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (trade)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	1	0	0	0	0	1
Unlabeled	22	3	28	0	0	53
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 107

Degrees of freedom (552 - 107): 445

Result (Default model)

Minimum was achieved

Chi-square = 804.917

Degrees of freedom = 445

Probability level = .000

manu (manu - Default model)

Estimates (manu - Default model)

Scalar Estimates (manu - Default model)

Maximum Likelihood Estimates



Regression Weights: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.453	.059	7.616	***	
BAuthen	<--	SMEBE	.450	.065	6.950	***	
BFunct	<--	SMEBE	.222	.058	3.823	***	
BReso	<--	SMEBE	.499	.060	8.260	***	
BAware	<--	SMEBE	.428	.058	7.434	***	
item20	<--	BFunct	2.263	.589	3.845	***	
item21	<--	BFunct	2.637	.680	3.876	***	
item22	<--	BFunct	2.861	.728	3.928	***	
item17	<--	BFunct	1.284	.229	5.612	***	
item16	<--	BFunct	1.000				
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.477	.202	7.306	***	
item32	<--	BAttent	.997	.127	7.840	***	
item34	<--	BAttent	1.000				
item35	<--	BAttent	.939	.111	8.474	***	
item33	<--	BAttent	1.114	.125	8.920	***	p2
item9	<--	BAuthen	1.357	.191	7.116	***	
P1_16	<--	BAware	1.335	.142	9.405	***	
P1_15	<--	BAware	1.305	.139	9.393	***	
P1_14	<--	BAware	1.458	.154	9.465	***	
P1_13	<--	BAware	1.114	.129	8.648	***	
P1_12	<--	BAware	1.000				
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.151	.131	8.789	***	
P2_3	<--	BReso	1.187	.127	9.329	***	
P2_4	<--	BReso	1.295	.140	9.261	***	
P2_5	<--	BReso	1.188	.135	8.808	***	
P2_6	<--	BReso	.837	.130	6.421	***	

Covariances: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.428	.058	7.442	***	
e34	<-->	e35	.144	.046	3.096	.002	
e2_5	<-->	e2_6	.104	.042	2.477	.013	

Variances: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.076	.027	2.805	.005	
res4			.144	.039	3.738	***	
res2			.026	.014	1.877	.061	
res1			.172	.040	4.323	***	
res5			.111	.030	3.696	***	
e20			.373	.048	7.794	***	
e21			.415	.056	7.382	***	
e22			.286	.049	5.858	***	
e17			.538	.059	9.184	***	
e16			.712	.076	9.388	***	
e27			.593	.068	8.700	***	
e8			.306	.053	5.725	***	
e9			.368	.054	6.860	***	
e32			.338	.047	7.244	***	
e34			.472	.060	7.848	***	
e35			.487	.061	8.017	***	
e33			.309	.048	6.459	***	
e1_16			.298	.041	7.287	***	
e1_15			.288	.039	7.312	***	
e1_14			.337	.047	7.159	***	
e1_13			.362	.044	8.273	***	
e1_12			.473	.054	8.774	***	
e2_1			.475	.054	8.732	***	
e2_2			.355	.044	8.077	***	
e2_4			.318	.043	7.451	***	
e2_5			.372	.046	8.025	***	
e2_3			.253	.034	7.327	***	
e2_6			.645	.071	9.075	***	

trade (trade - Default model)

Estimates (trade - Default model)

Scalar Estimates (trade - Default model)

Maximum Likelihood Estimates

Regression Weights: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.296	.043	6.863	***	
BAuthen	<--	SMEBE	.712	.059	12.128	***	
BFunct	<--	SMEBE	.377	.052	7.194	***	
BReso	<--	SMEBE	.376	.053	7.169	***	
BAware	<--	SMEBE	.357	.050	7.137	***	
item20	<--	BFunct	1.737	.237	7.324	***	
item21	<--	BFunct	1.592	.221	7.211	***	

			Estimate	S.E.	C.R.	P	Label
item22	<--	BFunct	1.487	.215	6.928	***	
item17	<--	BFunct	1.296	.154	8.423	***	
item16	<--	BFunct	1.000				
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.836	.087	9.560	***	
item32	<--	BAttent	2.004	.294	6.817	***	
item34	<--	BAttent	1.000				
item35	<--	BAttent	1.544	.216	7.150	***	
item33	<--	BAttent	1.114	.125	8.920	***	p2
item9	<--	BAuthen	.874	.085	10.286	***	
P1_16	<--	BAware	1.812	.221	8.203	***	
P1_15	<--	BAware	1.614	.201	8.046	***	
P1_14	<--	BAware	1.359	.184	7.370	***	
P1_13	<--	BAware	1.181	.168	7.035	***	
P1_12	<--	BAware	1.000				
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.136	.156	7.306	***	
P2_3	<--	BReso	1.404	.176	7.970	***	
P2_4	<--	BReso	1.443	.181	7.986	***	
P2_5	<--	BReso	1.372	.180	7.620	***	
P2_6	<--	BReso	.768	.150	5.117	***	

Covariances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.161	.035	4.639	***	
e34	<-->	e35	.115	.034	3.341	***	
e2_5	<-->	e2_6	.165	.043	3.849	***	

Variances: (trade - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.021	.029	.709	.479	
res4	.023	.010	2.184	.029	
res2	.029	.011	2.568	.010	
res1	.085	.023	3.740	***	
res5	.101	.027	3.797	***	
e20	.285	.039	7.262	***	
e21	.284	.037	7.631	***	
e22	.348	.042	8.207	***	
e17	.386	.045	8.631	***	
e16	.405	.045	9.015	***	
e27	.295	.042	7.079	***	
e8	.423	.050	8.470	***	
e9	.363	.045	8.136	***	
e32	.284	.048	5.920	***	
e34	.407	.045	8.999	***	
e35	.377	.047	8.097	***	
e33	.570	.062	9.121	***	
e1_16	.272	.043	6.382	***	
e1_15	.275	.039	7.059	***	
e1_14	.391	.047	8.339	***	
e1_13	.382	.044	8.624	***	
e1_12	.411	.046	8.941	***	
e2_1	.437	.050	8.794	***	
e2_2	.349	.042	8.311	***	
e2_4	.307	.042	7.242	***	
e2_5	.395	.050	7.939	***	
e2_3	.295	.041	7.282	***	
e2_6	.593	.065	9.181	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	107	804.917	445	.000	1.809
Saturated model	552	.000	0		
Independence model	46	4708.648	506	.000	9.306

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.052	.840	.801	.677
Saturated model	.000	1.000		
Independence model	.294	.237	.167	.217

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.829	.806	.916	.903	.914
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.879	.729	.804

Model	PRATIO	PNFI	PCFI
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	359.917	284.409	443.256
Saturated model	.000	.000	.000
Independence model	4202.648	3986.627	4425.977

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.199	.983	.777	1.211
Saturated model	.000	.000	.000	.000
Independence model	12.865	11.483	10.892	12.093

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.047	.042	.052	.826
Independence model	.151	.147	.155	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1018.917	1051.219		
Saturated model	1104.000	1270.642		
Independence model	4800.648	4814.535		

ECVI

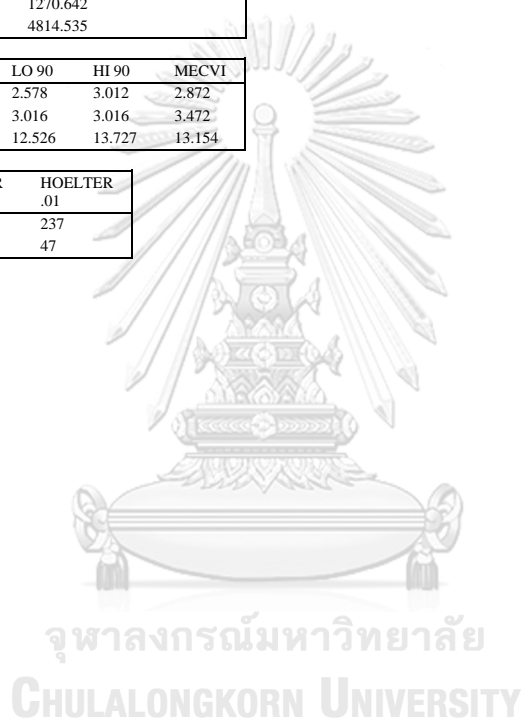
Model	ECVI	LO 90	HI 90	MECVI
Default model	2.784	2.578	3.012	2.872
Saturated model	3.016	3.016	3.016	3.472
Independence model	13.117	12.526	13.727	13.154

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	227	237
Independence model	45	47

Execution time summary

Minimization:	.016
Miscellaneous:	.692
Bootstrap:	.000
Total:	.708



29. Factor loadings of item 34 on BAttentive constrained equal (Model 22)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model BAttent item 34 factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Sunday, October 28, 2018

Time: 8:54:42 PM

Title

Amos baseline model BAttent item 34 factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Sunday, October 28, 2018 8:54 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (manu)

Your model contains the following variables (manu)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (manu)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (manu)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	1	0	0	0	0	1
Unlabeled	22	3	28	0	0	53
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)



The model is recursive.
 Sample size = 184
 Variable Summary (trade)
 Your model contains the following variables (trade)
 Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunct
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (trade)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	1	0	0	0	0	1
Unlabeled	22	3	28	0	0	53
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 107

Degrees of freedom (552 - 107): 445

Result (Default model)

Minimum was achieved

Chi-square = 804.917

Degrees of freedom = 445

Probability level = .000

manu (manu - Default model)

Estimates (manu - Default model)

Scalar Estimates (manu - Default model)

Maximum Likelihood Estimates



Regression Weights: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.505	.059	8.525	***	
BAuthen	<--	SMEBE	.450	.065	6.950	***	
BFunc	<--	SMEBE	.222	.058	3.823	***	
BReso	<--	SMEBE	.499	.060	8.260	***	
BAware	<--	SMEBE	.428	.058	7.434	***	
item20	<--	BFunc	2.263	.589	3.845	***	
item21	<--	BFunc	2.637	.680	3.876	***	
item22	<--	BFunc	2.861	.728	3.928	***	
item17	<--	BFunc	1.284	.229	5.612	***	
item16	<--	BFunc	1.000				
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.477	.202	7.306	***	
item32	<--	BAttent	.896	.103	8.710	***	
item34	<--	BAttent	.898	.101	8.920	***	p2
item35	<--	BAttent	.844	.109	7.753	***	
item33	<--	BAttent	1.000				
item9	<--	BAuthen	1.357	.191	7.116	***	
P1_16	<--	BAware	1.335	.142	9.405	***	
P1_15	<--	BAware	1.305	.139	9.393	***	
P1_14	<--	BAware	1.458	.154	9.465	***	
P1_13	<--	BAware	1.114	.129	8.648	***	
P1_12	<--	BAware	1.000				
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.151	.131	8.789	***	
P2_3	<--	BReso	1.187	.127	9.329	***	
P2_4	<--	BReso	1.295	.140	9.261	***	
P2_5	<--	BReso	1.188	.135	8.808	***	
P2_6	<--	BReso	.837	.130	6.421	***	

Covariances: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.428	.058	7.442	***	
e34	<-->	e35	.144	.046	3.096	.002	
e2_5	<-->	e2_6	.104	.042	2.477	.013	

Variances: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.076	.027	2.805	.005	
res4			.179	.044	4.100	***	
res2			.026	.014	1.877	.061	
res1			.172	.040	4.323	***	
res5			.111	.030	3.696	***	
e20			.373	.048	7.794	***	
e21			.415	.056	7.382	***	
e22			.286	.049	5.858	***	
e17			.538	.059	9.184	***	
e16			.712	.076	9.388	***	
e27			.593	.068	8.700	***	
e8			.306	.053	5.725	***	
e9			.368	.054	6.860	***	
e32			.338	.047	7.244	***	
e34			.472	.060	7.848	***	
e35			.487	.061	8.017	***	
e33			.309	.048	6.459	***	
e1_16			.298	.041	7.287	***	
e1_15			.288	.039	7.312	***	
e1_14			.337	.047	7.159	***	
e1_13			.362	.044	8.273	***	
e1_12			.473	.054	8.774	***	
e2_1			.475	.054	8.732	***	
e2_2			.355	.044	8.077	***	
e2_4			.318	.043	7.451	***	
e2_5			.372	.046	8.025	***	
e2_3			.253	.034	7.327	***	
e2_6			.645	.071	9.075	***	

trade (trade - Default model)

Estimates (trade - Default model)

Scalar Estimates (trade - Default model)

Maximum Likelihood Estimates

Regression Weights: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.330	.049	6.762	***	
BAuthen	<--	SMEBE	.712	.059	12.128	***	
BFunc	<--	SMEBE	.377	.052	7.194	***	
BReso	<--	SMEBE	.376	.053	7.169	***	
BAware	<--	SMEBE	.357	.050	7.137	***	
item20	<--	BFunc	1.737	.237	7.324	***	
item21	<--	BFunc	1.592	.221	7.211	***	

			Estimate	S.E.	C.R.	P	Label
item22	<--	BFunct	1.487	.215	6.928	***	
item17	<--	BFunct	1.296	.154	8.423	***	
item16	<--	BFunct	1.000				
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.836	.087	9.560	***	
item32	<--	BAttent	1.800	.267	6.729	***	
item34	<--	BAttent	.898	.101	8.920	***	p2
item35	<--	BAttent	1.386	.208	6.670	***	
item33	<--	BAttent	1.000				
item9	<--	BAuthen	.874	.085	10.286	***	
P1_16	<--	BAware	1.812	.221	8.203	***	
P1_15	<--	BAware	1.614	.201	8.046	***	
P1_14	<--	BAware	1.359	.184	7.370	***	
P1_13	<--	BAware	1.181	.168	7.035	***	
P1_12	<--	BAware	1.000				
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.136	.156	7.306	***	
P2_3	<--	BReso	1.404	.176	7.970	***	
P2_4	<--	BReso	1.443	.181	7.986	***	
P2_5	<--	BReso	1.372	.180	7.620	***	
P2_6	<--	BReso	.768	.150	5.117	***	

Covariances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.161	.035	4.639	***	
e34	<-->	e35	.115	.034	3.341	***	
e2_5	<-->	e2_6	.165	.043	3.849	***	

Variances: (trade - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.021	.029	.709	.479	
res4	.028	.013	2.177	.029	
res2	.029	.011	2.568	.010	
res1	.085	.023	3.740	***	
res5	.101	.027	3.797	***	
e20	.285	.039	7.262	***	
e21	.284	.037	7.631	***	
e22	.348	.042	8.207	***	
e17	.386	.045	8.631	***	
e16	.405	.045	9.015	***	
e27	.295	.042	7.079	***	
e8	.423	.050	8.470	***	
e9	.363	.045	8.136	***	
e32	.284	.048	5.920	***	
e34	.407	.045	8.999	***	
e35	.377	.047	8.097	***	
e33	.570	.062	9.121	***	
e1_16	.272	.043	6.382	***	
e1_15	.275	.039	7.059	***	
e1_14	.391	.047	8.339	***	
e1_13	.382	.044	8.624	***	
e1_12	.411	.046	8.941	***	
e2_1	.437	.050	8.794	***	
e2_2	.349	.042	8.311	***	
e2_4	.307	.042	7.242	***	
e2_5	.395	.050	7.939	***	
e2_3	.295	.041	7.282	***	
e2_6	.593	.065	9.181	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	107	804.917	445	.000	1.809
Saturated model	552	.000	0		
Independence model	46	4708.648	506	.000	9.306

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.052	.840	.801	.677
Saturated model	.000	1.000		
Independence model	.294	.237	.167	.217

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.829	.806	.916	.903	.914
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.879	.729	.804

Model	PRATIO	PNFI	PCFI
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	359.917	284.409	443.256
Saturated model	.000	.000	.000
Independence model	4202.648	3986.627	4425.977

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.199	.983	.777	1.211
Saturated model	.000	.000	.000	.000
Independence model	12.865	11.483	10.892	12.093

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.047	.042	.052	.826
Independence model	.151	.147	.155	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1018.917	1051.219		
Saturated model	1104.000	1270.642		
Independence model	4800.648	4814.535		

ECVI

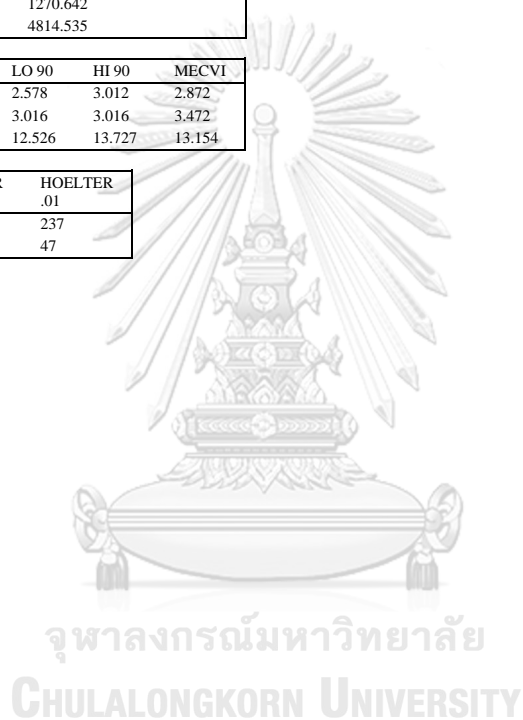
Model	ECVI	LO 90	HI 90	MECVI
Default model	2.784	2.578	3.012	2.872
Saturated model	3.016	3.016	3.016	3.472
Independence model	13.117	12.526	13.727	13.154

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	227	237
Independence model	45	47

Execution time summary

Minimization:	.031
Miscellaneous:	.609
Bootstrap:	.000
Total:	.640



30. Factor loadings of item 35 on BAttentive constrained equal (Model 23)

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS baseline model BAttent item 35 factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed.amw

Analysis Summary

Date and Time

Date: Sunday, October 28, 2018

Time: 8:57:14 PM

Title

Amos baseline model BAttent item 35 factor loading constraint equal for testing measurement model invariance of 3 smes with equality constraints imposed: Sunday, October 28, 2018 8:57 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (manu)

Your model contains the following variables (manu)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (manu)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (manu)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	1	0	0	0	0	1
Unlabeled	22	3	28	0	0	53
Total	56	3	29	0	0	88

Group number 2 (Group number 2)

Notes for Group (Group number 2)



The model is recursive.
 Sample size = 184
 Variable Summary (trade)
 Your model contains the following variables (trade)
 Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunc
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (trade)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (trade)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	1	0	0	0	0	1
Unlabeled	22	3	28	0	0	53
Total	56	3	29	0	0	88

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 107

Degrees of freedom (552 - 107): 445

Result (Default model)

Minimum was achieved

Chi-square = 812.998

Degrees of freedom = 445

Probability level = .000

manu (manu - Default model)

Estimates (manu - Default model)

Scalar Estimates (manu - Default model)

Maximum Likelihood Estimates



Regression Weights: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.475	.057	8.346	***	
BAuthen	<--	SMEBE	.449	.065	6.944	***	
BFunc	<--	SMEBE	.222	.058	3.822	***	
BReso	<--	SMEBE	.499	.060	8.258	***	
BAware	<--	SMEBE	.428	.058	7.436	***	
item20	<--	BFunc	2.263	.589	3.844	***	
item21	<--	BFunc	2.637	.681	3.875	***	
item22	<--	BFunc	2.864	.729	3.928	***	
item17	<--	BFunc	1.284	.229	5.610	***	
item16	<--	BFunc	1.000				
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.479	.203	7.301	***	
item32	<--	BAttent	.956	.112	8.531	***	
item34	<--	BAttent	.929	.118	7.872	***	
item35	<--	BAttent	1.019	.108	9.450	***	p2
item33	<--	BAttent	1.000				
item9	<--	BAuthen	1.358	.191	7.111	***	
P1_16	<--	BAware	1.334	.142	9.405	***	
P1_15	<--	BAware	1.305	.139	9.395	***	
P1_14	<--	BAware	1.458	.154	9.466	***	
P1_13	<--	BAware	1.114	.129	8.650	***	
P1_12	<--	BAware	1.000				
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.151	.131	8.793	***	
P2_3	<--	BReso	1.187	.127	9.331	***	
P2_4	<--	BReso	1.294	.140	9.261	***	
P2_5	<--	BReso	1.188	.135	8.809	***	
P2_6	<--	BReso	.836	.130	6.422	***	

Covariances: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.428	.058	7.442	***	
e34	<-->	e35	.134	.047	2.835	.005	
e2_5	<-->	e2_6	.104	.042	2.478	.013	

Variances: (manu - Default model)

			Estimate	S.E.	C.R.	P	Label
SMEBE			1.000				
res3			.076	.027	2.807	.005	
res4			.155	.039	3.984	***	
res2			.026	.014	1.876	.061	
res1			.172	.040	4.323	***	
res5			.111	.030	3.702	***	
e20			.373	.048	7.801	***	
e21			.415	.056	7.387	***	
e22			.285	.049	5.848	***	
e17			.538	.059	9.184	***	
e16			.712	.076	9.388	***	
e27			.593	.068	8.702	***	
e8			.306	.053	5.718	***	
e9			.368	.054	6.860	***	
e32			.338	.047	7.198	***	
e34			.473	.061	7.792	***	
e35			.468	.062	7.559	***	
e33			.333	.047	7.025	***	
e1_16			.299	.041	7.290	***	
e1_15			.288	.039	7.311	***	
e1_14			.337	.047	7.158	***	
e1_13			.362	.044	8.272	***	
e1_12			.473	.054	8.774	***	
e2_1			.475	.054	8.731	***	
e2_2			.355	.044	8.074	***	
e2_4			.319	.043	7.454	***	
e2_5			.372	.046	8.025	***	
e2_3			.253	.034	7.325	***	
e2_6			.645	.071	9.074	***	

trade (trade - Default model)

Estimates (trade - Default model)

Scalar Estimates (trade - Default model)

Maximum Likelihood Estimates

Regression Weights: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.383	.051	7.529	***	
BAuthen	<--	SMEBE	.714	.059	12.173	***	
BFunc	<--	SMEBE	.377	.052	7.198	***	
BReso	<--	SMEBE	.376	.052	7.169	***	
BAware	<--	SMEBE	.356	.050	7.123	***	
item20	<--	BFunc	1.736	.237	7.333	***	
item21	<--	BFunc	1.589	.220	7.214	***	

			Estimate	S.E.	C.R.	P	Label
item22	<--	BFunc	1.486	.214	6.936	***	
item17	<--	BFunc	1.294	.154	8.428	***	
item16	<--	BFunc	1.000				
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	.836	.087	9.565	***	
item32	<--	BAttent	1.532	.205	7.467	***	
item34	<--	BAttent	.881	.144	6.128	***	
item35	<--	BAttent	1.019	.108	9.450	***	p2
item33	<--	BAttent	1.000				
item9	<--	BAuthen	.874	.085	10.304	***	
P1_16	<--	BAware	1.812	.221	8.204	***	
P1_15	<--	BAware	1.613	.200	8.047	***	
P1_14	<--	BAware	1.358	.184	7.369	***	
P1_13	<--	BAware	1.180	.168	7.034	***	
P1_12	<--	BAware	1.000				
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.137	.155	7.317	***	
P2_3	<--	BReso	1.403	.176	7.974	***	
P2_4	<--	BReso	1.442	.180	7.987	***	
P2_5	<--	BReso	1.370	.180	7.622	***	
P2_6	<--	BReso	.767	.150	5.118	***	

Covariances: (trade - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.161	.035	4.633	***	
e34	<-->	e35	.112	.034	3.263	.001	
e2_5	<-->	e2_6	.165	.043	3.850	***	

Variances: (trade - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.018	.029	.601	.548	
res4	.041	.017	2.335	.020	
res2	.030	.011	2.582	.010	
res1	.086	.023	3.747	***	
res5	.102	.027	3.800	***	
e20	.285	.039	7.249	***	
e21	.285	.037	7.638	***	
e22	.348	.042	8.200	***	
e17	.386	.045	8.629	***	
e16	.405	.045	9.012	***	
e27	.295	.042	7.093	***	
e8	.423	.050	8.482	***	
e9	.363	.045	8.146	***	
e32	.289	.049	5.920	***	
e34	.392	.045	8.742	***	
e35	.396	.046	8.542	***	
e33	.566	.063	8.930	***	
e1_16	.272	.043	6.372	***	
e1_15	.275	.039	7.053	***	
e1_14	.391	.047	8.338	***	
e1_13	.382	.044	8.623	***	
e1_12	.411	.046	8.940	***	
e2_1	.436	.050	8.792	***	
e2_2	.348	.042	8.303	***	
e2_4	.308	.042	7.248	***	
e2_5	.395	.050	7.940	***	
e2_3	.296	.041	7.281	***	
e2_6	.593	.065	9.180	***	

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	107	812.998	445	.000	1.827
Saturated model	552	.000	0		
Independence model	46	4708.648	506	.000	9.306

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.055	.838	.799	.676
Saturated model	.000	1.000		
Independence model	.294	.237	.167	.217

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.827	.804	.914	.900	.912
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.879	.728	.802

Model	PRATIO	PNFI	PCFI
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	367.998	291.941	451.883
Saturated model	.000	.000	.000
Independence model	4202.648	3986.627	4425.977

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	2.221	1.005	.798	1.235
Saturated model	.000	.000	.000	.000
Independence model	12.865	11.483	10.892	12.093

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.048	.042	.053	.781
Independence model	.151	.147	.155	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1026.998	1059.300		
Saturated model	1104.000	1270.642		
Independence model	4800.648	4814.535		

ECVI

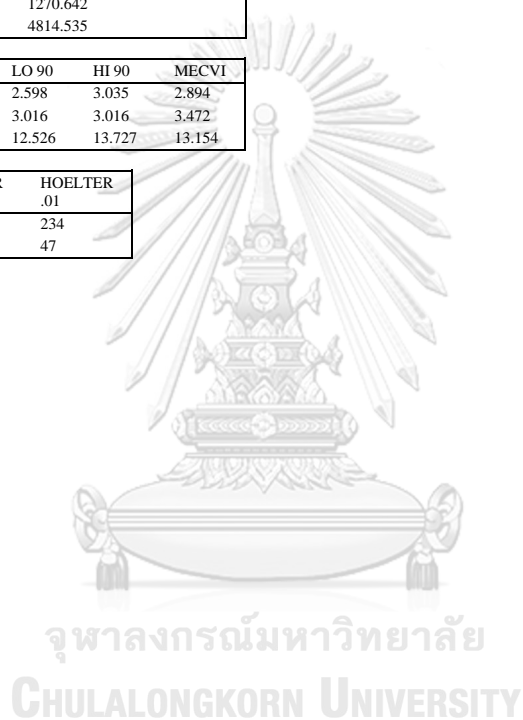
Model	ECVI	LO 90	HI 90	MECVI
Default model	2.806	2.598	3.035	2.894
Saturated model	3.016	3.016	3.016	3.472
Independence model	13.117	12.526	13.727	13.154

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	224	234
Independence model	45	47

Execution time summary

Minimization:	.031
Miscellaneous:	.734
Bootstrap:	.000
Total:	.765



Appendix P

AMOS outputs for the SME brand equity model in case of consumers with high brand equity level

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS second order 3 ba br highSMEBE.amw

Analysis Summary

Date and Time

Date: Sunday, October 28, 2018

Time: 2:04:54 AM

Title

Amos second order 3 ba br highsmebe: Sunday, October 28, 2018 2:04 AM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 303

Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (Group number 1)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0



	Weights	Covariances	Variances	Means	Intercepts	Total
Unlabeled	23	28	28	0	0	79
Total	56	28	29	0	0	113

Assessment of normality (Group number 1)

Variable	min	max	skew	c.r.	kurtosis	c.r.
P2_6	1.000	5.000	-.413	-2.938	.565	2.007
P2_5	1.000	5.000	-.281	-1.996	.086	.304
P2_4	1.000	5.000	-.501	-3.562	.694	2.466
P2_3	1.000	5.000	-.251	-1.781	.801	2.845
P2_2	1.000	5.000	-.318	-2.260	.597	2.122
P2_1	1.000	5.000	-.568	-4.035	1.050	3.732
P1_12	1.000	5.000	-.062	-.438	-.112	-.398
P1_13	2.000	5.000	-.126	-.896	-.296	-1.051
P1_14	1.000	5.000	-.232	-1.647	.190	.676
P1_15	1.000	5.000	-.518	-3.679	.480	1.704
P1_16	1.000	5.000	-.318	-2.260	.116	.413
item33	1.000	5.000	-.563	-4.000	1.454	5.166
item35	2.000	5.000	.085	.607	-.364	-1.295
item34	1.000	6.000	-.083	-.591	.616	2.189
item32	2.000	5.000	-.079	-.558	-.158	-.562
item9	1.000	5.000	-.168	-1.196	.214	.762
item8	1.000	5.000	-.332	-2.358	.590	2.095
item27	1.000	5.000	-.213	-1.512	.286	1.018
item16	3.000	5.000	.058	.412	-.677	-2.406
item17	2.000	5.000	.051	.363	-.448	-1.591
item22	2.000	5.000	.071	.505	-.508	-1.805
item21	1.000	5.000	-.621	-4.412	1.805	6.415
item20	2.000	5.000	.080	.569	-.478	-1.697
Multivariate					134.753	34.584

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 276

Number of distinct parameters to be estimated: 79

Degrees of freedom (276 - 79): 197

Result (Default model)

Minimum was achieved

Chi-square = 213.287

Degrees of freedom = 197

Probability level = .203

Group number 1 (Group number 1 - Default model)

Estimates (Group number 1 - Default model)

Scalar Estimates (Group number 1 - Default model)

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.196	.035	5.640	***	par_9
BAuthen <-- SMEBE	.339	.041	8.315	***	par_10
BFunc <-- SMEBE	.303	.037	8.075	***	par_11
BReso <-- SMEBE	.294	.037	7.950	***	par_21
BAware <-- SMEBE	.543	.046	11.798	***	par_23
item20 <-- BFunc	1.000				
item21 <-- BFunc	.944	.132	7.141	***	par_1
item22 <-- BFunc	.976	.132	7.404	***	par_2
item17 <-- BFunc	.619	.113	5.473	***	par_3
item16 <-- BFunc	.525	.113	4.648	***	par_4
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	1.123	.172	6.540	***	par_5
item32 <-- BAttent	1.000				
item34 <-- BAttent	1.126	.206	5.462	***	par_6
item35 <-- BAttent	1.380	.243	5.672	***	par_7
item33 <-- BAttent	.668	.178	3.744	***	par_8
item9 <-- BAuthen	1.056	.154	6.856	***	par_12
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	.894	.061	14.724	***	par_13
P1_14 <-- BAware	.758	.058	12.983	***	par_14
P1_13 <-- BAware	.725	.056	12.866	***	par_15
P1_12 <-- BAware	.624	.059	10.508	***	par_16
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	1.131	.124	9.094	***	par_17
P2_3 <-- BReso	1.665	.193	8.611	***	par_18
P2_4 <-- BReso	1.668	.196	8.490	***	par_19
P2_5 <-- BReso	1.644	.192	8.560	***	par_20
P2_6 <-- BReso	1.302	.179	7.276	***	par_22

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
BAttent <-- SMEBE	.612
BAuthen <-- SMEBE	.858
BFunc <-- SMEBE	.730

	Estimate
BReso <-- SMEBE	.806
BAware <-- SMEBE	.763
item20 <-- BFunc	.620
item21 <-- BFunc	.568
item22 <-- BFunc	.598
item17 <-- BFunc	.400
item16 <-- BFunc	.332
item27 <-- BAuthen	.567
item8 <-- BAuthen	.607
item32 <-- BAttent	.488
item34 <-- BAttent	.541
item35 <-- BAttent	.648
item33 <-- BAttent	.303
item9 <-- BAuthen	.598
P1_16 <-- BAware	.840
P1_15 <-- BAware	.776
P1_14 <-- BAware	.700
P1_13 <-- BAware	.697
P1_12 <-- BAware	.593
P2_1 <-- BReso	.506
P2_2 <-- BReso	.553
P2_3 <-- BReso	.790
P2_4 <-- BReso	.744
P2_5 <-- BReso	.727
P2_6 <-- BReso	.621

Covariances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
e2_1 <--> e2_2	.133	.023	5.664	***	par_24
e17 <--> e16	.165	.025	6.709	***	par_25
e2_3 <--> e2_6	-.149	.024	-6.144	***	par_26
e1_13 <--> e1_12	.064	.021	3.033	.002	par_27
e1_15 <--> e2_4	.055	.020	2.760	.006	par_28
e2_4 <--> e2_6	-.091	.026	-3.532	***	par_29
e8 <--> e2_3	-.091	.021	-4.252	***	par_30
e33 <--> e1_13	-.057	.020	-2.839	.005	par_31
e9 <--> e33	.084	.023	3.687	***	par_32
e2_2 <--> e2_5	.055	.021	2.662	.008	par_33
e33 <--> e2_5	-.048	.022	-2.153	.031	par_34
e1_16 <--> e2_2	-.080	.020	-3.979	***	par_35
e1_16 <--> e2_6	-.056	.020	-2.786	.005	par_36
e8 <--> e2_5	-.077	.022	-3.463	***	par_37
e1_15 <--> e2_2	-.061	.020	-3.075	.002	par_38
e20 <--> e1_15	-.044	.019	-2.369	.018	par_39
e20 <--> e34	-.041	.019	-2.128	.033	par_40
e21 <--> e1_14	-.051	.020	-2.504	.012	par_41
e21 <--> e2_2	-.056	.020	-2.842	.004	par_42
e1_13 <--> e2_2	-.041	.018	-2.231	.026	par_43
e27 <--> e33	.065	.023	2.762	.006	par_44
e33 <--> e2_6	.067	.025	2.702	.007	par_45
e34 <--> e33	.062	.025	2.514	.012	par_46
e27 <--> e8	-.074	.026	-2.814	.005	par_47
e21 <--> e2_6	-.056	.022	-2.550	.011	par_48
e8 <--> e35	-.048	.022	-2.184	.029	par_49
e17 <--> e2_3	-.035	.016	-2.135	.033	par_50
e22 <--> e2_4	-.041	.020	-2.022	.043	par_51

Correlations: (Group number 1 - Default model)

	Estimate
e2_1 <--> e2_2	.344
e17 <--> e16	.455
e2_3 <--> e2_6	-.526
e1_13 <--> e1_12	.202
e1_15 <--> e2_4	.195
e2_4 <--> e2_6	-.278
e8 <--> e2_3	-.331
e33 <--> e1_13	-.160
e9 <--> e33	.223
e2_2 <--> e2_5	.156
e33 <--> e2_5	-.126
e1_16 <--> e2_2	-.279
e1_16 <--> e2_6	-.202
e8 <--> e2_5	-.235
e1_15 <--> e2_2	-.192
e20 <--> e1_15	-.163
e20 <--> e34	-.141
e21 <--> e1_14	-.164
e21 <--> e2_2	-.160
e1_13 <--> e2_2	-.124

	P 2 - 6	P 2 - 5	P 2 - 4	P 2 - 3	P 2 - 2	P 2 - 1	P 1 - 2	P 1 - 3	P 1 - 4	P 1 - 5	P 1 - 6	ite m 3 3	ite m 3 5	ite m 3 4	ite m 3 2	ite m 9	ite m 8	ite m 2 7	ite m 1 6	ite m 1 7	ite m 2 2	ite m 2 1	ite m 2 0	
P 2 - 6	0																							
P 2 - 5	4																							
P 2 - 4	. 0	. 0																						
P 2 - 3	2	0																						
P 2 - 2	5	3																						
P 2 - 1	.	.	.																					
P 1 - 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P 1 - 3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P 1 - 4	8	9	6																					
P 1 - 5	.	.	.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
P 1 - 6	0	0	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ite m 3 3	2	2	2	7																				
ite m 3 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ite m 3 4	1	0	0	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ite m 3 2	7	3	9	3	6	5	3	3	5	6	5	0	0	0	0	0	0	0	0	0	0	0	0	0
ite m 9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ite m 8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ite m 2 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ite m 2 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ite m 2 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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	P 2 6	P 2 5	P 2 4	P 2 3	P 2 2	P 2 1	P 1 2	P 1 1	P 1 1	P 1 1	P 1 1	P 1 1	ite m 3 3	ite m 3 5	ite m 3 4	ite m 3 2	ite m 9	ite m 8	ite m 2 7	ite m 1 6	ite m 1 7	ite m 2 2	ite m 2 1	ite m 2 0	
m 3 3	4 5 2	2 7 1	1 1 8	3 8 1	0 3 1	2 1 8	4 0 5	0 4 6	6 9 4	4 4 9	3 4 0	5 0 0	8												
ite m 3 5	- 1 0	- 1 4	- 9 1	3 6 0	6 2 1	0 8 4	1 3 1	5 8 6	0 1 0	4 1 1	4 1 7	0 2 3	9												
ite m 3 4	- 6 1	- 4 9	- 1 7	2 4 6	8 6 8	2 6 1	4 7 2	1 4 4	1 8 5	1 0 9	2 5 0	8 9 5	6 2 4	8 0 7	0 0 5										
ite m 3 2	1 5 2	- 5 2	- 5 1	3 2 2	0 0 7	0 2 3	4 2 2	1 6 3	6 5 7	3 0 6	8 1 3	8 2 6	4 7 1	4 2 2	4 7 9	0 0 0									
ite m 9	0 4 5	7 8 6	6 8 1	3 4 2	3 1 9	5 1 1	6 9 5	0 2 9	2 4 1	8 9 1	7 6 6	4 0 3	3 1 6	5 0 6	8 3 0	3 0 7									
ite m 8	0 0 6	2 3 4	1 0 9	0 0 3	0 0 8	2 9 4	3 2 8	2 2 0	1 1 0	4 4 1	2 9 4	4 8 0	1 2 5	1 3 6	3 4 6	4 2 7									
ite m 2 7	- 7 5	- 2 9	- 0 0	3 9 4	3 6 2	1 9 3	6 7 5	7 3 4	4 4 0	1 0 2	0 3 6	8 3 3	1 1 3	1 2 2	1 6 2	6 2 0									
ite m 1 6	1 0 0	- 0 2	- 5 8	0 4 8	3 5 6	8 3 0	5 3 9	3 3 0	6 3 1	0 0 9	4 1 7	3 1 7	1 9 6	1 7 8	3 3 2	9 0 8									
ite m 1 7	7 4 2	7 0 1	9 3 6	5 3 4	6 3 4	2 0 7	0 6 6	5 6 6	3 2 0	1 3 0	0 1 9	3 3 6	0 7 6	4 7 9	1 4 4	7 6 8									
ite m 2 2	5 7 2	0 8 8	3 0 1	6 5 2	2 5 5	1 5 8	0 8 4	5 5 1	3 5 2	1 8 7	8 9 2	5 6 2	4 0 6	0 5 8	4 1 6	8 2 4									
ite m 2 1	1 6 2	0 4 7	6 7 0	9 4 3	6 2 0	2 7 5	2 9 8	1 1 0	5 5 1	0 1 8	2 1 8	6 2 0	6 7 2	0 4 6	4 1 8	6 2 8									
ite m 2 0	0 3 0	5 0 9	3 1 8	8 8 8	1 6 9	9 1 7	3 8 4	3 7 3	4 5 0	3 4 0	1 9 3	8 9 8	6 4 7	1 1 8	1 2 6	1 3 2									

Factor Score Weights (Group number 1 - Default model)

	P 2 6	P 2 5	P 2 4	P 2 3	P 2 2	P 2 1	P 1 2	P 1 1	P 1 1	P 1 1	P 1 1	ite m 3 3	ite m 3 5	ite m 3 4	ite m 3 2	ite m 9	ite m 8	ite m 2 7	ite m 1 6	ite m 1 7	ite m 2 2	ite m 2 1	ite m 2 0	
S M E B E	1 9 7	0 5 5	0 7 4	2 6 8	0 7 9	0 1 9	0 2 4	0 4 3	0 6 8	0 8 3	0 7 0	1 0 3	1 2 3	0 8 0	0 4 7	1 2 6	2 4 9	1 6 7	0 0 2	0 6 7	0 6 5	0 8 2	0 5 5	1 2 7
B R e s o	1 4 4	0 5 4	1 0 2	1 9 9	0 2 1	0 1 6	0 0 2	0 0 5	0 0 0	0 2 3	0 4 1	0 1 9	0 2 3	0 0 0	0 0 0	0 2 2	0 6 3	0 1 1	0 0 3	0 1 2	0 2 3	0 0 9	0 2 6	0 0 9
B A w	0 6	- 0	- 0	0 3	1 4	0 0	0 6	1 4	1 4	2 2	3 2	0 0	0 1	0 0	0 0	0 1	0 2	0 1	0 0	0 0	0 0	0 0	0 5	0 3

	P 2	P 2	P 2	P 2	P 2	P 2	P 1	P 1	P 1	P 1	P 1	it e m	it e m	it e m	it e m	it e m	it e m	it e m	it e m	it e m	it e m	it e m			
	6	5	4	3	2	1	1	1	1	1	1	3	3	3	3	2	9	3	3	7	0	4	0	7	5
ar	1	2	3	8	5	5	7	6	6	8	8	3	2	9	5	3	3	7	0	4	0	7	5		
e		7	4		4																				
B																									
A	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0
t	0	1	0	2	0	0	0	1	0	1	1	3	8	1	0	0	4	1	0	0	0	0	0	0	2
t	9	7	3	8	5	1	1	1	5	0	1	4	3	9	4	1	8	2	0	6	5	8	5		
n																									
B																									
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0
u	4	2	0	9	0	0	0	0	1	1	3	4	4	2	0	2	7	4	0	1	1	2	2		
t	8	3	1	1	7	8	7	0	4	8	4	8	4	1	8	3	8	9	2	8	5	5	2		
n																									
B																									
F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
u	4	0	2	4	3	1	0	0	2	2	2	1	3	0	1	3	2	3	7	5	5	5	7		
n	7	9	1	4	2	5	1	1	3	9	0	7	3	1	4	9	1	4	2	0	2	0	3		

Modification Indices (Group number 1 - Default model)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change
e2_5 <-> res4	6.406	-.031
e2_2 <-> res4	6.153	.029

Variances: (Group number 1 - Default model)

	M.I.	Par Change

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
P2_5 <--- item35	4.150	-.097
P2_2 <--- item34	5.304	.110
P2_1 <--- P1_14	4.091	.088
P1_12 <--- P2_5	5.207	.095
P1_12 <--- P2_1	4.048	.096
P1_12 <--- item27	5.692	.118
P1_12 <--- item16	4.156	.107
P1_15 <--- item33	4.961	-.101
P1_15 <--- item9	4.244	-.094
item32 <--- P2_6	4.020	.091
item32 <--- item33	4.023	.099
item9 <--- P2_2	4.551	.096

Minimization History (Default model)

Iteration	Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e 15		-.766	9999.000	2419.360	0	9999.000
1	e 7		-.152	2.428	1326.190	21	.458
2	e 3		-.089	1.001	830.710	6	.889
3	e 2		-.028	1.281	431.837	5	.861
4	e 0	8655.946	.827	341.754	341.754	5	.505
5	e 0	165.696	.585	320.756	320.756	7	.000
6	e 0	270.477	1.003	239.561	239.561	1	.833
7	e 0	995.017	.679	215.880	215.880	1	.869
8	e 0	679.684	.106	213.332	213.332	1	1.012
9	e 0	638.049	.055	213.287	213.287	1	1.010
10	e 0	630.774	.001	213.287	213.287	1	1.000

Model Fit Summary

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	79	213.287	197	.203	1.083
Saturated model	276	.000	0		
Independence model	23	2350.634	253	.000	9.291

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.024	.945	.922	.674
Saturated model	.000	1.000		
Independence model	.144	.391	.336	.358

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
Default model	.909	.883	.992	.990	.992
Saturated model	1.000	1.000	1.000	1.000	1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.779	.708	.773
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	16.287	.000	55.760
Saturated model	.000	.000	.000
Independence model	2097.634	1946.136	2256.529

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.706	.054	.000	.185
Saturated model	.000	.000	.000	.000
Independence model	7.784	6.946	6.444	7.472

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.017	.000	.031	1.000
Independence model	.166	.160	.172	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	371.287	384.928	664.672	743.672
Saturated model	552.000	599.655	1576.990	1852.990
Independence model	2396.634	2400.605	2482.050	2505.050

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.229	1.175	1.360	1.275
Saturated model	1.828	1.828	1.828	1.986
Independence model	7.936	7.434	8.462	7.949

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	327	349
Independence model	38	40

Execution time summary

Minimization:	.016
Miscellaneous:	.654
Bootstrap:	.000
Total:	.670



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Appendix Q

AMOS outputs for the SME brand equity model in case of consumers with low brand equity level

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS second order 3 ba br lowSMEBE.amw

Analysis Summary

Date and Time

Date: Sunday, October 28, 2018

Time: 1:32:55 AM

Title

Amos second order 3 ba br lowsmebe: Sunday, October 28, 2018 1:32 AM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 249

Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (Group number 1)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0



	Weights	Covariances	Variances	Means	Intercepts	Total
Unlabeled	23	32	28	0	0	83
Total	56	32	29	0	0	117

Assessment of normality (Group number 1)

Variable	min	max	skew	c.r.	kurtosis	c.r.
P2_6	1.000	5.000	.016	.106	.000	.001
P2_5	1.000	5.000	-.032	-.207	-.138	-.445
P2_4	1.000	5.000	.139	.894	-.344	-1.109
P2_3	1.000	5.000	.155	.999	.218	.703
P2_2	1.000	5.000	-.478	-3.077	.531	1.710
P2_1	1.000	5.000	-.019	-.119	.361	1.163
P1_12	1.000	5.000	.140	.903	.711	2.291
P1_13	1.000	5.000	.082	.527	.213	.686
P1_14	1.000	5.000	.296	1.904	-.062	-.199
P1_15	1.000	5.000	.456	2.939	.316	1.019
P1_16	1.000	5.000	.395	2.542	-.018	-.058
item33	1.000	5.000	-.063	-.406	-.159	-.512
item35	1.000	5.000	-.074	-.476	-.088	-.283
item34	1.000	4.000	-.285	-1.838	-.274	-.882
item32	1.000	5.000	-.111	-.713	.187	.604
item9	1.000	5.000	.015	.096	.016	.052
item8	1.000	5.000	.118	.761	.427	1.376
item27	1.000	5.000	.210	1.353	.080	.258
item16	1.000	5.000	.072	.464	-.103	-.331
item17	1.000	5.000	.073	.468	.037	.118
item22	1.000	5.000	.028	.179	-.153	-.492
item21	1.000	5.000	.006	.036	.311	1.002
item20	1.000	5.000	.050	.321	-.029	-.093
Multivariate					115.862	26.956

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 276

Number of distinct parameters to be estimated: 83

Degrees of freedom (276 - 83): 193

Result (Default model)

Minimum was achieved

Chi-square = 221.865

Degrees of freedom = 193

Probability level = .076

Group number 1 (Group number 1 - Default model)

Estimates (Group number 1 - Default model)

Scalar Estimates (Group number 1 - Default model)

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.156	.034	4.530	***	par_9
BAuthen <-- SMEBE	.242	.047	5.174	***	par_10
BFunct <-- SMEBE	.325	.045	7.232	***	par_11
BReso <-- SMEBE	.392	.050	7.797	***	par_21
BAware <-- SMEBE	.391	.053	7.412	***	par_23
item20 <-- BFunct	1.000				
item21 <-- BFunct	1.218	.163	7.477	***	par_1
item22 <-- BFunct	1.213	.163	7.449	***	par_2
item17 <-- BFunct	.544	.133	4.076	***	par_3
item16 <-- BFunct	.523	.155	3.373	***	par_4
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	1.478	.271	5.457	***	par_5
item32 <-- BAttent	1.000				
item34 <-- BAttent	1.813	.340	5.335	***	par_6
item35 <-- BAttent	1.380	.271	5.086	***	par_7
item33 <-- BAttent	1.650	.321	5.141	***	par_8
item9 <-- BAuthen	1.476	.272	5.433	***	par_12
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	1.160	.090	12.941	***	par_13
P1_14 <-- BAware	1.094	.087	12.622	***	par_14
P1_13 <-- BAware	.909	.087	10.473	***	par_15
P1_12 <-- BAware	.602	.079	7.637	***	par_16
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	1.034	.105	9.862	***	par_17
P2_3 <-- BReso	1.304	.146	8.934	***	par_18
P2_4 <-- BReso	1.180	.137	8.632	***	par_19
P2_5 <-- BReso	.937	.135	6.957	***	par_20
P2_6 <-- BReso	.819	.139	5.914	***	par_22

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
BAttent <-- SMEBE	.485
BAuthen <-- SMEBE	.686
BFunct <-- SMEBE	.781

	Estimate
BReso <-- SMEBE	.793
BAware <-- SMEBE	.585
item20 <-- BFunc	.582
item21 <-- BFunc	.702
item22 <-- BFunc	.679
item17 <-- BFunc	.288
item16 <-- BFunc	.248
item27 <-- BAuthen	.433
item8 <-- BAuthen	.710
item32 <-- BAttent	.463
item34 <-- BAttent	.773
item35 <-- BAttent	.599
item33 <-- BAttent	.626
item9 <-- BAuthen	.676
P1_16 <-- BAware	.742
P1_15 <-- BAware	.872
P1_14 <-- BAware	.787
P1_13 <-- BAware	.725
P1_12 <-- BAware	.495
P2_1 <-- BReso	.588
P2_2 <-- BReso	.654
P2_3 <-- BReso	.825
P2_4 <-- BReso	.709
P2_5 <-- BReso	.576
P2_6 <-- BReso	.467

Covariances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.441	.048	9.098	***	par_24
e2_1 <--> e2_2	.114	.029	3.929	***	par_25
e20 <--> e2_1	-.112	.026	-4.399	***	par_26
e2_5 <--> e2_6	.137	.031	4.451	***	par_27
e1_15 <--> e1_13	-.098	.025	-3.891	***	par_28
e2_4 <--> e2_5	.150	.028	5.349	***	par_29
e1_12 <--> e2_4	.105	.025	4.159	***	par_30
e16 <--> e2_1	.083	.026	3.143	.002	par_31
e20 <--> e17	.073	.021	3.445	***	par_32
e1_14 <--> e2_6	.095	.030	3.205	.001	par_33
e21 <--> e2_3	-.075	.021	-3.530	***	par_34
e32 <--> e1_13	.088	.025	3.443	***	par_35
e32 <--> e34	-.098	.029	-3.351	***	par_36
e1_13 <--> e1_12	.079	.031	2.601	.009	par_37
e27 <--> e34	.081	.028	2.846	.004	par_38
e17 <--> e27	.060	.024	2.457	.014	par_39
e20 <--> e2_5	.094	.022	4.304	***	par_40
e33 <--> e2_2	.081	.026	3.148	.002	par_41
e20 <--> e1_12	-.073	.025	-2.971	.003	par_42
e2_1 <--> e2_5	-.071	.024	-2.929	.003	par_43
e27 <--> e1_13	.070	.028	2.483	.013	par_44
e2_3 <--> e2_6	-.089	.028	-3.148	.002	par_45
e1_13 <--> e2_5	.049	.022	2.278	.023	par_46
e34 <--> e2_1	-.057	.024	-2.398	.016	par_47
e22 <--> e2_6	-.082	.029	-2.850	.004	par_48
e34 <--> e1_14	-.049	.023	-2.150	.032	par_49
e34 <--> e2_5	.047	.021	2.266	.023	par_50
e17 <--> e2_2	.054	.020	2.715	.007	par_51
e1_16 <--> e2_2	-.068	.023	-2.914	.004	par_52
e1_13 <--> e2_2	-.053	.022	-2.442	.015	par_53
e32 <--> e1_16	.060	.026	2.279	.023	par_54
e16 <--> e2_5	-.056	.022	-2.615	.009	par_55

Correlations: (Group number 1 - Default model)

	Estimate
e17 <--> e16	.689
e2_1 <--> e2_2	.284
e20 <--> e2_1	-.284
e2_5 <--> e2_6	.272
e1_15 <--> e1_13	-.389
e2_4 <--> e2_5	.392
e1_12 <--> e2_4	.255
e16 <--> e2_1	.143
e20 <--> e17	.166
e1_14 <--> e2_6	.216
e21 <--> e2_3	-.330
e32 <--> e1_13	.246
e32 <--> e34	-.333
e1_13 <--> e1_12	.194
e27 <--> e34	.231
e17 <--> e27	.109

		Estimate
e20 <-> e2_5		.246
e33 <-> e2_2		.207
e20 <-> e1_12		-.178
e2_1 <-> e2_5		-.159
e27 <-> e1_13		.165
e2_3 <-> e2_6		-.262
e1_13 <-> e2_5		.129
e34 <-> e2_1		-.175
e22 <-> e2_6		-.196
e34 <-> e1_14		-.179
e34 <-> e2_5		.149
e17 <-> e2_2		.120
e1_16 <-> e2_2		-.190
e1_13 <-> e2_2		-.154
e32 <-> e1_16		.162
e16 <-> e2_5		-.101

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.066	.023	2.847	.004	par_56
res4	.079	.027	2.945	.003	par_57
res2	.068	.022	3.128	.002	par_58
res1	.295	.048	6.089	***	par_59
res5	.091	.027	3.359	***	par_60
e20	.339	.036	9.485	***	par_61
e21	.265	.035	7.625	***	par_62
e22	.299	.037	8.151	***	par_63
e17	.566	.050	11.225	***	par_64
e16	.724	.065	11.136	***	par_65
e27	.537	.053	10.162	***	par_66
e8	.266	.041	6.427	***	par_67
e9	.321	.045	7.170	***	par_68
e32	.378	.041	9.321	***	par_69
e34	.229	.045	5.089	***	par_70
e35	.352	.038	9.240	***	par_71
e33	.436	.050	8.802	***	par_72
e1_16	.365	.039	9.443	***	par_73
e1_15	.190	.034	5.666	***	par_74
e1_14	.331	.038	8.785	***	par_75
e1_13	.334	.041	8.253	***	par_76
e1_12	.498	.047	10.701	***	par_77
e2_1	.463	.045	10.185	***	par_78
e2_2	.350	.036	9.713	***	par_79
e2_4	.338	.037	9.239	***	par_80
e2_5	.432	.041	10.467	***	par_81
e2_3	.195	.032	6.163	***	par_82
e2_6	.590	.058	10.213	***	par_83

Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
BReso	.629
BAware	.342
BAttent	.235
BAuthen	.470
BFunc	.610
P2_6	.218
P2_5	.332
P2_4	.502
P2_3	.681
P2_2	.428
P2_1	.346
P1_12	.245
P1_13	.526
P1_14	.619
P1_15	.761
P1_16	.551
item33	.392
item35	.358
item34	.598
item32	.214
item9	.458
item8	.504
item27	.188
item16	.061
item17	.083
item22	.461
item21	.493
item20	.338

Matrices (Group number 1 - Default model)
Residual Covariances (Group number 1 - Default model)

	P 2 6	P 2 5	P 2 4	P 2 3	P 2 2	P 2 1	P 1 2	P 1 3	P 1 4	P 1 5	P 1 6	it e m 3 3	it e m 3 5	it e m 3 4	it e m 3 2	it e m 9	it e m 8	it e m 7	it e m 6	it e m 1 7	it e m 2 2	it e m 2 1	it e m 2 0	
P 2 6	-																							
P 2 5	.00	-																						
P 2 4	.00	.00	-																					
P 2 3	.00	.00	.00	-																				
P 2 2	.00	.00	.00	.00	-																			
P 2 1	.00	.00	.00	.00	.00	-																		
P 1 2	.00	.00	.00	.00	.00	.00	-																	
P 1 3	.00	.00	.00	.00	.00	.00	.00	-																
P 1 4	.00	.00	.00	.00	.00	.00	.00	.00	-															
P 1 5	.00	.00	.00	.00	.00	.00	.00	.00	.00	-														
P 1 6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-													
it e m 3 3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-												
it e m 3 5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-											
it e m 3 4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-										
it e m 3 2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-									
it e m 9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-								
it e m 8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-							

	P 2 - 6	P 2 - 5	P 2 - 4	P 2 - 3	P 2 - 2	P 2 - 1	P 1 - 2	P 1 - 3	P 1 - 4	P 1 - 5	P 1 - 6	it e m 3 3	it e m 3 5	it e m 3 4	it e m 3 2	it e m 9	it e m 8	it e m 2 7	it e m 1 6	it e m 1 7	it e m 2 2	it e m 2 1	it e m 2 0	
it e m 2 7	.04	.01	.06	.09	.08	.05	.06	.04	.04	.05	.01	.02	.01	.04	.09	.01	.02	.04	.06	.00	.00	.00	.00	.00
it e m 1 6	.04	.02	.05	.04	.02	.00	.04	.03	.07	.03	.05	.01	.09	.05	.05	.08	.01	.00	.07	.00	.09	.00	.00	.00
it e m 1 7	.04	.04	.03	.01	.01	.05	.01	.04	.00	.07	.00	.01	.07	.01	.02	.07	.08	.00	.04	.06	.09	.00	.00	.00
it e m 2 2	.00	.01	.05	.04	.01	.04	.04	.03	.02	.07	.06	.07	.00	.01	.05	.01	.03	.00	.09	.05	.00	.04	.00	.02
it e m 2 1	.02	.04	.01	.03	.05	.04	.09	.04	.03	.05	.02	.06	.06	.03	.08	.03	.02	.08	.01	.07	.03	.08	.00	.08
it e m 2 0	.05	.00	.09	.03	.06	.04	.06	.00	.04	.01	.03	.04	.03	.02	.01	.08	.04	.00	.05	.01	.09	.00	.01	.03

Standardized Residual Covariances (Group number 1 - Default model)

	P 2 - 6	P 2 - 5	P 2 - 4	P 2 - 3	P 2 - 2	P 2 - 1	P 1 - 2	P 1 - 3	P 1 - 4	P 1 - 5	P 1 - 6	it e m 3 3	it e m 3 5	it e m 3 4	it e m 3 2	it e m 9	it e m 8	it e m 2 7	it e m 1 6	it e m 1 7	it e m 2 2	it e m 2 1	it e m 2 0	
P 2 - 6	-	.155	.049	.034	.077	.073	.068	.064	.060	.056	.052	.048	.044	.040	.036	.032	.028	.024	.020	.016	.012	.008	.004	.000
P 2 - 5		-	.006	.033	.060	.087	.084	.081	.078	.075	.072	.069	.066	.063	.060	.057	.054	.051	.048	.045	.042	.039	.036	.033
P 2 - 4			-	.042	.073	.104	.100	.096	.092	.088	.084	.080	.076	.072	.068	.064	.060	.056	.052	.048	.044	.040	.036	.032
P 2 - 3				-	.066	.115	.146	.142	.138	.134	.130	.126	.122	.118	.114	.110	.106	.102	.098	.094	.090	.086	.082	.078
P 2 - 2					-	.080	.139	.170	.166	.162	.158	.154	.150	.146	.142	.138	.134	.130	.126	.122	.118	.114	.110	.106
P 2 - 1						-	.094	.153	.184	.180	.176	.172	.168	.164	.160	.156	.152	.148	.144	.140	.136	.132	.128	.124
P 1 - 2							-	.078	.137	.168	.164	.160	.156	.152	.148	.144	.140	.136	.132	.128	.124	.120	.116	.112
P 1 - 3								-	.062	.121	.152	.148	.144	.140	.136	.132	.128	.124	.120	.116	.112	.108	.104	.100
P 1 - 4									-	.046	.105	.136	.132	.128	.124	.120	.116	.112	.108	.104	.100	.096	.092	.088
P 1 - 5										-	.030	.089	.120	.116	.112	.108	.104	.100	.096	.092	.088	.084	.080	.076
P 1 - 6											-	.014	.073	.104	.100	.096	.092	.088	.084	.080	.076	.072	.068	.064

	P 2 6	P 2 5	P 2 4	P 2 3	P 2 2	P 2 1	P 1 2	P 1 1	P 1 4	P 1 5	P 1 6	it e m 3 3	it e m 3 5	it e m 3 4	it e m 3 2	it e m 9	it e m 8	it e m 2 7	it e m 1 6	it e m 1 7	it e m 2 2	it e m 2 1	it e m 2 0		
es	97	00	24	93	91	53	02	30	02	21	20	00	01	22	00	14	17	00	00	01	04	20	80	13	
B A w a r e	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B A t t e n t	00	00	10	00	00	00	00	00	00	00	00	00	00	02	10	00	00	00	00	00	00	00	00	00	00
B A u t h e n	01	00	00	03	00	00	00	00	00	00	00	00	00	00	00	05	09	06	01	01	00	02	02	00	00
B F u n c t	04	04	01	09	00	02	01	01	00	01	00	00	00	02	00	01	02	00	01	00	01	06	00	03	03

Modification Indices (Group number 1 - Default model)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change
e2_4 <-> res1	4.298	.043
e1_12 <-> SMEBE	6.160	.117
e1_12 <-> res4	6.543	.035
e32 <-> SMEBE	5.382	.106

Variances: (Group number 1 - Default model)

	M.I.	Par Change

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
P1_12 <-- SMEBE	6.160	.117
P1_12 <-- BReso	5.616	.212
P1_12 <-- BAttent	10.715	.464
P1_12 <-- BAuthen	5.382	.319
P1_12 <-- BFunc	4.629	.241
P1_12 <-- item33	5.026	.109
P1_12 <-- item35	8.325	.160
P1_12 <-- item34	4.991	.122
P1_12 <-- item32	6.399	.150
P1_12 <-- item8	5.035	.126
P1_12 <-- item16	4.240	.097
P1_16 <-- item21	4.344	.115
item35 <-- item16	4.075	.091
item35 <-- item17	4.298	.105
item34 <-- P1_15	4.097	-.084
item32 <-- SMEBE	5.382	.106
item32 <-- BReso	5.645	.206
item32 <-- BAuthen	6.857	.348
item32 <-- P2_6	5.173	.104
item32 <-- P2_3	4.174	.104
item32 <-- P1_12	4.279	.101
item32 <-- item8	4.284	.113
item32 <-- item16	4.478	.096
item27 <-- P2_4	4.695	.121
item21 <-- P1_13	4.863	-.096
item21 <-- item16	7.077	-.111
item20 <-- item16	4.085	.082

Minimization History (Default model)

Iteration	Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e 19		-.895	9999.000	2355.811	0	9999.000
1	e* 10		-.252	2.115	1275.718	21	.601
2	e 3		-.076	.995	831.003	6	.893
3	e 3		-.083	1.049	532.317	5	.819
4	e* 0	197.735		1.187	329.121	5	.799
5	e 0	184.194		1.293	267.625	1	.735
6	e 0	1982.787		.788	229.026	1	.850
7	e 0	691.537		.394	224.945	3	.000
8	e 0	815.162		.274	221.985	1	1.032
9	e 0	752.450		.103	221.866	1	1.015
10	e 0	768.650		.008	221.865	1	1.004
11	e 0	763.531		.000	221.865	1	1.000

Model Fit Summary
CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	83	221.865	193	.076	1.150
Saturated model	276	.000	0		
Independence model	23	2294.956	253	.000	9.071

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.043	.930	.900	.650
Saturated model	.000	1.000		
Independence model	.173	.386	.330	.354

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.903	.873	.986	.981	.986
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.763	.689	.752
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	28.865	.000	69.879
Saturated model	.000	.000	.000
Independence model	2041.956	1892.415	2198.897

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.895	.116	.000	.282
Saturated model	.000	.000	.000	.000
Independence model	9.254	8.234	7.631	8.867

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.025	.000	.038	1.000
Independence model	.180	.174	.187	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	387.865	405.651	679.814	762.814
Saturated model	552.000	611.143	1522.817	1798.817
Independence model	2340.956	2345.885	2421.858	2444.858

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.564	1.448	1.729	1.636
Saturated model	2.226	2.226	2.226	2.464
Independence model	9.439	8.836	10.072	9.459

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	254	271
Independence model	32	34

Execution time summary

Minimization:	.000
Miscellaneous:	.602
Bootstrap:	.000
Total:	.602

Appendix R

AMOS outputs for the SME brand equity model in case of consumers with high product involvement level

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS second order 3 ba br HighBInv.amw

Analysis Summary

Date and Time

Date: Sunday, October 28, 2018

Time: 11:31:16 AM

Title

Amos second order 3 ba br highbinv: Sunday, October 28, 2018 11:31 AM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 298

Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (Group number 1)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0



	Weights	Covariances	Variances	Means	Intercepts	Total
Unlabeled	23	31	28	0	0	82
Total	56	31	29	0	0	116

Assessment of normality (Group number 1)

Variable	min	max	skew	c.r.	kurtosis	c.r.
P2_6	1.000	5.000	-.545	-3.843	.416	1.467
P2_5	1.000	5.000	-.331	-2.332	-.168	-.591
P2_4	1.000	5.000	-.508	-3.580	.269	.949
P2_3	1.000	5.000	-.181	-1.279	.158	.557
P2_2	1.000	5.000	-.449	-3.161	.611	2.152
P2_1	1.000	5.000	-.477	-3.365	.624	2.197
P1_12	1.000	5.000	-.087	-.611	-.097	-.342
P1_13	1.000	5.000	-.219	-1.544	-.208	-.734
P1_14	1.000	5.000	-.507	-3.572	.248	.874
P1_15	1.000	5.000	-.397	-2.800	-.133	-.467
P1_16	1.000	5.000	-.271	-1.907	-.168	-.592
item33	1.000	5.000	-.639	-4.503	.732	2.580
item35	1.000	5.000	-.167	-1.174	-.049	-.174
item34	1.000	6.000	-.102	-.720	.375	1.320
item32	1.000	5.000	-.191	-1.349	-.104	-.367
item9	1.000	5.000	-.581	-4.097	.631	2.224
item8	1.000	5.000	-.201	-1.415	-.233	-.820
item27	1.000	5.000	-.368	-2.595	-.125	-.439
item16	1.000	5.000	-.226	-1.594	-.170	-.599
item17	2.000	5.000	-.112	-.788	-.416	-1.466
item22	1.000	5.000	-.123	-.867	-.400	-1.410
item21	1.000	5.000	-.481	-3.392	.294	1.037
item20	1.000	5.000	-.227	-1.598	-.044	-.155
Multivariate					131.257	33.408

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 276

Number of distinct parameters to be estimated: 82

Degrees of freedom (276 - 82): 194

Result (Default model)

Minimum was achieved

Chi-square = 216.174

Degrees of freedom = 194

Probability level = .132

Group number 1 (Group number 1 - Default model)

Estimates (Group number 1 - Default model)

Scalar Estimates (Group number 1 - Default model)

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

		Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE		.481	.042	11.343	***	par_9
BAuthen <-- SMEBE		.543	.048	11.244	***	par_10
BFunct <-- SMEBE		.551	.045	12.284	***	par_11
BReso <-- SMEBE		.406	.041	9.850	***	par_21
BAware <-- SMEBE		.559	.049	11.344	***	par_23
item20 <-- BFunct	1.000					
item21 <-- BFunct	1.022	.082	12.488	***	par_1	
item22 <-- BFunct	.995	.083	12.036	***	par_2	
item17 <-- BFunct	.669	.071	9.474	***	par_3	
item16 <-- BFunct	.566	.076	7.452	***	par_4	
item27 <-- BAuthen	1.000					
item8 <-- BAuthen	1.058	.106	9.977	***	par_5	
item32 <-- BAttent	1.000					
item34 <-- BAttent	.788	.099	7.961	***	par_6	
item35 <-- BAttent	.979	.105	9.326	***	par_7	
item33 <-- BAttent	.883	.106	8.337	***	par_8	
item9 <-- BAuthen	1.064	.107	9.916	***	par_12	
P1_16 <-- BAware	1.000					
P1_15 <-- BAware	.933	.057	16.392	***	par_13	
P1_14 <-- BAware	.779	.063	12.297	***	par_14	
P1_13 <-- BAware	.733	.053	13.836	***	par_15	
P1_12 <-- BAware	.632	.056	11.270	***	par_16	
P2_1 <-- BReso	1.000					
P2_2 <-- BReso	1.226	.107	11.493	***	par_17	
P2_3 <-- BReso	1.153	.114	10.092	***	par_18	
P2_4 <-- BReso	1.230	.121	10.132	***	par_19	
P2_5 <-- BReso	1.355	.136	9.931	***	par_20	
P2_6 <-- BReso	1.073	.119	8.988	***	par_22	

Standardized Regression Weights: (Group number 1 - Default model)

		Estimate
BAttent <-- SMEBE		.917
BAuthen <-- SMEBE		.965

		Estimate
BFunct	<-- SMEBE	.879
BReso	<-- SMEBE	.788
BAware	<-- SMEBE	.705
item20	<-- BFunct	.744
item21	<-- BFunct	.774
item22	<-- BFunct	.742
item17	<-- BFunct	.556
item16	<-- BFunct	.462
item27	<-- BAuthen	.650
item8	<-- BAuthen	.699
item32	<-- BAttent	.685
item34	<-- BAttent	.544
item35	<-- BAttent	.642
item33	<-- BAttent	.565
item9	<-- BAuthen	.695
P1_16	<-- BAware	.865
P1_15	<-- BAware	.826
P1_14	<-- BAware	.678
P1_13	<-- BAware	.723
P1_12	<-- BAware	.621
P2_1	<-- BReso	.655
P2_2	<-- BReso	.733
P2_3	<-- BReso	.720
P2_4	<-- BReso	.719
P2_5	<-- BReso	.771
P2_6	<-- BReso	.631

Covariances: (Group number 1 - Default model)

		Estimate	S.E.	C.R.	P	Label
res1	<--> res5	.056	.018	3.114	.002	par_51
e17	<--> e16	.228	.030	7.692	***	par_24
e2_5	<--> e2_6	.095	.031	3.097	.002	par_25
e20	<--> e17	.056	.021	2.614	.009	par_26
e34	<--> e35	.136	.027	5.067	***	par_27
e34	<--> e33	.108	.027	4.061	***	par_28
e21	<--> e2_3	-.063	.019	-3.296	***	par_29
e2_1	<--> e2_5	-.073	.022	-3.359	***	par_30
e2_4	<--> e2_3	.103	.026	3.909	***	par_31
e21	<--> e17	-.049	.019	-2.535	.011	par_32
e1_16	<--> e2_2	-.052	.025	-2.066	.039	par_33
e1_13	<--> e1_12	.062	.022	2.783	.005	par_34
e8	<--> e1_14	-.073	.025	-2.925	.003	par_35
e1_14	<--> e1_13	.071	.023	3.094	.002	par_36
e17	<--> e33	-.050	.021	-2.431	.015	par_37
e1_15	<--> e1_14	.077	.026	2.984	.003	par_38
e1_16	<--> e2_6	-.062	.022	-2.831	.005	par_39
e17	<--> e1_13	.049	.017	2.908	.004	par_40
e27	<--> e32	.052	.025	2.045	.041	par_41
e2_3	<--> e2_6	-.070	.022	-3.147	.002	par_42
e32	<--> e2_5	-.046	.020	-2.266	.023	par_43
e1_15	<--> e2_2	-.012	.023	-.543	.587	par_44
e21	<--> e1_13	-.048	.019	-2.546	.011	par_45
e35	<--> e2_3	.044	.019	2.248	.025	par_46
e20	<--> e2_5	.049	.020	2.400	.016	par_47
e35	<--> e1_13	.041	.019	2.177	.029	par_48
e33	<--> e1_13	-.044	.022	-2.063	.039	par_49
e1_12	<--> e2_5	.041	.022	1.893	.058	par_50
e2_1	<--> e2_2	.054	.027	2.020	.043	par_52
e22	<--> res1	.033	.023	1.428	.153	par_53
e2_2	<--> res1	-.103	.029	-3.546	***	par_54

Correlations: (Group number 1 - Default model)

		Estimate
res1	<--> res5	.317
e17	<--> e16	.536
e2_5	<--> e2_6	.242
e20	<--> e17	.160
e34	<--> e35	.348
e34	<--> e33	.250
e21	<--> e2_3	-.212
e2_1	<--> e2_5	-.215
e2_4	<--> e2_3	.294
e21	<--> e17	-.148
e1_16	<--> e2_2	-.192
e1_13	<--> e1_12	.178
e8	<--> e1_14	-.179
e1_14	<--> e1_13	.191
e17	<--> e33	-.118
e1_15	<--> e1_14	.229

	Estimate
e1_16 <--> e2_6	-.198
e17 <--> e1_13	.142
e27 <--> e32	.142
e2_3 <--> e2_6	-.180
e32 <--> e2_5	-.143
e1_15 <--> e2_2	-.042
e21 <--> e1_13	-.164
e35 <--> e2_3	.125
e20 <--> e2_5	.150
e35 <--> e1_13	.121
e33 <--> e1_13	-.118
e1_12 <--> e2_5	.112
e2_1 <--> e2_2	.157
e22 <--> res1	.104
e2_2 <--> res1	-.314

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.022	.018	1.179	.238	par_55
res4	.044	.020	2.199	.028	par_56
res2	.089	.022	4.040	***	par_57
res1	.316	.044	7.213	***	par_58
res5	.100	.021	4.772	***	par_59
e20	.316	.033	9.643	***	par_60
e21	.275	.030	9.022	***	par_61
e22	.316	.033	9.722	***	par_62
e17	.392	.035	11.041	***	par_63
e16	.462	.040	11.642	***	par_64
e27	.431	.041	10.491	***	par_65
e8	.371	.037	9.901	***	par_66
e9	.383	.038	9.976	***	par_67
e32	.310	.033	9.419	***	par_68
e34	.405	.037	10.992	***	par_69
e35	.376	.037	10.115	***	par_70
e33	.457	.042	10.826	***	par_71
e1_16	.212	.029	7.223	***	par_72
e1_15	.256	.030	8.559	***	par_73
e1_14	.448	.043	10.478	***	par_74
e1_13	.309	.030	10.452	***	par_75
e1_12	.399	.036	11.124	***	par_76
e2_1	.352	.034	10.247	***	par_77
e2_2	.342	.035	9.714	***	par_78
e2_4	.373	.036	10.237	***	par_79
e2_5	.332	.036	9.318	***	par_80
e2_3	.327	.032	10.174	***	par_81
e2_6	.461	.044	10.570	***	par_82

Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
BReso	.622
BAware	.497
BAttent	.841
BAuthen	.932
BFunc	.773
P2_6	.398
P2_5	.594
P2_4	.518
P2_3	.518
P2_2	.538
P2_1	.429
P1_12	.386
P1_13	.522
P1_14	.460
P1_15	.682
P1_16	.748
item33	.319
item35	.412
item34	.296
item32	.470
item9	.483
item8	.488
item27	.423
item16	.214
item17	.310
item22	.551
item21	.598
item20	.554

Matrices (Group number 1 - Default model)

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	P 2 6	P 2 5	P 2 4	P 2 3	P 2 2	P 2 1	P 1 2	P 1 3	P 1 4	P 1 5	P 1 6	ite m 3 3	ite m 3 5	ite m 3 4	ite m 3 2	ite m 9	ite m 8	ite m 2 7	ite m 1 6	ite m 1 7	ite m 2 2	ite m 2 1	ite m 2 0
16	1	2	0	1	7	7	0	0	1	6	0												
ite m 3 3	.7	.9	.5	.8	.7	.7	.5	.1	.0	.8	.1	.8	.0	.4	.3	.3							
ite m 3 5	.3	.5	.3	.1	.2	.1	.8	.6	.3	.2	.1	.7	.0	.4	.0	.0							
ite m 3 4	.4	.0	.3	.4	.4	.2	.2	.4	.7	.9	.5	.4	.6	.9	.5	.7							
ite m 3 2	.7	.9	.0	.7	.2	.0	.2	.6	.5	.5	.5	.6	.0	.2	.1	.0							
ite m 9	.1	.0	.8	.8	.6	.4	.5	.5	.1	.7	.8	.2	.4	.9	.1	.4							
ite m 8	.3	.5	.2	.6	.4	.1	.3	.5	.8	.3	.4	.8	.8	.9	.5	.7							
ite m 2 7	.0	.0	.3	.6	.5	.0	.7	.6	.5	.1	.5	.7	.0	.2	.1	.7							
ite m 1 6	.9	.2	.1	.7	.7	.3	.1	.6	.4	.2	.5	.8	.9	.1	.1	.6							
ite m 1 7	.3	.4	.0	.2	.3	.3	.2	.6	.8	.9	.1	.8	.2	.1	.1	.9							
ite m 2 2	.0	.3	.9	.8	.2	.3	.7	.3	.7	.3	.0	.4	.4	.3	.3	.0							
ite m 2 1	.6	.1	.8	.7	.1	.8	.1	.0	.3	.5	.4	.4	.9	.5	.8	.2							
ite m 2 0	.0	.2	.1	.7	.2	.3	.4	.2	.1	.7	.0	.6	.0	.4	.1	.0							

Factor Score Weights (Group number 1 - Default model)

	P 2 6	P 2 5	P 2 4	P 2 3	P 2 2	P 2 1	P 1 2	P 1 3	P 1 4	P 1 5	P 1 6	ite m 3 3	ite m 3 5	ite m 3 4	ite m 3 2	ite m 9	ite m 8	ite m 2 7	ite m 1 6	ite m 1 7	ite m 2 2	ite m 2 1	ite m 2 0	
S M E B E	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.1	.1	.1	.0	.0	.0	.0	.1	.0
B R e s o B	.3	.4	.1	.5	.9	.2	.0	.2	.3	.8	.0	.9	.0	.3	.3	.7	.6	.7	.2	.0	.7	.9	.6	.9
	.5	.3	.9	.6	.6	.4	.7	.7	.6	.0	.0	.3	.1	.3	.7	.5	.7	.1	.8	.1	.4	.1	.2	.2
	.0	.1	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.6	.2	.6	.0	.3	.8	.0	.1	.0	.2	.7	.0	.0	.7	.9	.4	.5	.8	.2	.2	.2	.2	.0	.2
	.7	.5	.7	.4	.3	.8	.9	.8	.3	.1	.3	.8	.7	.9	.4	.5	.8	.2	.9	.3	.7	.7	.9	.2
	.1	.2	.1	.7	.4	.4	.3	.7	.1	.5	.4	.2	.2	.4	.1	.0	.2	.1	.2	.8	.4	.6	.1	.0
	.8	.8	.6	.4	.0	.3	.4	.7	.1	.4	.6	.0	.4	.1	.1	.2	.9	.1	.9	.0	.1	.5	.3	.3

	P 2 6	P 2 5	P 2 4	P 2 3	P 2 2	P 2 1	P 1 2	P 1 1	P 1 1	P 1 1	P 1 1	it e m 3 3	it e m 3 3	it e m 3 3	it e m 3 3	it e m 3 3	it e m 3 3	it e m 3 3	it e m 3 3	it e m 3 3	it e m 3 3	it e m 3 3	it e m 3 3
A w a r e	0 4	. 0	0 5	0 5	0 8	0 9	0 8	1 5	0 6	2 5	3 8	0 8	0 1	0 7	0 0	0 2	0 4	0 9	0 9	0 1	0 4	0 2	0 6
B A t t e n t	0 0	0 3	0 1	0 0	0 3	0 1	0 0	0 1	0 1	0 1	0 2	0 9	1 1	0 3	1 5	0 6	0 3	0 0	0 0	0 3	0 3	0 5	0 2
B A t t e n t	0 1	0 1	0 0	0 2	0 4	0 1	0 0	0 1	0 2	0 1	0 3	0 4	0 4	0 1	0 5	0 2	0 3	0 9	0 0	0 3	0 4	0 7	0 4
B F u n c t	0 1 9	0 0 1	0 0 7	0 5 8	0 2 2	0 0 2	0 0 5	0 0 4	0 0 1	0 0 3	0 0 1	0 3 4	0 2 1	0 0 9	0 3 4	0 4 5	0 3 7	0 4 4	0 3 3	0 2 5	0 8 3	0 6 3	0 3 0

Modification Indices (Group number 1 - Default model)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change
e2_6 <--> res5	4.131	-.031
e9 <--> res5	4.913	.034
e9 <--> res1	6.979	-.062
e8 <--> e9	5.353	.057
e16 <--> res5	4.607	.028
e21 <--> res5	4.280	-.028

Variances: (Group number 1 - Default model)

	M.I.	Par Change

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
P1_12 <-- P2_4	5.748	.100
P1_12 <-- item27	4.304	.088
P1_14 <-- P2_6	4.637	.091
P1_14 <-- item20	4.265	.090
P1_15 <-- P2_6	5.861	-.088
P1_15 <-- item9	5.237	-.084
P1_15 <-- item27	6.028	-.090
item9 <-- P1_15	4.827	-.095
item9 <-- P1_16	4.173	-.086
item27 <-- P1_12	4.206	.101
item16 <-- P2_1	4.577	.089
item21 <-- P2_2	4.395	-.081

Minimization History (Default model)

Iteration	Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e 22		-1.136	9999.000	3515.321	0	9999.000
1	e 18		-.303	1.948	1924.602	20	.655
2	e 8		-.234	.935	1334.944	5	.757
3	e 4		-.120	1.618	718.531	6	.689
4	e 0	481.390		.890	375.015	4	.936
5	e 0	151.171		.665	310.449	3	.000
6	e 0	156.045		.625	225.617	1	1.103
7	e 0	152.974		.211	216.517	1	1.091
8	e 0	159.120		.038	216.176	1	1.041
9	e 0	159.280		.001	216.174	1	1.004
10	e 0	159.285		.000	216.174	1	1.000

Model Fit Summary

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	82	216.174	194	.132	1.114
Saturated model	276	.000	0		
Independence model	23	3517.348	253	.000	13.903

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.029	.943	.919	.663
Saturated model	.000	1.000		
Independence model	.257	.242	.173	.222

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.939	.920	.993	.991	.993
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.767	.720	.762
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	22.174	.000	62.291
Saturated model	.000	.000	.000
Independence model	3264.348	3076.372	3459.644

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.728	.075	.000	.210
Saturated model	.000	.000	.000	.000
Independence model	11.843	10.991	10.358	11.649

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.020	.000	.033	1.000
Independence model	.208	.202	.215	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	380.174	394.592	683.336	765.336
Saturated model	552.000	600.527	1572.398	1848.398
Independence model	3563.348	3567.392	3648.381	3671.381

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.280	1.205	1.415	1.329
Saturated model	1.859	1.859	1.859	2.022
Independence model	11.998	11.365	12.655	12.011

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	313	334
Independence model	25	27

Execution time summary

Minimization:	.000
Miscellaneous:	.594
Bootstrap:	.000
Total:	.594

Appendix S

AMOS outputs for the SME brand equity model in case of consumers with low product involvement level

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS second order 3 ba br LowBInv.amw

Analysis Summary

Date and Time

Date: Sunday, October 28, 2018

Time: 12:08:54 PM

Title

Amos second order 3 ba br lowbinv: Sunday, October 28, 2018 12:08 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 222

Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (Group number 1)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0



	Weights	Covariances	Variances	Means	Intercepts	Total
Unlabeled	23	37	28	0	0	88
Total	56	37	29	0	0	122

Assessment of normality (Group number 1)

Variable	min	max	skew	c.r.	kurtosis	c.r.
P2_6	1.000	5.000	.007	.043	-.156	-.475
P2_5	1.000	5.000	.051	.309	-.077	-.234
P2_4	1.000	5.000	-.032	-.194	-.325	-.989
P2_3	1.000	5.000	-.214	-1.304	.051	.154
P2_2	1.000	5.000	-.378	-2.301	.167	.507
P2_1	1.000	5.000	-.270	-1.644	.068	.206
P1_12	1.000	5.000	-.095	-.580	.193	.587
P1_13	1.000	5.000	-.104	-.632	.285	.868
P1_14	1.000	5.000	.100	.609	-.092	-.279
P1_15	1.000	5.000	.083	.507	-.048	-.146
P1_16	1.000	5.000	.097	.592	-.502	-1.526
item33	1.000	5.000	-.189	-1.151	-.210	-.640
item35	1.000	5.000	-.159	-.969	-.106	-.322
item34	1.000	5.000	-.439	-2.673	-.271	-.823
item32	1.000	5.000	-.103	-.627	.077	.233
item9	1.000	5.000	.123	.749	-.362	-1.099
item8	1.000	5.000	.001	.008	-.218	-.663
item27	1.000	5.000	-.056	-.340	-.311	-.945
item16	1.000	5.000	-.065	-.395	.068	.208
item17	1.000	5.000	-.287	-1.746	-.059	-.179
item22	1.000	5.000	-.122	-.743	-.428	-1.301
item21	1.000	5.000	.027	.166	-.276	-.839
item20	1.000	5.000	.056	.343	-.647	-1.969
Multivariate					109.702	24.100

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 276

Number of distinct parameters to be estimated: 88

Degrees of freedom (276 - 88): 188

Result (Default model)

Minimum was achieved

Chi-square = 211.952

Degrees of freedom = 188

Probability level = .111

Group number 1 (Group number 1 - Default model)

Estimates (Group number 1 - Default model)

Scalar Estimates (Group number 1 - Default model)

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

		Estimate	S.E.	C.R.	P	Label
BAttent	<-- SMEBE	.365	.047	7.790	***	par_9
BAuthen	<-- SMEBE	.475	.053	8.974	***	par_10
BFunc	<-- SMEBE	.476	.048	9.945	***	par_11
BReso	<-- SMEBE	.394	.049	7.963	***	par_21
BAware	<-- SMEBE	.534	.056	9.508	***	par_23
item20	<-- BFunc	1.000				
item21	<-- BFunc	1.247	.124	10.069	***	par_1
item22	<-- BFunc	1.216	.120	10.109	***	par_2
item17	<-- BFunc	.507	.098	5.157	***	par_3
item16	<-- BFunc	.352	.100	3.533	***	par_4
item27	<-- BAuthen	1.000				
item8	<-- BAuthen	1.141	.136	8.384	***	par_5
item32	<-- BAttent	1.000				
item34	<-- BAttent	1.345	.171	7.877	***	par_6
item35	<-- BAttent	1.008	.137	7.377	***	par_7
item33	<-- BAttent	1.130	.153	7.398	***	par_8
item9	<-- BAuthen	.951	.119	8.021	***	par_12
P1_16	<-- BAware	1.000				
P1_15	<-- BAware	.863	.073	11.753	***	par_13
P1_14	<-- BAware	.859	.071	12.115	***	par_14
P1_13	<-- BAware	.725	.071	10.258	***	par_15
P1_12	<-- BAware	.848	.103	8.225	***	par_16
P2_1	<-- BReso	1.000				
P2_2	<-- BReso	1.186	.116	10.234	***	par_17
P2_3	<-- BReso	1.150	.140	8.211	***	par_18
P2_4	<-- BReso	1.378	.163	8.431	***	par_19
P2_5	<-- BReso	1.390	.183	7.580	***	par_20
P2_6	<-- BReso	.998	.154	6.495	***	par_22

Standardized Regression Weights: (Group number 1 - Default model)

		Estimate
BAttent	<-- SMEBE	.733
BAuthen	<-- SMEBE	.840

		Estimate
BFunc	<-- SMEBE	.834
BReso	<-- SMEBE	.829
BAware	<-- SMEBE	.727
item20	<-- BFunc	.731
item21	<-- BFunc	.787
item22	<-- BFunc	.809
item17	<-- BFunc	.372
item16	<-- BFunc	.254
item27	<-- BAuthen	.675
item8	<-- BAuthen	.788
item32	<-- BAttent	.648
item34	<-- BAttent	.821
item35	<-- BAttent	.639
item33	<-- BAttent	.646
item9	<-- BAuthen	.700
P1_16	<-- BAware	.815
P1_15	<-- BAware	.756
P1_14	<-- BAware	.776
P1_13	<-- BAware	.673
P1_12	<-- BAware	.795
P2_1	<-- BReso	.572
P2_2	<-- BReso	.692
P2_3	<-- BReso	.747
P2_4	<-- BReso	.789
P2_5	<-- BReso	.783
P2_6	<-- BReso	.546

Covariances: (Group number 1 - Default model)

		Estimate	S.E.	C.R.	P	Label
res4 <--> res1		-.035	.018	-2.003	.045	par_46
e17 <--> e16		.327	.042	7.776	***	par_24
e2_1 <--> e2_2		.169	.033	5.119	***	par_25
e1_13 <--> e1_12		.105	.028	3.729	***	par_26
e32 <--> e34		-.124	.030	-4.169	***	par_27
e34 <--> e1_14		-.055	.023	-2.385	.017	par_28
e2_4 <--> e2_6		-.105	.030	-3.540	***	par_29
e1_13 <--> e2_2		-.043	.022	-2.015	.044	par_30
e2_3 <--> e2_6		-.077	.028	-2.783	.005	par_31
e17 <--> e33		.075	.026	2.898	.004	par_32
e16 <--> e2_4		-.117	.024	-4.913	***	par_33
e22 <--> e35		.078	.025	3.167	.002	par_34
e16 <--> e1_16		-.076	.023	-3.229	.001	par_35
e20 <--> e22		-.063	.027	-2.301	.021	par_36
e2_1 <--> e2_5		-.116	.028	-4.096	***	par_37
e21 <--> e16		-.073	.025	-2.983	.003	par_38
e17 <--> e27		.054	.025	2.188	.029	par_39
e33 <--> e2_3		-.071	.025	-2.861	.004	par_40
e22 <--> e27		.077	.028	2.779	.005	par_41
e27 <--> e8		-.086	.033	-2.578	.010	par_42
e32 <--> e2_6		.083	.032	2.562	.010	par_43
e22 <--> e2_4		-.056	.022	-2.610	.009	par_44
e27 <--> e2_1		-.067	.027	-2.436	.015	par_45
e33 <--> e2_5		-.068	.028	-2.457	.014	par_47
e21 <--> e1_14		-.054	.024	-2.274	.023	par_48
e35 <--> e2_3		-.049	.021	-2.332	.020	par_49
e16 <--> e2_5		-.086	.024	-3.624	***	par_50
e16 <--> e2_2		-.067	.021	-3.146	.002	par_51
e17 <--> e35		.066	.023	2.915	.004	par_52
e9 <--> e35		-.062	.024	-2.551	.011	par_53
e8 <--> e2_3		-.045	.021	-2.140	.032	par_54
e1_14 <--> e2_5		-.045	.022	-2.075	.038	par_55
e1_12 <--> res1		-.131	.043	-3.026	.002	par_56
e8 <--> e2_6		.058	.031	1.886	.059	par_57
e35 <--> res1		.030	.024	1.245	.213	par_58
e20 <--> e2_1		-.057	.025	-2.340	.019	par_59
e2_2 <--> e2_5		-.072	.026	-2.810	.005	par_60

Correlations: (Group number 1 - Default model)

		Estimate
res4 <--> res1		-.207
e17 <--> e16		.593
e2_1 <--> e2_2		.421
e1_13 <--> e1_12		.269
e32 <--> e34		-.453
e34 <--> e1_14		-.228
e2_4 <--> e2_6		-.281
e1_13 <--> e2_2		-.126
e2_3 <--> e2_6		-.216
e17 <--> e33		.157

	Estimate
e16 <--> e2_4	-.301
e22 <--> e35	.255
e16 <--> e1_16	-.190
e20 <--> e22	-.234
e2_1 <--> e2_5	-.323
e21 <--> e16	-.171
e17 <--> e27	.120
e33 <--> e2_3	-.220
e22 <--> e27	.247
e27 <--> e8	-.276
e32 <--> e2_6	.195
e22 <--> e2_4	-.219
e27 <--> e2_1	-.158
e33 <--> e2_5	-.194
e21 <--> e1_14	-.187
e35 <--> e2_3	-.167
e16 <--> e2_5	-.215
e16 <--> e2_2	-.150
e17 <--> e35	.152
e9 <--> e35	-.187
e8 <--> e2_3	-.184
e1_14 <--> e2_5	-.167
e1_12 <--> res1	-.388
e8 <--> e2_6	.157
e35 <--> res1	.097
e20 <--> e2_1	-.158
e2_2 <--> e2_5	-.234

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.094	.029	3.248	.001	par_61
res4	.115	.029	3.937	***	par_62
res2	.099	.025	3.964	***	par_63
res1	.254	.046	5.482	***	par_64
res5	.071	.019	3.697	***	par_65
e20	.285	.037	7.667	***	par_66
e21	.312	.041	7.638	***	par_67
e22	.254	.040	6.396	***	par_68
e17	.522	.050	10.485	***	par_69
e16	.584	.054	10.824	***	par_70
e27	.383	.050	7.627	***	par_71
e8	.255	.043	5.870	***	par_72
e9	.301	.035	8.498	***	par_73
e32	.344	.043	8.064	***	par_74
e34	.218	.040	5.381	***	par_75
e35	.366	.039	9.306	***	par_76
e33	.444	.048	9.170	***	par_77
e1_16	.273	.037	7.269	***	par_78
e1_15	.302	.036	8.426	***	par_79
e1_14	.263	.033	8.034	***	par_80
e1_13	.343	.037	9.235	***	par_81
e1_12	.448	.054	8.231	***	par_82
e2_1	.464	.047	9.886	***	par_83
e2_2	.346	.038	9.121	***	par_84
e2_4	.261	.031	8.360	***	par_85
e2_5	.275	.034	8.120	***	par_86
e2_3	.238	.026	9.080	***	par_87
e2_6	.531	.054	9.809	***	par_88

Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
BReso	.687
BAware	.529
BAttent	.537
BAuthen	.705
BFunc	.695
P2_6	.298
P2_5	.614
P2_4	.622
P2_3	.557
P2_2	.479
P2_1	.328
P1_12	.270
P1_13	.453
P1_14	.603
P1_15	.571
P1_16	.664
item33	.417

	Estimate
item35	.408
item34	.674
item32	.419
item9	.491
item8	.621
item27	.456
item16	.065
item17	.138
item22	.655
item21	.619
item20	.534

Factor Score Weights (Group number 1 - Default model)

	P	P	P	P	P	P	P	P	P	P	it	it	it	it	it	it	it	it	it	it
	2	2	2	2	2	2	1	1	1	1	1	it	it	it	it	it	it	it	it	it
	6	5	4	3	2	1	2	3	4	5	6	m	m	m	m	m	m	m	m	m
S	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
M	0	1	1	0	0	0	1	0	1	0	0	0	0	1	0	0	1	0	1	0
E	1	4	1	8	4	5	1	0	1	3	8	7	2	3	7	8	5	9	4	0
B	7	4	8	7	7	6	4	4	9	4	4	9	5	9	7	0	1	8	2	6
E	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
R	8	6	6	1	8	4	0	0	1	2	5	2	2	0	0	0	0	1	2	0
e	0	9	6	8	7	4	0	3	7	1	1	8	5	0	0	4	7	8	5	4
o	0	0	0	0	0	0	0	1	2	1	2	0	0	0	0	0	0	0	0	0
B	0	5	1	0	3	0	3	3	4	9	7	0	1	1	0	0	1	1	9	0
A	0	8	8	1	7	0	0	8	7	3	4	1	4	6	1	9	3	8	5	4
w	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
a	0	0	0	0	0	0	0	1	2	1	2	0	0	0	0	0	0	0	0	0
r	0	5	1	0	3	0	3	3	4	9	7	0	1	1	0	0	1	1	9	0
e	6	8	8	5	7	6	0	8	7	3	4	1	4	6	1	9	3	8	5	4
B	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
A	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0
t	3	4	0	3	0	0	0	0	5	0	0	9	9	9	9	2	1	1	3	0
e	1	2	6	5	6	9	9	0	4	8	3	1	6	6	5	0	8	5	5	6
n	1	2	6	5	6	9	9	0	4	8	3	1	6	6	5	0	8	5	5	6
t	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	1	0	0
h	2	3	0	5	0	4	2	0	2	0	2	2	4	1	0	4	7	9	4	0
e	4	9	3	9	6	2	2	0	4	5	0	4	3	1	9	7	9	8	7	2
n	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
F	0	2	7	0	0	2	1	0	4	0	1	0	5	4	2	1	2	2	2	2
u	1	5	0	1	0	2	9	0	7	6	1	4	9	1	7	3	2	4	8	6
n	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
ct	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Modification Indices (Group number 1 - Default model)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change
e1_12 <-> e2_5	4.244	-.046
e1_13 <-> e2_6	4.141	-.057
e1_13 <-> e2_5	4.134	.044
e35 <-> e1_13	4.984	-.052
e9 <-> e1_13	5.022	-.051
e27 <-> res4	4.171	.038
e20 <-> e1_12	4.111	-.048

Variances: (Group number 1 - Default model)

	M.I.	Par Change

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
P2_5 <-> item17	4.963	-.108
P1_12 <-> item35	5.872	.124
P1_12 <-> item17	6.513	.132
P1_13 <-> item17	4.060	-.101
item32 <-> P1_13	4.560	.114
item32 <-> item17	4.497	.115
item27 <-> item34	6.419	.137
item22 <-> item16	5.841	-.116
item22 <-> item17	4.226	-.100

Minimization History (Default model)

Iteration	Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e	20	-.978	9999.000	2505.304	0	9999.000
1	e*	14	-.303	2.337	1488.065	21	.517
2	e	10	-.182	1.105	1018.566	5	.839
3	e	2	-.111	1.335	550.490	5	.832
4	e	0	118.364	.922	327.701	5	.839
5	e	1	-.033	1.104	315.616	1	.122
6	e	0	261.462	.523	230.034	5	.907
7	e	0	298.362	.450	213.197	1	.991

Iteration		Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
8	e	0	382.763		.079	211.966	1	1.039
9	e	0	374.629		.015	211.952	1	1.020
10	e	0	373.901		.000	211.952	1	1.001

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	88	211.952	188	.111	1.127
Saturated model	276	.000	0		
Independence model	23	2482.634	253	.000	9.813

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.032	.926	.892	.631
Saturated model	.000	1.000		
Independence model	.221	.279	.214	.256

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.915	.885	.990	.986	.989
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.743	.680	.735
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	23.952	.000	63.876
Saturated model	.000	.000	.000
Independence model	2229.634	2073.593	2393.063

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.959	.108	.000	.289
Saturated model	.000	.000	.000	.000
Independence model	11.234	10.089	9.383	10.828

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.024	.000	.039	.999
Independence model	.200	.193	.207	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	387.952	409.394	687.388	775.388
Saturated model	552.000	619.249	1491.139	1767.139
Independence model	2528.634	2534.238	2606.895	2629.895

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.755	1.647	1.936	1.852
Saturated model	2.498	2.498	2.498	2.802
Independence model	11.442	10.736	12.181	11.467

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	231	247
Independence model	26	28

Execution time summary

Minimization:	.008
Miscellaneous:	.699
Bootstrap:	.000
Total:	.707

Appendix T

AMOS outputs for the SME brand equity model in case of consumers with the high brand engagement level

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS second order 3 ba br HighBEng.amw

Analysis Summary

Date and Time

Date: Monday, November 5, 2018

Time: 12:35:01 AM

Title

Amos second order 3 ba br highbeng: Monday, November 5, 2018 12:35 AM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 295

Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (Group number 1)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0



	Weights	Covariances	Variances	Means	Intercepts	Total
Unlabeled	23	25	28	0	0	76
Total	56	25	29	0	0	110

Assessment of normality (Group number 1)

Variable	min	max	skew	c.r.	kurtosis	c.r.
P2_6	1.000	5.000	-.362	-2.537	.547	1.916
P2_5	1.000	5.000	-.143	-1.004	.095	.332
P2_4	1.000	5.000	-.247	-1.735	.123	.431
P2_3	2.000	5.000	.150	1.052	-.371	-1.300
P2_2	2.000	5.000	.158	1.105	-.508	-1.781
P2_1	2.000	5.000	-.246	-1.726	.074	.260
P1_12	2.000	5.000	.243	1.706	-.577	-2.023
P1_13	2.000	5.000	.040	.279	-.340	-1.192
P1_14	1.000	5.000	-.124	-.870	-.010	-.035
P1_15	1.000	5.000	-.410	-2.876	.125	.437
P1_16	1.000	5.000	-.404	-2.832	.301	1.054
item33	1.000	5.000	-.418	-2.931	.673	2.359
item35	1.000	5.000	-.119	-.837	.052	.183
item34	1.000	6.000	-.190	-1.332	.762	2.671
item32	2.000	5.000	-.069	-.482	-.240	-.842
item9	2.000	5.000	-.272	-1.907	-.181	-.634
item8	1.000	5.000	-.252	-1.766	.260	.910
item27	1.000	5.000	-.325	-2.280	.244	.856
item16	3.000	5.000	.216	1.513	-.784	-2.749
item17	2.000	5.000	-.027	-.191	-.277	-.972
item22	1.000	5.000	-.107	-.753	-.130	-.455
item21	2.000	5.000	-.205	-1.437	-.180	-.632
item20	2.000	5.000	.062	.435	-.393	-1.379
Multivariate					79.883	20.230

Observations farthest from the centroid (Mahalanobis distance) (Group number 1)

Observation number	Mahalanobis d-squared	p1	p2
249	65.525	.000	.002
286	65.185	.000	.000
26	63.110	.000	.000
197	59.058	.000	.000
22	56.796	.000	.000
239	55.285	.000	.000
277	52.492	.000	.000
236	51.137	.001	.000
295	49.110	.001	.000
25	48.890	.001	.000
50	47.474	.002	.000
194	46.393	.003	.000
35	45.872	.003	.000
33	45.384	.004	.000
196	44.689	.004	.000
281	44.194	.005	.000
10	43.369	.006	.000
20	42.898	.007	.000
21	41.872	.009	.000
214	41.692	.010	.000
198	40.932	.012	.000
37	40.904	.012	.000
13	40.524	.013	.000
262	40.029	.015	.000
61	39.907	.016	.000
291	39.840	.016	.000
166	39.703	.017	.000
193	39.630	.017	.000
165	39.461	.018	.000
29	38.695	.021	.000
24	38.527	.022	.000
195	38.319	.024	.000
6	37.712	.027	.000
16	37.656	.028	.000
267	37.579	.028	.000
92	37.457	.029	.000
268	37.304	.030	.000
242	37.108	.032	.000
9	36.946	.033	.000
5	36.643	.035	.000
63	36.436	.037	.000
32	36.235	.039	.000
186	35.961	.042	.000
181	35.955	.042	.000
200	35.426	.047	.000
11	35.124	.051	.000
8	34.934	.053	.000

Observation number	Mahalanobis d-squared	p1	p2
54	34.848	.054	.000
23	34.586	.057	.000
47	33.408	.074	.000
183	33.097	.079	.000
15	33.044	.080	.000
275	32.955	.082	.000
169	32.927	.082	.000
245	32.714	.086	.000
201	32.696	.087	.000
174	32.581	.089	.000
40	32.416	.092	.000
288	31.354	.114	.000
203	31.060	.121	.000
173	30.799	.128	.000
287	30.769	.129	.000
271	30.620	.132	.000
272	30.620	.132	.000
280	29.951	.151	.001
178	29.923	.152	.001
17	29.746	.157	.001
250	29.421	.167	.003
180	29.367	.168	.002
7	29.353	.169	.002
36	29.284	.171	.001
185	29.110	.177	.002
48	28.352	.203	.035
90	27.910	.219	.108
164	27.794	.224	.118
167	27.659	.229	.136
273	27.362	.241	.228
28	26.931	.259	.436
107	26.916	.260	.395
3	26.671	.270	.507
1	26.339	.285	.676
260	25.262	.337	.987
175	25.214	.339	.986
41	24.936	.354	.995
247	24.704	.366	.998
168	24.689	.367	.997
179	24.677	.367	.996
66	24.660	.368	.995
292	24.579	.372	.995
263	24.535	.375	.995
31	24.507	.376	.994
85	24.398	.382	.995
279	24.293	.388	.996
59	24.245	.390	.996
19	23.527	.430	1.000
34	23.506	.432	1.000
229	23.445	.435	1.000
261	23.417	.437	1.000
149	23.402	.438	1.000
294	23.367	.439	1.000

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 276

Number of distinct parameters to be estimated: 76

Degrees of freedom (276 - 76): 200

Result (Default model)

Minimum was achieved

Chi-square = 225.211

Degrees of freedom = 200

Probability level = .107

Group number 1 (Group number 1 - Default model)

Estimates (Group number 1 - Default model)

Scalar Estimates (Group number 1 - Default model)

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.373	.040	9.392	***	par_9
BAuthen <-- SMEBE	.477	.043	11.143	***	par_10
BFunct <-- SMEBE	.507	.039	12.830	***	par_11
BReso <-- SMEBE	.294	.037	8.014	***	par_21
BAware <-- SMEBE	.528	.044	12.024	***	par_23
item20 <-- BFunct	1.000				
item21 <-- BFunct	1.018	.082	12.406	***	par_1
item22 <-- BFunct	.975	.086	11.380	***	par_2

			Estimate	S.E.	C.R.	P	Label
item17	<--	BFunc	.545	.072	7.555	***	par_3
item16	<--	BFunc	.493	.076	6.444	***	par_4
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.072	.108	9.955	***	par_5
item32	<--	BAttent	1.000				
item34	<--	BAttent	.861	.120	7.157	***	par_6
item35	<--	BAttent	1.166	.134	8.693	***	par_7
item33	<--	BAttent	.888	.119	7.477	***	par_8
item9	<--	BAuthen	1.073	.106	10.093	***	par_12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.863	.068	12.626	***	par_13
P1_14	<--	BAware	.685	.066	10.334	***	par_14
P1_13	<--	BAware	.620	.059	10.449	***	par_15
P1_12	<--	BAware	.546	.060	9.124	***	par_16
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.157	.134	8.651	***	par_17
P2_3	<--	BReso	1.345	.179	7.523	***	par_18
P2_4	<--	BReso	1.344	.182	7.371	***	par_19
P2_5	<--	BReso	1.657	.214	7.744	***	par_20
P2_6	<--	BReso	1.198	.172	6.958	***	par_22

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
BAttent	<--	SMEBE	.820
BAuthen	<--	SMEBE	.955
BFunc	<--	SMEBE	.919
BReso	<--	SMEBE	.840
BAware	<--	SMEBE	.781
item20	<--	BFunc	.743
item21	<--	BFunc	.767
item22	<--	BFunc	.699
item17	<--	BFunc	.439
item16	<--	BFunc	.408
item27	<--	BAuthen	.644
item8	<--	BAuthen	.704
item32	<--	BAttent	.640
item34	<--	BAttent	.547
item35	<--	BAttent	.680
item33	<--	BAttent	.554
item9	<--	BAuthen	.711
P1_16	<--	BAware	.823
P1_15	<--	BAware	.738
P1_14	<--	BAware	.626
P1_13	<--	BAware	.622
P1_12	<--	BAware	.546
P2_1	<--	BReso	.517
P2_2	<--	BReso	.594
P2_3	<--	BReso	.667
P2_4	<--	BReso	.638
P2_5	<--	BReso	.750
P2_6	<--	BReso	.576



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Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.153	.024	6.352	***	par_24
e2_1	<-->	e2_2	.096	.022	4.422	***	par_25
e2_3	<-->	e2_6	-.090	.021	-4.334	***	par_26
e8	<-->	e2_5	-.070	.020	-3.610	***	par_27
e1_14	<-->	e2_6	.083	.021	4.022	***	par_28
e20	<-->	e17	.057	.019	3.069	.002	par_29
e27	<-->	e1_14	.063	.020	3.136	.002	par_30
e34	<-->	e33	.078	.025	3.173	.002	par_31
e2_4	<-->	e2_6	-.049	.022	-2.242	.025	par_32
e2_1	<-->	e2_5	-.046	.019	-2.396	.017	par_33
e34	<-->	e35	.066	.026	2.564	.010	par_34
e1_14	<-->	e1_13	.069	.020	3.551	***	par_35
e2_4	<-->	e2_3	.054	.022	2.481	.013	par_36
e20	<-->	e1_12	-.046	.018	-2.552	.011	par_37
e21	<-->	e16	-.037	.018	-2.081	.037	par_38
e9	<-->	e2_2	.035	.018	1.973	.049	par_39
e1_15	<-->	e2_4	.059	.019	3.036	.002	par_40
e33	<-->	e2_5	-.082	.021	-3.925	***	par_41
e33	<-->	e2_3	-.057	.020	-2.869	.004	par_42
e32	<-->	e2_6	.056	.021	2.648	.008	par_43
e1_13	<-->	e2_5	-.045	.017	-2.609	.009	par_44
e1_15	<-->	e2_6	.060	.021	2.807	.005	par_45
e1_15	<-->	e1_14	.056	.021	2.634	.008	par_46
e16	<-->	e1_16	-.029	.018	-1.603	.109	par_47
e20	<-->	e1_14	.036	.017	2.151	.031	par_48

Correlations: (Group number 1 - Default model)

		Estimate
e17 <-> e16		.409
e2_1 <-> e2_2		.303
e2_3 <-> e2_6		-.287
e8 <-> e2_5		-.254
e1_14 <-> e2_6		.243
e20 <-> e17		.188
e27 <-> e1_14		.185
e34 <-> e33		.216
e2_4 <-> e2_6		-.146
e2_1 <-> e2_5		-.155
e34 <-> e35		.193
e1_14 <-> e1_13		.229
e2_4 <-> e2_3		.181
e20 <-> e1_12		-.165
e21 <-> e16		-.129
e9 <-> e2_2		.121
e1_15 <-> e2_4		.195
e33 <-> e2_5		-.264
e33 <-> e2_3		-.178
e32 <-> e2_6		.171
e1_13 <-> e2_5		-.167
e1_15 <-> e2_6		.188
e1_15 <-> e1_14		.181
e16 <-> e1_16		-.104
e20 <-> e1_14		.126

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.022	.014	1.514	.130	par_49
res4	.068	.019	3.577	***	par_50
res2	.047	.016	3.012	.003	par_51
res1	.178	.030	5.859	***	par_52
res5	.036	.010	3.623	***	par_53
e20	.246	.025	9.721	***	par_54
e21	.221	.024	9.187	***	par_55
e22	.303	.029	10.314	***	par_56
e17	.378	.032	11.712	***	par_57
e16	.370	.032	11.638	***	par_58
e27	.351	.033	10.628	***	par_59
e8	.292	.030	9.845	***	par_60
e9	.282	.029	9.874	***	par_61
e32	.299	.031	9.674	***	par_62
e34	.359	.035	10.165	***	par_63
e35	.327	.037	8.907	***	par_64
e33	.368	.035	10.487	***	par_65
e1_16	.218	.029	7.511	***	par_66
e1_15	.284	.030	9.425	***	par_67
e1_14	.332	.031	10.543	***	par_68
e1_13	.278	.026	10.714	***	par_69
e1_12	.320	.028	11.225	***	par_70
e2_1	.336	.030	11.094	***	par_71
e2_2	.301	.027	11.122	***	par_72
e2_4	.323	.031	10.344	***	par_73
e2_5	.262	.029	9.174	***	par_74
e2_3	.277	.028	9.966	***	par_75
e2_6	.356	.033	10.819	***	par_76

Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
BReso	.706
BAware	.611
BAttent	.673
BAuthen	.912
BFunct	.844
P2_6	.331
P2_5	.562
P2_4	.407
P2_3	.445
P2_2	.353
P2_1	.268
P1_12	.298
P1_13	.387
P1_14	.392
P1_15	.545
P1_16	.677
item33	.307
item35	.462

	Estimate
item34	.299
item32	.409
item9	.505
item8	.495
item27	.415
item16	.166
item17	.193
item22	.488
item21	.588
item20	.553

Factor Score Weights (Group number 1 - Default model)

	P2_6	P2_5	P2_4	P2_3	P2_2	P2_1	P1_2	P1_1	P1_1	P1_1	P1_1	item33	item33	item33	item33	item9	item8	item27	item27	item27	item27	item27	item27	item27	item27	item27	
SEMEE	0.55	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BR	0.09	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Reso	0.07	0.01	0.04	0.04	0.00	0.03	0.09	0.08	0.02	0.01	0.07	0.04	0.08	0.00	0.01	0.00	0.08	0.06	0.08	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Baware	0.04	0.07	0.03	0.01	0.00	0.02	0.09	0.00	0.04	0.07	0.00	0.01	0.02	0.00	0.01	0.00	0.08	0.09	0.02	0.03	0.04	0.00	0.04	0.01	0.09	0.04	0.08
BAttent	0.01	0.06	0.00	0.02	0.00	0.01	0.00	0.02	0.00	0.01	0.02	0.01	0.02	0.05	0.03	0.04	0.02	0.06	0.05	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
BAuth	0.02	0.08	0.00	0.03	0.00	0.02	0.03	0.09	0.02	0.04	0.01	0.03	0.00	0.06	0.02	0.04	0.00	0.06	0.02	0.02	0.04	0.00	0.00	0.00	0.00	0.00	0.00
BFact	0.02	0.05	0.01	0.02	0.00	0.01	0.03	0.03	0.02	0.01	0.03	0.03	0.02	0.00	0.02	0.05	0.06	0.04	0.07	0.00	0.02	0.09	0.07	0.01	0.01	0.01	0.01

Modification Indices (Group number 1 - Default model)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change
res1 <-> res5	11.391	.029
e2_4 <-> res1	4.216	.038
e2_4 <-> res4	4.776	-.031
e2_3 <-> res1	4.790	.038
e1_12 <-> res5	5.019	.020
e32 <-> res2	6.317	.034
e8 <-> e9	4.148	.038
e27 <-> res2	7.543	.039
e22 <-> res4	5.705	.035

Variances: (Group number 1 - Default model)

	M.I.	Par Change

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
P2_4 <-- item33	4.423	-.095
P1_12 <-- item34	6.453	.120
item8 <-- P2_6	4.026	.093
item8 <-- item16	4.589	-.108

Minimization History (Default model)

Iteration	Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e 17		-.799	9999.000	2815.821	0	9999.000
1	e 7		-.120	2.156	1482.045	21	.644
2	e* 3		-.218	1.662	858.727	5	.668
3	e* 0	174.996		1.382	406.110	5	.740
4	e 0	101.512		.797	295.233	2	.000
5	e 0	140.239		.559	232.170	1	1.101
6	e 0	343.364		.280	225.779	1	1.104
7	e 0	544.019		.135	225.231	1	1.089
8	e 0	593.970		.038	225.211	1	1.034
9	e 0	611.944		.002	225.211	1	1.002
10	e 0	611.308		.000	225.211	1	1.001

Model Fit Summary
CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	76	225.211	200	.107	1.126
Saturated model	276	.000	0		
Independence model	23	2776.105	253	.000	10.973

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.024	.939	.916	.681
Saturated model	.000	1.000		
Independence model	.176	.286	.221	.262

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.919	.897	.990	.987	.990
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.791	.726	.783
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	25.211	.000	66.218
Saturated model	.000	.000	.000
Independence model	2523.105	2357.395	2696.183

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	.766	.086	.000	.225
Saturated model	.000	.000	.000	.000
Independence model	9.443	8.582	8.018	9.171

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.021	.000	.034	1.000
Independence model	.184	.178	.190	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	377.211	390.723	657.422	733.422
Saturated model	552.000	601.067	1569.605	1845.605
Independence model	2822.105	2826.194	2906.906	2929.906

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.283	1.197	1.423	1.329
Saturated model	1.878	1.878	1.878	2.044
Independence model	9.599	9.035	10.188	9.613

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	306	326
Independence model	31	33

Execution time summary

Minimization:	.016
Miscellaneous:	.743
Bootstrap:	.000
Total:	.759

Appendix U

AMOS outputs for the SME brand equity model in case of consumers with the low brand engagement level

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS second order 3 ba br LowBEngtry.amw

Analysis Summary

Date and Time

Date: Sunday, October 28, 2018

Time: 12:05:24 PM

Title

Amos second order 3 ba br lowbengtry: Sunday, October 28, 2018 12:05 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 215

Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (Group number 1)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0



	Weights	Covariances	Variances	Means	Intercepts	Total
Unlabeled	23	32	28	0	0	83
Total	56	32	29	0	0	117

Assessment of normality (Group number 1)

Variable	min	max	skew	c.r.	kurtosis	c.r.
P2_6	1.000	5.000	.174	1.040	.117	.351
P2_5	1.000	5.000	.269	1.611	-.059	-.178
P2_4	1.000	5.000	.212	1.266	-.200	-.598
P2_3	1.000	5.000	.037	.219	.362	1.083
P2_2	1.000	5.000	-.269	-1.611	.413	1.235
P2_1	1.000	5.000	-.065	-.388	.278	.833
P1_12	1.000	5.000	.323	1.935	.474	1.418
P1_13	1.000	5.000	.257	1.540	-.011	-.032
P1_14	1.000	5.000	.292	1.751	-.081	-.242
P1_15	1.000	5.000	.433	2.591	.002	.007
P1_16	1.000	5.000	.541	3.240	-.044	-.132
item33	1.000	5.000	-.021	-.127	-.380	-1.138
item35	1.000	5.000	.071	.426	-.656	-1.962
item34	1.000	5.000	-.232	-1.389	-.483	-1.445
item32	1.000	5.000	-.031	-.184	-.159	-.477
item9	1.000	5.000	.116	.695	.254	.760
item8	1.000	5.000	.265	1.587	-.102	-.305
item27	1.000	5.000	.153	.916	-.316	-.945
item16	1.000	5.000	-.041	-.245	-.672	-2.010
item17	1.000	5.000	.014	.083	-.282	-.843
item22	1.000	5.000	.150	.897	-.377	-1.130
item21	1.000	5.000	.083	.496	-.270	-.809
item20	1.000	5.000	.131	.783	-.409	-1.223
Multivariate				137.516		29.730

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 276

Number of distinct parameters to be estimated: 83

Degrees of freedom (276 - 83): 193

Result (Default model)

Minimum was achieved

Chi-square = 216.419

Degrees of freedom = 193

Probability level = .119

Group number 1 (Group number 1 - Default model)

Estimates (Group number 1 - Default model)

Scalar Estimates (Group number 1 - Default model)

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.348	.049	7.058	***	par_9
BAuthen <-- SMEBE	.464	.059	7.909	***	par_10
BFunct <-- SMEBE	.490	.052	9.412	***	par_11
BReso <-- SMEBE	.368	.051	7.232	***	par_21
BAware <-- SMEBE	.544	.064	8.561	***	par_23
item20 <-- BFunct	1.000				
item21 <-- BFunct	1.046	.109	9.617	***	par_1
item22 <-- BFunct	1.160	.113	10.281	***	par_2
item17 <-- BFunct	.692	.096	7.199	***	par_3
item16 <-- BFunct	.552	.101	5.445	***	par_4
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	1.198	.167	7.156	***	par_5
item32 <-- BAttent	1.000				
item34 <-- BAttent	1.250	.177	7.079	***	par_6
item35 <-- BAttent	1.080	.152	7.084	***	par_7
item33 <-- BAttent	1.100	.173	6.348	***	par_8
item9 <-- BAuthen	.967	.144	6.720	***	par_12
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	1.012	.068	14.835	***	par_13
P1_14 <-- BAware	.866	.068	12.834	***	par_14
P1_13 <-- BAware	.821	.069	11.967	***	par_15
P1_12 <-- BAware	.624	.070	8.913	***	par_16
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	.833	.108	7.693	***	par_17
P2_3 <-- BReso	1.097	.138	7.930	***	par_18
P2_4 <-- BReso	1.333	.165	8.067	***	par_19
P2_5 <-- BReso	1.251	.163	7.698	***	par_20
P2_6 <-- BReso	.680	.127	5.349	***	par_22

Standardized Regression Weights: (Group number 1 - Default model)

	Estimate
BAttent <-- SMEBE	.723
BAuthen <-- SMEBE	.802

		Estimate
BFunc	<-- SMEBE	.753
BReso	<-- SMEBE	.653
BAware	<-- SMEBE	.663
item20	<-- BFunc	.794
item21	<-- BFunc	.741
item22	<-- BFunc	.845
item17	<-- BFunc	.527
item16	<-- BFunc	.392
item27	<-- BAuthen	.654
item8	<-- BAuthen	.771
item32	<-- BAttent	.628
item34	<-- BAttent	.772
item35	<-- BAttent	.674
item33	<-- BAttent	.575
item9	<-- BAuthen	.655
P1_16	<-- BAware	.833
P1_15	<-- BAware	.859
P1_14	<-- BAware	.768
P1_13	<-- BAware	.737
P1_12	<-- BAware	.578
P2_1	<-- BReso	.657
P2_2	<-- BReso	.574
P2_3	<-- BReso	.748
P2_4	<-- BReso	.852
P2_5	<-- BReso	.785
P2_6	<-- BReso	.417

Covariances: (Group number 1 - Default model)

		Estimate	S.E.	C.R.	P	Label
e17	<--> e16	.436	.053	8.283	***	par_24
e2_1	<--> e2_2	.115	.039	2.943	.003	par_25
e2_5	<--> e2_6	.178	.039	4.605	***	par_26
e2_1	<--> e2_5	-.143	.034	-4.177	***	par_27
e1_13	<--> e1_12	.132	.035	3.742	***	par_28
e16	<--> e8	.071	.028	2.518	.012	par_29
e27	<--> e8	-.137	.047	-2.918	.004	par_30
e2_1	<--> e2_4	-.153	.036	-4.228	***	par_31
e32	<--> e34	-.103	.033	-3.133	.002	par_32
e2_2	<--> e2_3	.064	.028	2.283	.022	par_33
e2_2	<--> e2_6	.040	.033	1.234	.217	par_34
e1_12	<--> e2_4	.098	.028	3.518	***	par_35
e20	<--> e22	-.121	.035	-3.475	***	par_36
e20	<--> e2_1	-.045	.028	-1.625	.104	par_37
e1_13	<--> e2_2	-.083	.027	-3.019	.003	par_38
e21	<--> e8	.058	.032	1.835	.066	par_39
e1_16	<--> e2_2	-.075	.031	-2.428	.015	par_40
e21	<--> e1_14	-.078	.028	-2.796	.005	par_41
e16	<--> e2_3	.048	.023	2.137	.033	par_42
e1_15	<--> e2_2	-.074	.028	-2.689	.007	par_43
e1_13	<--> e2_5	.041	.024	1.707	.088	par_44
e27	<--> e1_14	-.083	.032	-2.565	.010	par_45
e34	<--> e1_14	-.071	.026	-2.695	.007	par_46
e8	<--> e1_14	-.067	.030	-2.227	.026	par_47
e1_15	<--> e2_6	-.122	.032	-3.835	***	par_48
e20	<--> e2_4	-.079	.024	-3.290	.001	par_49
e22	<--> e35	.060	.026	2.309	.021	par_50
e2_3	<--> res2	-.050	.021	-2.377	.017	par_51
e33	<--> res1	-.129	.041	-3.176	.001	par_52
e34	<--> res1	-.127	.033	-3.876	***	par_53
e20	<--> e34	-.071	.026	-2.758	.006	par_54
e1_16	<--> e2_1	.061	.031	1.978	.048	par_55

Correlations: (Group number 1 - Default model)

		Estimate
e17	<--> e16	.712
e2_1	<--> e2_2	.264
e2_5	<--> e2_6	.383
e2_1	<--> e2_5	-.397
e1_13	<--> e1_12	.295
e16	<--> e8	.148
e27	<--> e8	-.359
e2_1	<--> e2_4	-.511
e32	<--> e34	-.348
e2_2	<--> e2_3	.174
e2_2	<--> e2_6	.072
e1_12	<--> e2_4	.294
e20	<--> e22	-.508
e20	<--> e2_1	-.140
e1_13	<--> e2_2	-.200

	Estimate
e21 <--> e8	.164
e1_16 <--> e2_2	-.206
e21 <--> e1_14	-.213
e16 <--> e2_3	.104
e1_15 <--> e2_2	-.223
e1_13 <--> e2_5	.120
e27 <--> e1_14	-.208
e34 <--> e1_14	-.241
e8 <--> e1_14	-.198
e1_15 <--> e2_6	-.295
e20 <--> e2_4	-.342
e22 <--> e35	.223
e2_3 <--> res2	-.211
e33 <--> res1	-.278
e34 <--> res1	-.419
e20 <--> e34	-.286
e1_16 <--> e2_1	.172

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.119	.041	2.913	.004	par_56
res4	.111	.032	3.499	***	par_57
res2	.184	.042	4.411	***	par_58
res1	.377	.061	6.195	***	par_59
res5	.182	.045	4.078	***	par_60
e20	.249	.044	5.687	***	par_61
e21	.382	.046	8.303	***	par_62
e22	.228	.048	4.777	***	par_63
e17	.527	.053	9.956	***	par_64
e16	.709	.069	10.290	***	par_65
e27	.449	.064	7.009	***	par_66
e8	.328	.063	5.193	***	par_67
e9	.415	.049	8.448	***	par_68
e32	.354	.046	7.785	***	par_69
e34	.245	.044	5.550	***	par_70
e35	.324	.038	8.585	***	par_71
e33	.568	.061	9.275	***	par_72
e1_16	.297	.039	7.628	***	par_73
e1_15	.245	.036	6.869	***	par_74
e1_14	.351	.040	8.744	***	par_75
e1_13	.382	.043	8.942	***	par_76
e1_12	.523	.053	9.820	***	par_77
e2_1	.419	.056	7.479	***	par_78
e2_2	.450	.047	9.602	***	par_79
e2_4	.214	.037	5.834	***	par_80
e2_5	.311	.040	7.813	***	par_81
e2_3	.302	.034	8.745	***	par_82
e2_6	.699	.068	10.239	***	par_83

Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
BReso	.427
BAware	.440
BAttent	.522
BAuthen	.643
BFunc	.567
P2_6	.174
P2_5	.616
P2_4	.725
P2_3	.559
P2_2	.329
P2_1	.431
P1_12	.334
P1_13	.543
P1_14	.590
P1_15	.738
P1_16	.693
item33	.330
item35	.454
item34	.596
item32	.395
item9	.430
item8	.594
item27	.427
item16	.154
item17	.278
item22	.715
item21	.548

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	83	216.419	193	.119	1.121
Saturated model	276	.000	0		
Independence model	23	2459.333	253	.000	9.721

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.043	.924	.891	.646
Saturated model	.000	1.000		
Independence model	.240	.309	.246	.283

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.912	.885	.990	.986	.989
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.763	.696	.755
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	23.419	.000	63.642
Saturated model	.000	.000	.000
Independence model	2206.333	2051.085	2368.971

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.011	.109	.000	.297
Saturated model	.000	.000	.000	.000
Independence model	11.492	10.310	9.585	11.070

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.024	.000	.039	.999
Independence model	.202	.195	.209	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	382.419	403.387	662.182	745.182
Saturated model	552.000	621.726	1482.296	1758.296
Independence model	2505.333	2511.144	2582.858	2605.858

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.787	1.678	1.975	1.885
Saturated model	2.579	2.579	2.579	2.905
Independence model	11.707	10.982	12.467	11.734

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	224	239
Independence model	26	27

Execution time summary

Minimization:	.000
Miscellaneous:	.579
Bootstrap:	.000
Total:	.579

Appendix V

AMOS outputs for the SMEBE model invariance testing for consumers with different characteristics

1. Hypothesized model (Model 1)

High SME brand equity, low SME brand equity

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\Invariance testing for consumers with LH SMEBE BINV BENG\Invariance of HL SMEBE AMOS
Baseline model with no equality imposed.amw

Analysis Summary

Date and Time

Date: Monday, October 29, 2018

Time: 12:42:50 PM

Title

Invariance of hl smebe amos baseline model with no equality imposed: Monday, October 29, 2018 12:42 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 303

Variable Summary (HSMEBE)

Your model contains the following variables (HSMEBE)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (HSMEBE)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29



Number of endogenous variables: 28

Parameter Summary (HSMEBE)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0
Unlabeled	23	8	28	0	0	59
Total	56	8	29	0	0	93

Assessment of normality (HSMEBE)

Variable	min	max	skew	c.r.	kurtosis	c.r.
P2_6	1.000	5.000	-.413	-2.938	.565	2.007
P2_5	1.000	5.000	-.281	-1.996	.086	.304
P2_4	1.000	5.000	-.501	-3.562	.694	2.466
P2_3	1.000	5.000	-.251	-1.781	.801	2.845
P2_2	1.000	5.000	-.318	-2.260	.597	2.122
P2_1	1.000	5.000	-.568	-4.035	1.050	3.732
P1_12	1.000	5.000	-.062	-.438	-.112	-.398
P1_13	2.000	5.000	-.126	-.896	-.296	-1.051
P1_14	1.000	5.000	-.232	-1.647	.190	.676
P1_15	1.000	5.000	-.518	-3.679	.480	1.704
P1_16	1.000	5.000	-.318	-2.260	.116	.413
item33	1.000	5.000	-.563	-4.000	1.454	5.166
item35	2.000	5.000	.085	.607	-.364	-1.295
item34	1.000	6.000	-.083	-.591	.616	2.189
item32	2.000	5.000	-.079	-.558	-.158	-.562
item9	1.000	5.000	-.168	-1.196	.214	.762
item8	1.000	5.000	-.332	-2.358	.590	2.095
item27	1.000	5.000	-.213	-1.512	.286	1.018
item16	3.000	5.000	.058	.412	-.677	-2.406
item17	2.000	5.000	.051	.363	-.448	-1.591
item22	2.000	5.000	.071	.505	-.508	-1.805
item21	1.000	5.000	-.621	-4.412	1.805	6.415
item20	2.000	5.000	.080	.569	-.478	-1.697
Multivariate					134.753	34.584

Observations farthest from the centroid (Mahalanobis distance) (HSMEBE)

Observation number	Mahalanobis d-squared	p1	p2
205	106.595	.000	.000
23	105.485	.000	.000
294	73.130	.000	.000
27	65.827	.000	.000
293	59.748	.000	.000
257	59.506	.000	.000
25	56.471	.000	.000
53	56.337	.000	.000
30	56.224	.000	.000
202	55.619	.000	.000
264	54.392	.000	.000
256	53.795	.000	.000
244	53.485	.000	.000
283	53.344	.000	.000
241	49.221	.001	.000
22	49.127	.001	.000
11	47.620	.002	.000
303	47.071	.002	.000
287	46.655	.002	.000
218	45.643	.003	.000
255	45.193	.004	.000
133	44.878	.004	.000
19	44.074	.005	.000
40	43.268	.006	.000
164	41.550	.010	.000
20	41.426	.011	.000
198	41.118	.011	.000
196	40.714	.013	.000
253	40.699	.013	.000
268	39.037	.020	.000
21	38.872	.020	.000
8	38.787	.021	.000
197	38.110	.025	.000
247	37.564	.028	.000
5	37.013	.032	.000
32	36.449	.037	.000
12	35.865	.043	.000
7	35.247	.049	.000
199	34.770	.055	.000
183	34.541	.058	.000
186	34.526	.058	.000
44	34.487	.058	.000
165	34.405	.060	.000

Observation number	Mahalanobis d-squared	p1	p2
3	34.197	.062	.000
208	33.807	.068	.000
56	33.539	.072	.000
26	33.314	.076	.000
54	33.313	.076	.000
15	32.704	.086	.000
201	32.660	.087	.000
275	32.628	.088	.000
4	32.428	.092	.000
180	32.388	.092	.000
188	32.253	.095	.000
250	31.564	.110	.000
200	31.558	.110	.000
203	31.195	.118	.000
296	31.090	.121	.000
173	30.921	.125	.000
206	30.548	.134	.001
168	29.508	.164	.050
24	29.212	.173	.089
172	28.878	.184	.163
295	28.693	.191	.200
286	28.415	.200	.292
177	28.143	.210	.398
46	28.068	.213	.390
179	28.028	.215	.362
163	27.788	.224	.459
281	27.404	.239	.652
278	27.169	.249	.740
279	27.169	.249	.695
2	27.119	.251	.677
174	26.877	.261	.769
51	26.641	.272	.843
13	26.341	.285	.918
272	26.287	.287	.912
14	26.057	.298	.948
39	26.019	.300	.941
94	25.795	.311	.967
236	25.751	.313	.963
95	25.541	.323	.979
6	25.393	.330	.985
266	25.373	.331	.982
280	25.326	.334	.980
131	24.997	.350	.994
190	24.680	.367	.999
265	24.325	.386	1.000
224	24.322	.386	1.000
31	24.306	.387	1.000
29	24.060	.400	1.000
230	23.912	.409	1.000
86	23.791	.415	1.000
254	23.766	.417	1.000
121	23.529	.430	1.000
262	23.437	.435	1.000
35	23.391	.438	1.000
147	23.312	.443	1.000
167	23.304	.443	1.000
229	23.091	.455	1.000

Group number 2 (Group number 2)

Notes for Group (Group number 2)

The model is recursive.

Sample size = 249

Variable Summary (LSMEBE)

Your model contains the following variables (LSMEBE)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

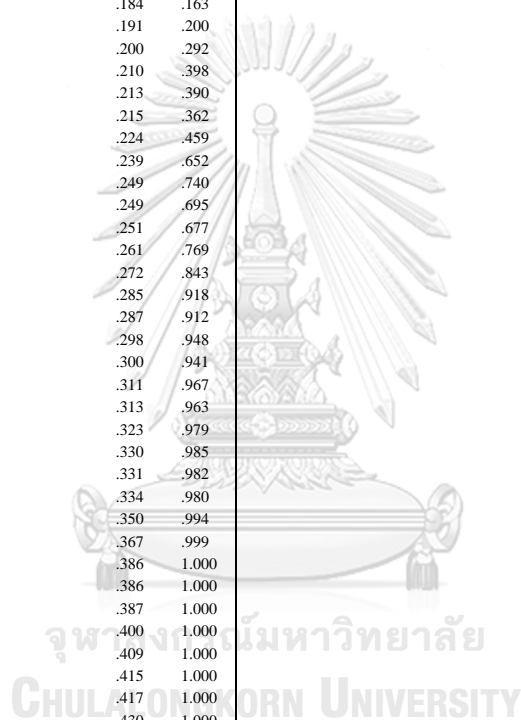
P1_15

P1_14

P1_13

P1_12

P2_1



P2_2
P2_3
P2_4
P2_5
P2_6
Unobserved, endogenous variables
BFunct
BAuthen
BAttent
BAware
BReso
Unobserved, exogenous variables
e20
e21
e22
e17
e16
e27
e8
e9
e32
e34
e35
e33
SMEBE
res3
res4
res2
e1_16
e1_15
e1_14
e1_13
e1_12
res1
e2_1
e2_2
e2_4
e2_5
e2_3
res5
e2_6

Variable counts (LSMEBE)

Number of variables in your model: 57
Number of observed variables: 23
Number of unobserved variables: 34
Number of exogenous variables: 29
Number of endogenous variables: 28

Parameter Summary (LSMEBE)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0
Unlabeled	23	8	28	0	0	59
Total	56	8	29	0	0	93

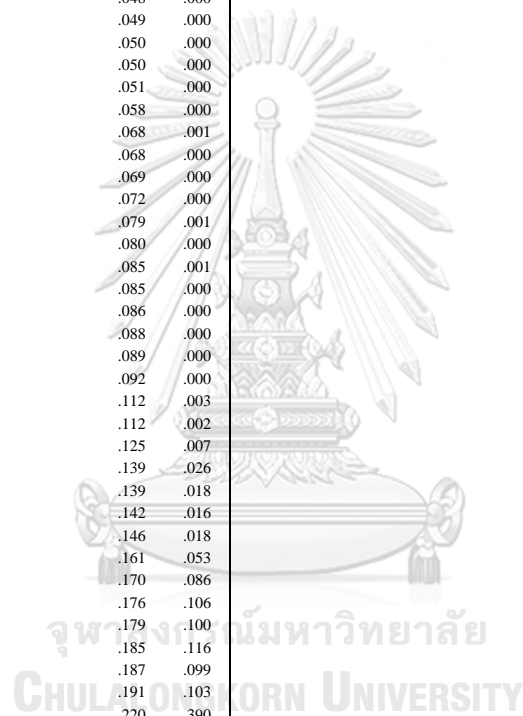
Assessment of normality (LSMEBE)

Variable	min	max	skew	c.r.	kurtosis	c.r.
P2_6	1.000	5.000	.016	.106	.000	.001
P2_5	1.000	5.000	-.032	-.207	-.138	-.445
P2_4	1.000	5.000	.139	.894	-.344	-1.109
P2_3	1.000	5.000	.155	.999	.218	.703
P2_2	1.000	5.000	-.478	-3.077	.531	1.710
P2_1	1.000	5.000	-.019	-.119	.361	1.163
P1_12	1.000	5.000	.140	.903	.711	2.291
P1_13	1.000	5.000	.082	.527	.213	.686
P1_14	1.000	5.000	.296	1.904	-.062	-.199
P1_15	1.000	5.000	.456	2.939	.316	1.019
P1_16	1.000	5.000	.395	2.542	-.018	-.058
item33	1.000	5.000	-.063	-.406	-.159	-.512
item35	1.000	5.000	-.074	-.476	-.088	-.283
item34	1.000	4.000	-.285	-1.838	-.274	-.882
item32	1.000	5.000	-.111	-.713	.187	.604
item9	1.000	5.000	.015	.096	.016	.052
item8	1.000	5.000	.118	.761	.427	1.376
item27	1.000	5.000	.210	1.353	.080	.258
item16	1.000	5.000	.072	.464	-.103	-.331
item17	1.000	5.000	.073	.468	.037	.118
item22	1.000	5.000	.028	.179	-.153	-.492
item21	1.000	5.000	.006	.036	.311	1.002
item20	1.000	5.000	.050	.321	-.029	-.093
Multivariate					115.862	26.956

Observations farthest from the centroid (Mahalanobis distance) (LSMEBE)

Observation number	Mahalanobis d-squared	p1	p2
90	96.205	.000	.000
166	80.943	.000	.000
208	80.943	.000	.000
226	78.477	.000	.000
178	69.226	.000	.000

Observation number	Mahalanobis d-squared	p1	p2
248	56.563	.000	.000
92	54.278	.000	.000
241	52.284	.000	.000
49	52.182	.000	.000
48	49.252	.001	.000
66	47.543	.002	.000
176	45.802	.003	.000
76	41.509	.010	.000
12	40.325	.014	.000
23	39.554	.017	.000
79	39.447	.018	.000
93	37.995	.026	.000
81	37.878	.026	.000
245	37.859	.026	.000
133	37.317	.030	.000
169	37.301	.030	.000
209	36.568	.036	.000
89	36.231	.039	.000
20	35.832	.043	.000
13	35.393	.048	.000
83	35.300	.049	.000
91	35.180	.050	.000
106	35.165	.050	.000
32	35.114	.051	.000
25	34.492	.058	.000
69	33.836	.068	.001
17	33.814	.068	.000
63	33.714	.069	.000
73	33.561	.072	.000
107	33.133	.079	.001
87	33.061	.080	.000
184	32.805	.085	.001
74	32.786	.085	.000
21	32.746	.086	.000
234	32.599	.088	.000
97	32.556	.089	.000
170	32.416	.092	.000
82	31.453	.112	.003
59	31.450	.112	.002
183	30.920	.125	.007
61	30.374	.139	.026
43	30.361	.139	.018
190	30.270	.142	.016
53	30.104	.146	.018
149	29.621	.161	.053
71	29.318	.170	.086
179	29.116	.176	.106
105	29.025	.179	.100
96	28.852	.185	.116
249	28.808	.187	.099
72	28.678	.191	.103
77	27.892	.220	.390
28	27.870	.221	.345
242	27.358	.241	.584
111	27.164	.249	.640
11	26.988	.256	.684
7	26.787	.265	.740
99	26.742	.267	.715
14	26.700	.269	.687
45	26.438	.281	.775
15	26.433	.281	.732
102	26.367	.284	.719
84	26.260	.289	.729
36	26.228	.290	.698
16	26.013	.300	.765
75	26.004	.301	.725
171	25.810	.310	.780
189	25.569	.322	.848
236	25.490	.326	.847
110	25.025	.349	.952
109	25.011	.350	.939
216	25.004	.350	.923
224	24.931	.354	.921
232	24.900	.355	.908
201	24.896	.356	.886
168	24.777	.362	.898
172	24.725	.365	.890



Observation number	Mahalanobis d-squared	p1	p2
221	24.648	.369	.890
191	24.640	.369	.865
46	24.399	.382	.918
64	24.159	.395	.953
56	24.103	.398	.950
126	23.548	.429	.994
150	23.548	.429	.991
230	23.437	.436	.993
124	23.425	.436	.990
165	23.419	.437	.986
219	23.239	.447	.992
6	23.236	.447	.989
244	23.204	.449	.987
29	23.188	.450	.983
151	23.041	.458	.988
238	23.035	.459	.984
164	22.837	.470	.991
70	22.823	.471	.988

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 118

Degrees of freedom (552 - 118): 434

Result (Default model)

Minimum was achieved

Chi-square = 805.211

Degrees of freedom = 434

Probability level = .000

HSMEBE (HSMEBE - Default model)

Estimates (HSMEBE - Default model)

Scalar Estimates (HSMEBE - Default model)

Maximum Likelihood Estimates

Regression Weights: (HSMEBE - Default model)

		Estimate	S.E.	C.R.	P	Label
BAttent	<-- SMEBE	.186	.034	5.533	***	par_9
BAuthen	<-- SMEBE	.336	.042	7.975	***	par_10
BFunc	<-- SMEBE	.295	.038	7.688	***	par_11
BReso	<-- SMEBE	.317	.038	8.246	***	par_21
BAware	<-- SMEBE	.518	.047	11.037	***	par_23
item20	<-- BFunc	1.000				
item21	<-- BFunc	.951	.139	6.824	***	par_1
item22	<-- BFunc	1.001	.141	7.072	***	par_2
item17	<-- BFunc	.590	.112	5.255	***	par_3
item16	<-- BFunc	.543	.117	4.634	***	par_4
item27	<-- BAuthen	1.000				
item8	<-- BAuthen	1.003	.162	6.187	***	par_5
item32	<-- BAttent	1.000				
item34	<-- BAttent	1.263	.219	5.779	***	par_6
item35	<-- BAttent	1.310	.226	5.801	***	par_7
item33	<-- BAttent	.954	.195	4.900	***	par_8
item9	<-- BAuthen	1.146	.167	6.850	***	par_12
P1_16	<-- BAware	1.000				
P1_15	<-- BAware	.899	.063	14.365	***	par_13
P1_14	<-- BAware	.761	.060	12.659	***	par_14
P1_13	<-- BAware	.772	.058	13.341	***	par_15
P1_12	<-- BAware	.671	.060	11.182	***	par_16
P2_1	<-- BReso	1.000				
P2_2	<-- BReso	1.162	.123	9.442	***	par_17
P2_3	<-- BReso	1.528	.174	8.783	***	par_18
P2_4	<-- BReso	1.475	.172	8.562	***	par_19
P2_5	<-- BReso	1.602	.190	8.445	***	par_20
P2_6	<-- BReso	1.089	.151	7.193	***	par_22

Standardized Regression Weights: (HSMEBE - Default model)

		Estimate
BAttent	<-- SMEBE	.582
BAuthen	<-- SMEBE	.912
BFunc	<-- SMEBE	.719
BReso	<-- SMEBE	.811
BAware	<-- SMEBE	.738
item20	<-- BFunc	.613
item21	<-- BFunc	.567
item22	<-- BFunc	.606
item17	<-- BFunc	.379
item16	<-- BFunc	.341
item27	<-- BAuthen	.529
item8	<-- BAuthen	.508
item32	<-- BAttent	.487

		Estimate
item34	<--- BAttent	.603
item35	<--- BAttent	.612
item33	<--- BAttent	.430
item9	<--- BAuthen	.605
P1_16	<--- BAware	.828
P1_15	<--- BAware	.772
P1_14	<--- BAware	.695
P1_13	<--- BAware	.727
P1_12	<--- BAware	.628
P2_1	<--- BReso	.542
P2_2	<--- BReso	.601
P2_3	<--- BReso	.772
P2_4	<--- BReso	.709
P2_5	<--- BReso	.758
P2_6	<--- BReso	.555

Covariances: (HSMEBE - Default model)

		Estimate	S.E.	C.R.	P	Label
e17	<--> e16	.164	.024	6.689	***	par_24
e2_1	<--> e2_2	.118	.025	4.755	***	par_25
e2_3	<--> e2_6	-.123	.022	-5.472	***	par_26
e1_14	<--> e2_6	.045	.022	2.026	.043	par_27
e20	<--> e17	.034	.020	1.756	.079	par_28
e2_1	<--> e2_5	-.046	.021	-2.227	.026	par_29
e20	<--> e2_1	.022	.019	1.146	.252	par_30
e1_13	<--> e2_5	-.014	.019	-.745	.456	par_31

Correlations: (HSMEBE - Default model)

		Estimate
e17	<--> e16	.449
e2_1	<--> e2_2	.323
e2_3	<--> e2_6	-.392
e1_14	<--> e2_6	.128
e20	<--> e17	.109
e2_1	<--> e2_5	-.140
e20	<--> e2_1	.069
e1_13	<--> e2_5	-.051

Variances: (HSMEBE - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.023	.015	1.473	.141	par_63
res4	.068	.020	3.379	***	par_64
res2	.081	.022	3.748	***	par_65
res1	.224	.037	6.132	***	par_66
res5	.052	.014	3.765	***	par_67
e20	.281	.031	9.152	***	par_68
e21	.322	.033	9.862	***	par_69
e22	.292	.031	9.302	***	par_70
e17	.351	.031	11.343	***	par_71
e16	.379	.033	11.621	***	par_72
e27	.348	.033	10.477	***	par_73
e8	.392	.037	10.690	***	par_74
e9	.307	.033	9.417	***	par_75
e32	.330	.032	10.391	***	par_76
e34	.286	.033	8.741	***	par_77
e35	.294	.034	8.582	***	par_78
e33	.410	.038	10.910	***	par_79
e1_16	.225	.027	8.365	***	par_80
e1_15	.269	.028	9.629	***	par_81
e1_14	.305	.029	10.629	***	par_82
e1_13	.261	.025	10.275	***	par_83
e1_12	.340	.030	11.136	***	par_84
e2_1	.369	.033	11.300	***	par_85
e2_2	.365	.032	11.247	***	par_86
e2_4	.329	.031	10.486	***	par_87
e2_5	.290	.030	9.672	***	par_88
e2_3	.242	.027	8.935	***	par_89
e2_6	.407	.037	11.088	***	par_90

Squared Multiple Correlations: (HSMEBE - Default model)

	Estimate
BReso	.658
BAware	.545
BAttent	.339
BAuthen	.832
BFunc	.517
P2_6	.308
P2_5	.575
P2_4	.503
P2_3	.596

	Estimate
P2_2	.361
P2_1	.293
P1_12	.395
P1_13	.529
P1_14	.483
P1_15	.596
P1_16	.686
item33	.185
item35	.374
item34	.364
item32	.237
item9	.366
item8	.258
item27	.280
item16	.116
item17	.144
item22	.367
item21	.321
item20	.375

LSMEBE (LSMEBE - Default model)

Estimates (LSMEBE - Default model)

Scalar Estimates (LSMEBE - Default model)

Maximum Likelihood Estimates

Regression Weights: (LSMEBE - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.122	.031	3.952	***	par_40
BAuthen <-- SMEBE	.248	.048	5.225	***	par_41
BFuncnt <-- SMEBE	.302	.044	6.888	***	par_42
BReso <-- SMEBE	.381	.050	7.688	***	par_52
BAware <-- SMEBE	.455	.056	8.186	***	par_54
item20 <-- BFuncnt	1.000				
item21 <-- BFuncnt	1.254	.172	7.291	***	par_32
item22 <-- BFuncnt	1.272	.175	7.268	***	par_33
item17 <-- BFuncnt	.559	.142	3.941	***	par_34
item16 <-- BFuncnt	.496	.162	3.060	.002	par_35
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	1.449	.266	5.442	***	par_36
item32 <-- BAttent	1.000				
item34 <-- BAttent	2.289	.493	4.644	***	par_37
item35 <-- BAttent	1.935	.426	4.547	***	par_38
item33 <-- BAttent	2.212	.486	4.551	***	par_39
item9 <-- BAuthen	1.445	.267	5.412	***	par_43
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	1.049	.081	12.929	***	par_44
P1_14 <-- BAware	1.061	.085	12.479	***	par_45
P1_13 <-- BAware	.884	.079	11.152	***	par_46
P1_12 <-- BAware	.666	.077	8.665	***	par_47
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	.972	.108	9.043	***	par_48
P2_3 <-- BReso	1.241	.145	8.551	***	par_49
P2_4 <-- BReso	1.368	.156	8.762	***	par_50
P2_5 <-- BReso	1.193	.159	7.497	***	par_51
P2_6 <-- BReso	.904	.141	6.400	***	par_53

Standardized Regression Weights: (LSMEBE - Default model)

	Estimate
BAttent <-- SMEBE	.501
BAuthen <-- SMEBE	.694
BFuncnt <-- SMEBE	.736
BReso <-- SMEBE	.789
BAware <-- SMEBE	.649
item20 <-- BFuncnt	.580
item21 <-- BFuncnt	.706
item22 <-- BFuncnt	.700
item17 <-- BFuncnt	.289
item16 <-- BFuncnt	.230
item27 <-- BAuthen	.442
item8 <-- BAuthen	.707
item32 <-- BAttent	.354
item34 <-- BAttent	.735
item35 <-- BAttent	.639
item33 <-- BAttent	.641
item9 <-- BAuthen	.673
P1_16 <-- BAware	.768
P1_15 <-- BAware	.824
P1_14 <-- BAware	.791
P1_13 <-- BAware	.713
P1_12 <-- BAware	.567
P2_1 <-- BReso	.582

	Estimate
P2_2 <-- BReso	.602
P2_3 <-- BReso	.764
P2_4 <-- BReso	.787
P2_5 <-- BReso	.718
P2_6 <-- BReso	.502

Covariances: (LSMEBE - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.457	.051	8.917	***	par_55
e2_1 <--> e2_2	.132	.032	4.123	***	par_56
e2_3 <--> e2_6	-.077	.028	-2.746	.006	par_57
e1_14 <--> e2_6	.087	.032	2.699	.007	par_58
e20 <--> e17	.057	.022	2.598	.009	par_59
e2_1 <--> e2_5	-.106	.026	-4.113	***	par_60
e20 <--> e2_1	-.080	.025	-3.213	.001	par_61
e1_13 <--> e2_5	.054	.025	2.153	.031	par_62

Correlations: (LSMEBE - Default model)

	Estimate
e17 <--> e16	.699
e2_1 <--> e2_2	.314
e2_3 <--> e2_6	-.204
e1_14 <--> e2_6	.201
e20 <--> e17	.131
e2_1 <--> e2_5	-.280
e20 <--> e2_1	-.207
e1_13 <--> e2_5	.158

Variances: (LSMEBE - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.066	.024	2.771	.006	par_91
res4	.045	.018	2.437	.015	par_92
res2	.077	.022	3.443	***	par_93
res1	.284	.050	5.722	***	par_94
res5	.088	.025	3.500	***	par_95
e20	.331	.036	9.285	***	par_96
e21	.265	.036	7.452	***	par_97
e22	.284	.037	7.589	***	par_98
e17	.577	.053	10.972	***	par_99
e16	.739	.068	10.941	***	par_100
e27	.527	.052	10.071	***	par_101
e8	.269	.041	6.497	***	par_102
e9	.324	.045	7.244	***	par_103
e32	.418	.039	10.587	***	par_104
e34	.267	.042	6.404	***	par_105
e35	.324	.039	8.324	***	par_106
e33	.418	.051	8.284	***	par_107
e1_16	.342	.039	8.843	***	par_108
e1_15	.254	.033	7.733	***	par_109
e1_14	.329	.039	8.441	***	par_110
e1_13	.370	.039	9.499	***	par_111
e1_12	.459	.044	10.397	***	par_112
e2_1	.456	.046	10.002	***	par_113
e2_2	.387	.038	10.070	***	par_114
e2_4	.268	.032	8.352	***	par_115
e2_5	.311	.034	9.112	***	par_116
e2_3	.255	.030	8.470	***	par_117
e2_6	.565	.054	10.392	***	par_118

Model Fit Summary

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	118	805.211	434	.000	1.855
Saturated model	552	.000	0		
Independence model	46	4645.734	506	.000	9.181

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.039	.892	.862	.701
Saturated model	.000	1.000		
Independence model	.159	.389	.333	.356

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.827	.798	.912	.895	.910
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.858	.709	.781
Saturated model	.000	.000	.000

Model	PRATIO	PNFI	PCFI
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	371.211	295.300	454.937
Saturated model	.000	.000	.000
Independence model	4139.734	3925.272	4361.508

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.464	.675	.537	.827
Saturated model	.000	.000	.000	.000
Independence model	8.447	7.527	7.137	7.930

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.039	.035	.044	1.000
Independence model	.122	.119	.125	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1041.211	1064.051		
Saturated model	1104.000	1210.844		
Independence model	4737.734	4746.638		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.893	1.755	2.045	1.935
Saturated model	2.007	2.007	2.007	2.202
Independence model	8.614	8.224	9.017	8.630

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	332	347
Independence model	68	71

Execution time summary

Minimization:	.019
Miscellaneous:	1.401
Bootstrap:	.000
Total:	1.420



2. Factor loadings, variances, and covariances constrained equal

High SME brand equity, low SME brand equity

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\Invariance testing for consumers with LH SMEBE BINV BENG\Invariance of HL SMEBE AMOS
Baseline model with equality imposed.amw

Analysis Summary

Date and Time

Date: Monday, October 29, 2018

Time: 12:41:47 PM

Title

Invariance of hl smebe amos baseline model with equality imposed: Monday, October 29, 2018 12:41 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 303

Variable Summary (HighSMEBE)

Your model contains the following variables (HighSMEBE)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (HighSMEBE)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (HighSMEBE)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	8	0	0	0	29
Unlabeled	2	0	28	0	0	30
Total	56	8	29	0	0	93



Group number 2 (Group number 2)
 Notes for Group (Group number 2)
 The model is recursive.
 Sample size = 249
 Variable Summary (LowSMEBE)
 Your model contains the following variables (LowSMEBE)

Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunc
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (LowSMEBE)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (LowSMEBE)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	8	0	0	0	29
Unlabeled	2	0	28	0	0	30
Total	56	8	29	0	0	93

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 89

Degrees of freedom (552 - 89): 463

Result (Default model)

Minimum was achieved

Chi-square = 888.675

Degrees of freedom = 463

Probability level = .000

HighSMEBE (HighSMEBE - Default model)



Estimates (HighSMEBE - Default model)
 Scalar Estimates (HighSMEBE - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (HighSMEBE - Default model)

		Estimate	S.E.	C.R.	P	Label
BAttent	<-- SMEBE	.150	.023	6.634	***	pbcu
BAuthen	<-- SMEBE	.303	.032	9.506	***	pbau
BFunct	<-- SMEBE	.301	.029	10.350	***	pbpr
BReso	<-- SMEBE	.349	.035	10.043	***	par_31
BAware	<-- SMEBE	.496	.036	13.838	***	pbaw
item20	<-- BFunct	1.000				
item21	<-- BFunct	1.080	.109	9.930	***	p10
item22	<-- BFunct	1.102	.110	10.013	***	p9
item17	<-- BFunct	.583	.089	6.562	***	p8
item16	<-- BFunct	.531	.097	5.457	***	p7
item27	<-- BAuthen	1.000				
item8	<-- BAuthen	1.177	.137	8.597	***	p13
item32	<-- BAttent	1.000				
item34	<-- BAttent	1.700	.227	7.488	***	p17
item35	<-- BAttent	1.571	.213	7.377	***	p16
item33	<-- BAttent	1.474	.210	7.015	***	p15
item9	<-- BAuthen	1.249	.141	8.827	***	p12
P1_16	<-- BAware	1.000				
P1_15	<-- BAware	.959	.049	19.387	***	p5
P1_14	<-- BAware	.882	.049	17.862	***	p4
P1_13	<-- BAware	.816	.047	17.360	***	p3
P1_12	<-- BAware	.669	.047	14.125	***	p2
P2_1	<-- BReso	1.000				
P2_2	<-- BReso	1.086	.084	12.909	***	p22
P2_3	<-- BReso	1.406	.117	12.022	***	p21
P2_4	<-- BReso	1.363	.131	10.387	***	par_30
P2_5	<-- BReso	1.432	.129	11.093	***	p20
P2_6	<-- BReso	1.009	.106	9.549	***	p19

Standardized Regression Weights: (HighSMEBE - Default model)

		Estimate
BAttent	<-- SMEBE	.585
BAuthen	<-- SMEBE	.896
BFunct	<-- SMEBE	.761
BReso	<-- SMEBE	.817
BAware	<-- SMEBE	.741
item20	<-- BFunct	.585
item21	<-- BFunct	.606
item22	<-- BFunct	.632
item17	<-- BFunct	.321
item16	<-- BFunct	.285
item27	<-- BAuthen	.493
item8	<-- BAuthen	.542
item32	<-- BAttent	.398
item34	<-- BAttent	.642
item35	<-- BAttent	.588
item33	<-- BAttent	.515
item9	<-- BAuthen	.608
P1_16	<-- BAware	.808
P1_15	<-- BAware	.778
P1_14	<-- BAware	.733
P1_13	<-- BAware	.729
P1_12	<-- BAware	.604
P2_1	<-- BReso	.570
P2_2	<-- BReso	.605
P2_3	<-- BReso	.775
P2_4	<-- BReso	.713
P2_5	<-- BReso	.743
P2_6	<-- BReso	.561

Covariances: (HighSMEBE - Default model)

		Estimate	S.E.	C.R.	P	Label
e17	<--> e16	.291	.025	11.585	***	v_e1617
e2_1	<--> e2_2	.127	.020	6.341	***	v_e2_12_2
e2_3	<--> e2_6	-.106	.018	-5.996	***	v_e2_32_6
e1_14	<--> e2_6	.055	.018	2.989	.003	v_e1_142_6
e20	<--> e17	.049	.015	3.283	.001	v_e1720
e2_1	<--> e2_5	-.076	.016	-4.632	***	v_e2_12_5
e20	<--> e1_12	-.027	.016	-1.691	.091	v_e201_12
e1_13	<--> e2_5	.011	.015	.703	.482	v_e1_132_5

Correlations: (HighSMEBE - Default model)

		Estimate
e17	<--> e16	.604
e2_1	<--> e2_2	.338
e2_3	<--> e2_6	-.338

	Estimate
e1_14 <--> e2_6	.158
e20 <--> e17	.131
e2_1 <--> e2_5	-.224
e20 <--> e1_12	-.084
e1_13 <--> e2_5	.037

Variances: (HighSMEBE - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.022	.013	1.763	.078	par_34
res4	.043	.012	3.678	***	par_35
res2	.066	.017	3.863	***	par_36
res1	.201	.031	6.484	***	par_37
res5	.061	.014	4.306	***	par_38
e20	.301	.029	10.231	***	par_39
e21	.316	.032	9.822	***	par_40
e22	.286	.030	9.419	***	par_41
e17	.463	.034	13.699	***	par_42
e16	.500	.037	13.641	***	par_43
e27	.356	.033	10.923	***	par_44
e8	.381	.036	10.477	***	par_45
e9	.304	.032	9.525	***	par_46
e32	.348	.031	11.369	***	par_47
e34	.271	.031	8.688	***	par_48
e35	.306	.032	9.610	***	par_49
e33	.394	.038	10.492	***	par_50
e1_16	.237	.026	9.065	***	par_51
e1_15	.268	.028	9.681	***	par_52
e1_14	.300	.029	10.407	***	par_53
e1_13	.263	.025	10.373	***	par_54
e1_12	.348	.031	11.339	***	par_55
e2_1	.379	.032	11.931	***	par_56
e2_2	.373	.031	11.965	***	par_57
e2_4	.328	.031	10.454	***	par_58
e2_5	.304	.030	10.083	***	par_59
e2_3	.240	.026	9.219	***	par_60
e2_6	.406	.036	11.335	***	par_61

Squared Multiple Correlations: (HighSMEBE - Default model)

	Estimate
BReso	.667
BAware	.550
BAttent	.343
BAuthen	.804
BFunc	.579
P2_6	.314
P2_5	.552
P2_4	.508
P2_3	.600
P2_2	.366
P2_1	.325
P1_12	.365
P1_13	.531
P1_14	.537
P1_15	.606
P1_16	.653
item33	.266
item35	.346
item34	.412
item32	.159
item9	.370
item8	.294
item27	.243
item16	.081
item17	.103
item22	.399
item21	.367
item20	.343

LowSMEBE (LowSMEBE - Default model)

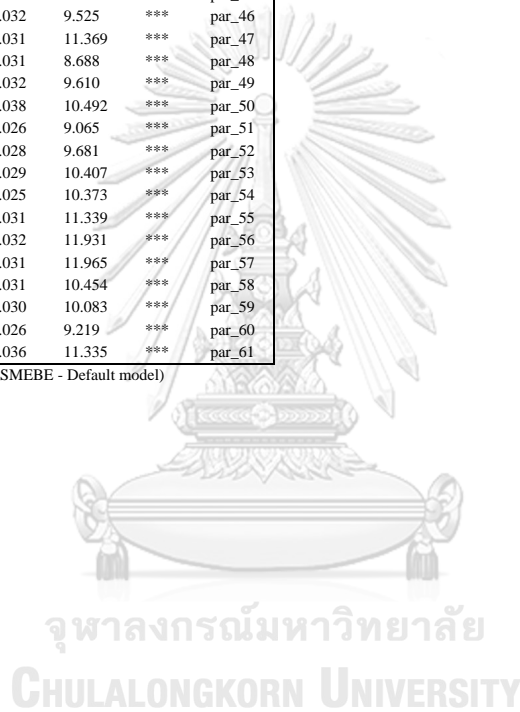
Estimates (LowSMEBE - Default model)

Scalar Estimates (LowSMEBE - Default model)

Maximum Likelihood Estimates

Regression Weights: (LowSMEBE - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.150	.023	6.634	***	pbcu
BAuthen <-- SMEBE	.303	.032	9.506	***	pbau
BFunc <-- SMEBE	.301	.029	10.350	***	pbpr
BReso <-- SMEBE	.332	.038	8.769	***	par_33
BAware <-- SMEBE	.496	.036	13.838	***	pbaw



			Estimate	S.E.	C.R.	P	Label
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.080	.109	9.930	***	p10
item22	<--	BFunc	1.102	.110	10.013	***	p9
item17	<--	BFunc	.583	.089	6.562	***	p8
item16	<--	BFunc	.531	.097	5.457	***	p7
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.177	.137	8.597	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.700	.227	7.488	***	p17
item35	<--	BAttent	1.571	.213	7.377	***	p16
item33	<--	BAttent	1.474	.210	7.015	***	p15
item9	<--	BAuthen	1.249	.141	8.827	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.959	.049	19.387	***	p5
P1_14	<--	BAware	.882	.049	17.862	***	p4
P1_13	<--	BAware	.816	.047	17.360	***	p3
P1_12	<--	BAware	.669	.047	14.125	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.086	.084	12.909	***	p22
P2_3	<--	BReso	1.406	.117	12.022	***	p21
P2_4	<--	BReso	1.571	.149	10.521	***	par_32
P2_5	<--	BReso	1.432	.129	11.093	***	p20
P2_6	<--	BReso	1.009	.106	9.549	***	p19

Standardized Regression Weights: (LowSMEBE - Default model)

			Estimate
BAttent	<--	SMEBE	.482
BAuthen	<--	SMEBE	.730
BFunc	<--	SMEBE	.700
BReso	<--	SMEBE	.791
BAware	<--	SMEBE	.661
item20	<--	BFunc	.611
item21	<--	BFunc	.657
item22	<--	BFunc	.649
item17	<--	BFunc	.352
item16	<--	BFunc	.290
item27	<--	BAuthen	.503
item8	<--	BAuthen	.672
item32	<--	BAttent	.438
item34	<--	BAttent	.704
item35	<--	BAttent	.659
item33	<--	BAttent	.563
item9	<--	BAuthen	.671
P1_16	<--	BAware	.796
P1_15	<--	BAware	.815
P1_14	<--	BAware	.743
P1_13	<--	BAware	.712
P1_12	<--	BAware	.601
P2_1	<--	BReso	.527
P2_2	<--	BReso	.594
P2_3	<--	BReso	.754
P2_4	<--	BReso	.791
P2_5	<--	BReso	.743
P2_6	<--	BReso	.490

Covariances: (LowSMEBE - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.291	.025	11.585	***	v_e1617
e2_1	<-->	e2_2	.127	.020	6.341	***	v_e2_12_2
e2_3	<-->	e2_6	-.106	.018	-5.996	***	v_e2_32_6
e1_14	<-->	e2_6	.055	.018	2.989	.003	v_e1_142_6
e20	<-->	e17	.049	.015	3.283	.001	v_e1720
e2_1	<-->	e2_5	-.076	.016	-4.632	***	v_e2_12_5
e20	<-->	e1_12	-.027	.016	-1.691	.091	v_e201_12
e1_13	<-->	e2_5	.011	.015	.703	.482	v_e1_132_5

Correlations: (LowSMEBE - Default model)

			Estimate
e17	<-->	e16	.577
e2_1	<-->	e2_2	.305
e2_3	<-->	e2_6	-.272
e1_14	<-->	e2_6	.123
e20	<-->	e17	.132
e2_1	<-->	e2_5	-.207
e20	<-->	e1_12	-.074
e1_13	<-->	e2_5	.032

Variances: (LowSMEBE - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.081	.023	3.479	***	par_62



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	Estimate	S.E.	C.R.	P	Label
res4	.074	.020	3.797	***	par_63
res2	.094	.023	4.136	***	par_64
res1	.317	.049	6.518	***	par_65
res5	.066	.017	3.884	***	par_66
e20	.310	.034	9.143	***	par_67
e21	.284	.034	8.293	***	par_68
e22	.309	.037	8.431	***	par_69
e17	.445	.035	12.850	***	par_70
e16	.569	.044	12.857	***	par_71
e27	.509	.052	9.850	***	par_72
e8	.290	.037	7.779	***	par_73
e9	.329	.042	7.829	***	par_74
e32	.407	.040	10.253	***	par_75
e34	.284	.039	7.263	***	par_76
e35	.310	.038	8.092	***	par_77
e33	.452	.048	9.365	***	par_78
e1_16	.326	.038	8.490	***	par_79
e1_15	.262	.032	8.095	***	par_80
e1_14	.355	.038	9.340	***	par_81
e1_13	.364	.038	9.589	***	par_82
e1_12	.444	.043	10.306	***	par_83
e2_1	.459	.041	11.181	***	par_84
e2_2	.380	.034	11.041	***	par_85
e2_4	.261	.032	8.257	***	par_86
e2_5	.293	.032	9.104	***	par_87
e2_3	.264	.030	8.805	***	par_88
e2_6	.569	.053	10.701	***	par_89

Model Fit Summary
CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	89	888.675	463	.000	1.919
Saturated model	552	.000	0		
Independence model	46	4645.734	506	.000	9.181

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.043	.881	.858	.739
Saturated model	.000	1.000		
Independence model	.159	.389	.333	.356

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.809	.791	.898	.888	.897
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.915	.740	.821
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	425.675	345.208	513.937
Saturated model	.000	.000	.000
Independence model	4139.734	3925.272	4361.508

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.616	.774	.628	.934
Saturated model	.000	.000	.000	.000
Independence model	8.447	7.527	7.137	7.930

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.041	.037	.045	1.000
Independence model	.122	.119	.125	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1066.675	1083.901		
Saturated model	1104.000	1210.844		
Independence model	4737.734	4746.638		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.939	1.793	2.100	1.971
Saturated model	2.007	2.007	2.007	2.202
Independence model	8.614	8.224	9.017	8.630

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	320	334

Model	HOELTER	HOELTER
Independence model	68	71

Execution time summary

Minimization: .040

Miscellaneous: 1.037

Bootstrap: .000

Total: 1.077



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3. Factor loadings constrained equal

High SME brand equity, low SME brand equity

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\Invariance testing for consumers with LH SMEBE BINV BENG\Invariance of HL SMEBE AMOS factor loadings constrained equal.amw

Analysis Summary

Date and Time

Date: Monday, October 29, 2018

Time: 12:48:14 PM

Title

Invariance of hl smebe amos factor loadings constrained equal: Monday, October 29, 2018 12:48 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 303

Variable Summary (HighSMEBE)

Your model contains the following variables (HighSMEBE)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (HighSMEBE)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (HighSMEBE)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	0	0	0	0	21



	Weights	Covariances	Variances	Means	Intercepts	Total
Unlabeled	2	8	28	0	0	38
Total	56	8	29	0	0	93

Assessment of normality (HighSMEBE)

Variable	min	max	skew	c.r.	kurtosis	c.r.
P2_6	1.000	5.000	-.413	-2.938	.565	2.007
P2_5	1.000	5.000	-.281	-1.996	.086	.304
P2_4	1.000	5.000	-.501	-3.562	.694	2.466
P2_3	1.000	5.000	-.251	-1.781	.801	2.845
P2_2	1.000	5.000	-.318	-2.260	.597	2.122
P2_1	1.000	5.000	-.568	-4.035	1.050	3.732
P1_12	1.000	5.000	-.062	-.438	-.112	-.398
P1_13	2.000	5.000	-.126	-.896	-.296	-1.051
P1_14	1.000	5.000	-.232	-1.647	.190	.676
P1_15	1.000	5.000	-.518	-3.679	.480	1.704
P1_16	1.000	5.000	-.318	-2.260	.116	.413
item33	1.000	5.000	-.563	-4.000	1.454	5.166
item35	2.000	5.000	.085	.607	-.364	-1.295
item34	1.000	6.000	-.083	-.591	.616	2.189
item32	2.000	5.000	-.079	-.558	-.158	-.562
item9	1.000	5.000	-.168	-1.196	.214	.762
item8	1.000	5.000	-.332	-2.358	.590	2.095
item27	1.000	5.000	-.213	-1.512	.286	1.018
item16	3.000	5.000	.058	.412	-.677	-2.406
item17	2.000	5.000	.051	.363	-.448	-1.591
item22	2.000	5.000	.071	.505	-.508	-1.805
item21	1.000	5.000	-.621	-4.412	1.805	6.415
item20	2.000	5.000	.080	.569	-.478	-1.697
Multivariate					134.753	34.584

Observations farthest from the centroid (Mahalanobis distance) (HighSMEBE)

Observation number	Mahalanobis d-squared	p1	p2
205	106.595	.000	.000
23	105.485	.000	.000
294	73.130	.000	.000
27	65.827	.000	.000
293	59.748	.000	.000
257	59.506	.000	.000
25	56.471	.000	.000
53	56.337	.000	.000
30	56.224	.000	.000
202	55.619	.000	.000
264	54.392	.000	.000
256	53.795	.000	.000
244	53.485	.000	.000
283	53.344	.000	.000
241	49.221	.001	.000
22	49.127	.001	.000
11	47.620	.002	.000
303	47.071	.002	.000
287	46.655	.002	.000
218	45.643	.003	.000
255	45.193	.004	.000
133	44.878	.004	.000
19	44.074	.005	.000
40	43.268	.006	.000
164	41.550	.010	.000
20	41.426	.011	.000
198	41.118	.011	.000
196	40.714	.013	.000
253	40.699	.013	.000
268	39.037	.020	.000
21	38.872	.020	.000
8	38.787	.021	.000
197	38.110	.025	.000
247	37.564	.028	.000
5	37.013	.032	.000
32	36.449	.037	.000
12	35.865	.043	.000
7	35.247	.049	.000
199	34.770	.055	.000
183	34.541	.058	.000
186	34.526	.058	.000
44	34.487	.058	.000
165	34.405	.060	.000
3	34.197	.062	.000
208	33.807	.068	.000
56	33.539	.072	.000
26	33.314	.076	.000

Observation number	Mahalanobis d-squared	p1	p2
54	33.313	.076	.000
15	32.704	.086	.000
201	32.660	.087	.000
275	32.628	.088	.000
4	32.428	.092	.000
180	32.388	.092	.000
188	32.253	.095	.000
250	31.564	.110	.000
200	31.558	.110	.000
203	31.195	.118	.000
296	31.090	.121	.000
173	30.921	.125	.000
206	30.548	.134	.001
168	29.508	.164	.050
24	29.212	.173	.089
172	28.878	.184	.163
295	28.693	.191	.200
286	28.415	.200	.292
177	28.143	.210	.398
46	28.068	.213	.390
179	28.028	.215	.362
163	27.788	.224	.459
281	27.404	.239	.652
278	27.169	.249	.740
279	27.169	.249	.695
2	27.119	.251	.677
174	26.877	.261	.769
51	26.641	.272	.843
13	26.341	.285	.918
272	26.287	.287	.912
14	26.057	.298	.948
39	26.019	.300	.941
94	25.795	.311	.967
236	25.751	.313	.963
95	25.541	.323	.979
6	25.393	.330	.985
266	25.373	.331	.982
280	25.326	.334	.980
131	24.997	.350	.994
190	24.680	.367	.999
265	24.325	.386	1.000
224	24.322	.386	1.000
31	24.306	.387	1.000
29	24.060	.400	1.000
230	23.912	.409	1.000
86	23.791	.415	1.000
254	23.766	.417	1.000
121	23.529	.430	1.000
262	23.437	.435	1.000
35	23.391	.438	1.000
147	23.312	.443	1.000
167	23.304	.443	1.000
229	23.091	.455	1.000

Group number 2 (Group number 2)

Notes for Group (Group number 2)

The model is recursive.

Sample size = 249

Variable Summary (LowSMEBE)

Your model contains the following variables (LowSMEBE)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

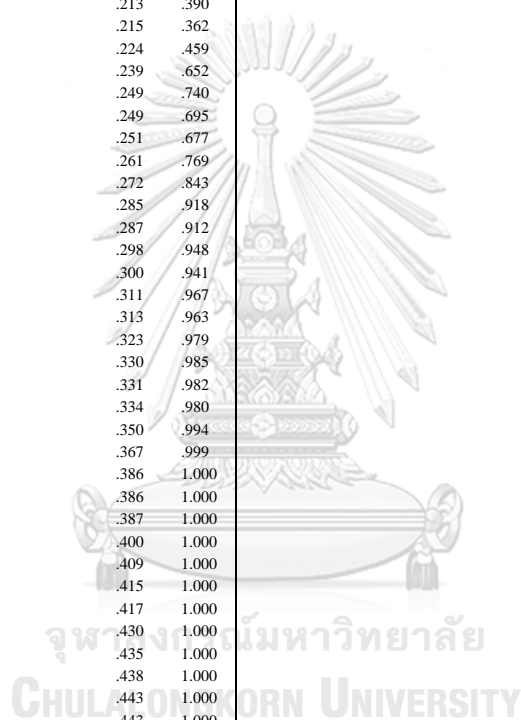
P2_1

P2_2

P2_3

P2_4

P2_5



P2_6
 Unobserved, endogenous variables
 BFunc
 BAuthen
 BAttent
 BAware
 BReso
 Unobserved, exogenous variables
 e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6
 Variable counts (LowSMEBE)
 Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28
 Parameter Summary (LowSMEBE)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	0	0	0	0	21
Unlabeled	2	8	28	0	0	38
Total	56	8	29	0	0	93

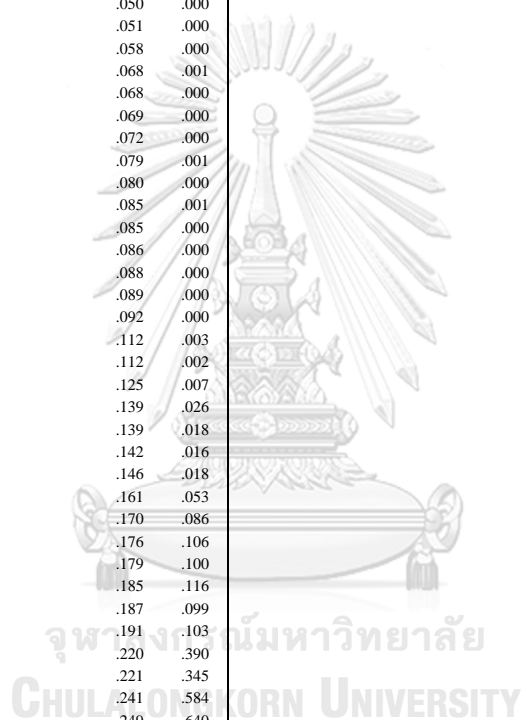
Assessment of normality (LowSMEBE)

Variable	min	max	skew	c.r.	kurtosis	c.r.
P2_6	1.000	5.000	.016	.106	.000	.001
P2_5	1.000	5.000	-.032	-.207	-.138	-.445
P2_4	1.000	5.000	.139	.894	-.344	-1.109
P2_3	1.000	5.000	.155	.999	.218	.703
P2_2	1.000	5.000	-.478	-3.077	.531	1.710
P2_1	1.000	5.000	-.019	-.119	.361	1.163
P1_12	1.000	5.000	.140	.903	.711	2.291
P1_13	1.000	5.000	.082	.527	.213	.686
P1_14	1.000	5.000	.296	1.904	-.062	-.199
P1_15	1.000	5.000	.456	2.939	.316	1.019
P1_16	1.000	5.000	.395	2.542	-.018	-.058
item33	1.000	5.000	-.063	-.406	-.159	-.512
item35	1.000	5.000	-.074	-.476	-.088	-.283
item34	1.000	4.000	-.285	-1.838	-.274	-.882
item32	1.000	5.000	-.111	-.713	.187	.604
item9	1.000	5.000	.015	.096	.016	.052
item8	1.000	5.000	.118	.761	.427	1.376
item27	1.000	5.000	.210	1.353	.080	.258
item16	1.000	5.000	.072	.464	-.103	-.331
item17	1.000	5.000	.073	.468	.037	.118
item22	1.000	5.000	.028	.179	-.153	-.492
item21	1.000	5.000	.006	.036	.311	1.002
item20	1.000	5.000	.050	.321	-.029	-.093
Multivariate					115.862	26.956

Observations farthest from the centroid (Mahalanobis distance) (LowSMEBE)

Observation number	Mahalanobis d-squared	p1	p2
90	96.205	.000	.000
166	80.943	.000	.000
208	80.943	.000	.000
226	78.477	.000	.000
178	69.226	.000	.000
248	56.563	.000	.000
92	54.278	.000	.000
241	52.284	.000	.000

Observation number	Mahalanobis d-squared	p1	p2
49	52.182	.000	.000
48	49.252	.001	.000
66	47.543	.002	.000
176	45.802	.003	.000
76	41.509	.010	.000
12	40.325	.014	.000
23	39.554	.017	.000
79	39.447	.018	.000
93	37.995	.026	.000
81	37.878	.026	.000
245	37.859	.026	.000
133	37.317	.030	.000
169	37.301	.030	.000
209	36.568	.036	.000
89	36.231	.039	.000
20	35.832	.043	.000
13	35.393	.048	.000
83	35.300	.049	.000
91	35.180	.050	.000
106	35.165	.050	.000
32	35.114	.051	.000
25	34.492	.058	.000
69	33.836	.068	.001
17	33.814	.068	.000
63	33.714	.069	.000
73	33.561	.072	.000
107	33.133	.079	.001
87	33.061	.080	.000
184	32.805	.085	.001
74	32.786	.085	.000
21	32.746	.086	.000
234	32.599	.088	.000
97	32.556	.089	.000
170	32.416	.092	.000
82	31.453	.112	.003
59	31.450	.112	.002
183	30.920	.125	.007
61	30.374	.139	.026
43	30.361	.139	.018
190	30.270	.142	.016
53	30.104	.146	.018
149	29.621	.161	.053
71	29.318	.170	.086
179	29.116	.176	.106
105	29.025	.179	.100
96	28.852	.185	.116
249	28.808	.187	.099
72	28.678	.191	.103
77	27.892	.220	.390
28	27.870	.221	.345
242	27.358	.241	.584
111	27.164	.249	.640
11	26.988	.256	.684
7	26.787	.265	.740
99	26.742	.267	.715
14	26.700	.269	.687
45	26.438	.281	.775
15	26.433	.281	.732
102	26.367	.284	.719
84	26.260	.289	.729
36	26.228	.290	.698
16	26.013	.300	.765
75	26.004	.301	.725
171	25.810	.310	.780
189	25.569	.322	.848
236	25.490	.326	.847
110	25.025	.349	.952
109	25.011	.350	.939
216	25.004	.350	.923
224	24.931	.354	.921
232	24.900	.355	.908
201	24.896	.356	.886
168	24.777	.362	.898
172	24.725	.365	.890
221	24.648	.369	.890
191	24.640	.369	.865
46	24.399	.382	.918



Observation number	Mahalanobis d-squared	p1	p2
64	24.159	.395	.953
56	24.103	.398	.950
126	23.548	.429	.994
150	23.548	.429	.991
230	23.437	.436	.993
124	23.425	.436	.990
165	23.419	.437	.986
219	23.239	.447	.992
6	23.236	.447	.989
244	23.204	.449	.987
29	23.188	.450	.983
151	23.041	.458	.988
238	23.035	.459	.984
164	22.837	.470	.991
70	22.823	.471	.988

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 97

Degrees of freedom (552 - 97): 455

Result (Default model)

Minimum was achieved

Chi-square = 837.956

Degrees of freedom = 455

Probability level = .000

HighSMEBE (HighSMEBE - Default model)

Estimates (HighSMEBE - Default model)

Scalar Estimates (HighSMEBE - Default model)

Maximum Likelihood Estimates

Regression Weights: (HighSMEBE - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.150	.023	6.642	***	pbcu
BAuthen <-- SMEBE	.301	.032	9.456	***	pbau
BFunc <-- SMEBE	.296	.029	10.277	***	pbpr
BReso <-- SMEBE	.346	.035	9.959	***	par_23
BAware <-- SMEBE	.495	.036	13.816	***	pbaw
item20 <-- BFunc	1.000				
item21 <-- BFunc	1.100	.110	9.982	***	p10
item22 <-- BFunc	1.117	.111	10.053	***	p9
item17 <-- BFunc	.592	.087	6.811	***	p8
item16 <-- BFunc	.537	.095	5.622	***	p7
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	1.183	.138	8.573	***	p13
item32 <-- BAttent	1.000				
item34 <-- BAttent	1.701	.227	7.487	***	p17
item35 <-- BAttent	1.572	.213	7.376	***	p16
item33 <-- BAttent	1.476	.210	7.015	***	p15
item9 <-- BAuthen	1.256	.143	8.802	***	p12
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	.959	.049	19.388	***	p5
P1_14 <-- BAware	.885	.049	17.904	***	p4
P1_13 <-- BAware	.821	.047	17.468	***	p3
P1_12 <-- BAware	.672	.047	14.221	***	p2
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	1.092	.085	12.818	***	p22
P2_3 <-- BReso	1.421	.119	11.984	***	p21
P2_4 <-- BReso	1.372	.133	10.311	***	par_22
P2_5 <-- BReso	1.452	.130	11.133	***	p20
P2_6 <-- BReso	1.023	.107	9.547	***	p19

Standardized Regression Weights: (HighSMEBE - Default model)

	Estimate
BAttent <-- SMEBE	.587
BAuthen <-- SMEBE	.893
BFunc <-- SMEBE	.752
BReso <-- SMEBE	.816
BAware <-- SMEBE	.741
item20 <-- BFunc	.589
item21 <-- BFunc	.610
item22 <-- BFunc	.636
item17 <-- BFunc	.365
item16 <-- BFunc	.323
item27 <-- BAuthen	.492
item8 <-- BAuthen	.543
item32 <-- BAttent	.398
item34 <-- BAttent	.642
item35 <-- BAttent	.588
item33 <-- BAttent	.515

		Estimate
item9 <--> BAuthen		.610
P1_16 <--> BAware		.808
P1_15 <--> BAware		.778
P1_14 <--> BAware		.735
P1_13 <--> BAware		.732
P1_12 <--> BAware		.608
P2_1 <--> BReso		.574
P2_2 <--> BReso		.608
P2_3 <--> BReso		.774
P2_4 <--> BReso		.711
P2_5 <--> BReso		.751
P2_6 <--> BReso		.563

Covariances: (HighSMEBE - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.166	.024	6.859	***	par_24
e2_1 <--> e2_2	.117	.025	4.690	***	par_25
e2_3 <--> e2_6	-.123	.022	-5.510	***	par_26
e1_14 <--> e2_6	.043	.022	1.937	.053	par_27
e20 <--> e17	.038	.019	2.031	.042	par_28
e2_1 <--> e2_5	-.048	.020	-2.348	.019	par_29
e20 <--> e1_12	-.001	.020	-.034	.973	par_30
e1_13 <--> e2_5	-.014	.019	-.724	.469	par_31

Correlations: (HighSMEBE - Default model)

	Estimate
e17 <--> e16	.451
e2_1 <--> e2_2	.320
e2_3 <--> e2_6	-.391
e1_14 <--> e2_6	.125
e20 <--> e17	.119
e2_1 <--> e2_5	-.147
e20 <--> e1_12	-.002
e1_13 <--> e2_5	-.049

Variances: (HighSMEBE - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.023	.013	1.805	.071	par_42
res4	.043	.012	3.674	***	par_43
res2	.067	.017	3.997	***	par_44
res1	.201	.031	6.477	***	par_45
res5	.060	.014	4.290	***	par_46
e20	.292	.029	10.052	***	par_47
e21	.316	.032	9.808	***	par_48
e22	.285	.030	9.417	***	par_49
e17	.353	.030	11.654	***	par_50
e16	.382	.032	11.800	***	par_51
e27	.356	.033	10.931	***	par_52
e8	.381	.036	10.463	***	par_53
e9	.302	.032	9.493	***	par_54
e32	.348	.031	11.371	***	par_55
e34	.271	.031	8.694	***	par_56
e35	.306	.032	9.612	***	par_57
e33	.394	.038	10.494	***	par_58
e1_16	.238	.026	9.101	***	par_59
e1_15	.268	.028	9.702	***	par_60
e1_14	.297	.029	10.308	***	par_61
e1_13	.260	.025	10.324	***	par_62
e1_12	.343	.030	11.308	***	par_63
e2_1	.365	.033	11.208	***	par_64
e2_2	.365	.032	11.272	***	par_65
e2_4	.330	.031	10.500	***	par_66
e2_5	.293	.029	9.961	***	par_67
e2_3	.243	.027	9.158	***	par_68
e2_6	.406	.036	11.146	***	par_69

LowSMEBE (LowSMEBE - Default model)

Estimates (LowSMEBE - Default model)

Scalar Estimates (LowSMEBE - Default model)

Maximum Likelihood Estimates

Regression Weights: (LowSMEBE - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <--> SMEBE	.150	.023	6.642	***	pbcu
BAuthen <--> SMEBE	.301	.032	9.456	***	pbau
BFunct <--> SMEBE	.296	.029	10.277	***	pbpr
BReso <--> SMEBE	.327	.037	8.786	***	par_33
BAware <--> SMEBE	.495	.036	13.816	***	pbaw
item20 <--> BFunct	1.000				
item21 <--> BFunct	1.100	.110	9.982	***	p10
item22 <--> BFunct	1.117	.111	10.053	***	p9
item17 <--> BFunct	.592	.087	6.811	***	p8

			Estimate	S.E.	C.R.	P	Label
item16	<--	BFunc	.537	.095	5.622	***	p7
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.183	.138	8.573	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.701	.227	7.487	***	p17
item35	<--	BAttent	1.572	.213	7.376	***	p16
item33	<--	BAttent	1.476	.210	7.015	***	p15
item9	<--	BAuthen	1.256	.143	8.802	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.959	.049	19.388	***	p5
P1_14	<--	BAware	.885	.049	17.904	***	p4
P1_13	<--	BAware	.821	.047	17.468	***	p3
P1_12	<--	BAware	.672	.047	14.221	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.092	.085	12.818	***	p22
P2_3	<--	BReso	1.421	.119	11.984	***	p21
P2_4	<--	BReso	1.606	.152	10.558	***	par_32
P2_5	<--	BReso	1.452	.130	11.133	***	p20
P2_6	<--	BReso	1.023	.107	9.547	***	p19

Standardized Regression Weights: (LowSMEBE - Default model)

			Estimate
BAttent	<--	SMEBE	.484
BAuthen	<--	SMEBE	.728
BFunc	<--	SMEBE	.694
BReso	<--	SMEBE	.792
BAware	<--	SMEBE	.659
item20	<--	BFunc	.599
item21	<--	BFunc	.666
item22	<--	BFunc	.654
item17	<--	BFunc	.316
item16	<--	BFunc	.258
item27	<--	BAuthen	.501
item8	<--	BAuthen	.673
item32	<--	BAttent	.438
item34	<--	BAttent	.704
item35	<--	BAttent	.659
item33	<--	BAttent	.563
item9	<--	BAuthen	.672
P1_16	<--	BAware	.795
P1_15	<--	BAware	.815
P1_14	<--	BAware	.743
P1_13	<--	BAware	.713
P1_12	<--	BAware	.601
P2_1	<--	BReso	.513
P2_2	<--	BReso	.584
P2_3	<--	BReso	.754
P2_4	<--	BReso	.796
P2_5	<--	BReso	.737
P2_6	<--	BReso	.490

Covariances: (LowSMEBE - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.453	.051	8.895	***	par_34
e2_1	<-->	e2_2	.141	.032	4.375	***	par_35
e2_3	<-->	e2_6	-.074	.028	-2.643	.008	par_36
e1_14	<-->	e2_6	.084	.032	2.579	.010	par_37
e20	<-->	e17	.065	.022	2.892	.004	par_38
e2_1	<-->	e2_5	-.114	.026	-4.341	***	par_39
e20	<-->	e1_12	-.071	.027	-2.657	.008	par_40
e1_13	<-->	e2_5	.050	.025	2.046	.041	par_41

Correlations: (LowSMEBE - Default model)

			Estimate
e17	<-->	e16	.698
e2_1	<-->	e2_2	.324
e2_3	<-->	e2_6	-.192
e1_14	<-->	e2_6	.185
e20	<-->	e17	.149
e2_1	<-->	e2_5	-.299
e20	<-->	e1_12	-.187
e1_13	<-->	e2_5	-.151

Variances: (LowSMEBE - Default model)

		Estimate	S.E.	C.R.	P	Label
SMEBE		1.000				
res3		.081	.023	3.482	***	par_70
res4		.074	.019	3.793	***	par_71
res2		.094	.023	4.145	***	par_72
res1		.318	.049	6.534	***	par_73
res5		.064	.016	3.879	***	par_74



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	Estimate	S.E.	C.R.	P	Label
e20	.325	.036	9.073	***	par_75
e21	.276	.034	8.137	***	par_76
e22	.303	.036	8.343	***	par_77
e17	.573	.052	10.945	***	par_78
e16	.734	.067	10.897	***	par_79
e27	.510	.052	9.862	***	par_80
e8	.289	.037	7.758	***	par_81
e9	.329	.042	7.810	***	par_82
e32	.407	.040	10.255	***	par_83
e34	.284	.039	7.265	***	par_84
e35	.310	.038	8.094	***	par_85
e33	.452	.048	9.364	***	par_86
e1_16	.328	.039	8.514	***	par_87
e1_15	.262	.032	8.100	***	par_88
e1_14	.359	.039	9.266	***	par_89
e1_13	.367	.038	9.579	***	par_90
e1_12	.449	.044	10.287	***	par_91
e2_1	.479	.046	10.393	***	par_92
e2_2	.394	.038	10.251	***	par_93
e2_4	.255	.032	8.099	***	par_94
e2_5	.303	.033	9.047	***	par_95
e2_3	.262	.030	8.775	***	par_96
e2_6	.567	.054	10.500	***	par_97

Squared Multiple Correlations: (LowSMEBE - Default model)

	Estimate
BReso	.627
BAware	.435
BAttent	.234
BAuthen	.530
BFunc	.482
P2_6	.240
P2_5	.543
P2_4	.633
P2_3	.568
P2_2	.341
P2_1	.263
P1_12	.361
P1_13	.509
P1_14	.552
P1_15	.664
P1_16	.632
item33	.317
item35	.435
item34	.495
item32	.191
item9	.451
item8	.453
item27	.251
item16	.067
item17	.100
item22	.428
item21	.444
item20	.359



Minimization History (Default model)

Iteration	Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e 25		-.391	9999.000	5866.657	0	9999.000
1	e 24		-.100	2.599	3689.269	21	.656
2	e* 9		-.883	1.592	2672.084	5	.662
3	e 6		-.073	.749	2103.903	5	.803
4	e* 0	425.508		1.777	1351.846	5	.673
5	e 2		-.407	1.007	1292.011	3	.000
6	e 0	220.174		.558	983.944	5	.896
7	e 0	379.687		1.113	888.319	1	.760
8	e 0	431.368		.351	851.138	2	.000
9	e 0	511.382		.309	838.714	1	1.084
10	e 0	925.499		.173	837.990	1	1.099
11	e 0	1069.342		.050	837.956	1	1.054
12	e 0	1147.679		.005	837.956	1	1.006
13	e 0	1141.414		.000	837.956	1	1.000

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	97	837.956	455	.000	1.842
Saturated model	552	.000	0		
Independence model	46	4645.734	506	.000	9.181

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.041	.889	.865	.733
Saturated model	.000	1.000		
Independence model	.159	.389	.333	.356

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.820	.799	.909	.897	.907
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.899	.737	.816
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	382.956	305.553	468.178
Saturated model	.000	.000	.000
Independence model	4139.734	3925.272	4361.508

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.524	.696	.556	.851
Saturated model	.000	.000	.000	.000
Independence model	8.447	7.527	7.137	7.930

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.039	.035	.043	1.000
Independence model	.122	.119	.125	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1031.956		1050.731	
Saturated model	1104.000		1210.844	
Independence model	4737.734	4746.638		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.876	1.736	2.031	1.910
Saturated model	2.007	2.007	2.007	2.202
Independence model	8.614	8.224	9.017	8.630

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	333	348
Independence model	68	71

Execution time summary

Minimization:	.013
Miscellaneous:	.828
Bootstrap:	.000
Total:	.841

1. Hypothesized model (Model 1)

High product involvement, low product involvement

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\Invariance testing for consumers with LH SMEBE BINV BENG\Invariance of HL PINV AMOS
Baseline model with no equality imposed.amw

Analysis Summary

Date and Time

Date: Monday, October 29, 2018

Time: 2:23:38 PM

Title

Invariance of hl pinv amos baseline model with no equality imposed: Monday, October 29, 2018 2:23 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 298

Variable Summary (HPINV)

Your model contains the following variables (HPINV)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFuncnt

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (HPINV)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (HPINV)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0
Unlabeled	23	7	28	0	0	58
Total	56	7	29	0	0	92



Group number 2 (Group number 2)

Notes for Group (Group number 2)

The model is recursive.

Sample size = 222

Variable Summary (LPINV)

Your model contains the following variables (LPINV)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (LPINV)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (LPINV)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0
Unlabeled	23	7	28	0	0	58
Total	56	7	29	0	0	92

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 116

Degrees of freedom (552 - 116): 436

Result (Default model)

Minimum was achieved

Chi-square = 843.931

Degrees of freedom = 436

Probability level = .000

HPINV (HPINV - Default model)

Estimates (HPINV - Default model)



Scalar Estimates (HPINV - Default model)
Maximum Likelihood Estimates
Regression Weights: (HPINV - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.413	.041	9.976	***	par_9
BAuthen	<--	SMEBE	.543	.048	11.315	***	par_10
BFunc	<--	SMEBE	.557	.045	12.457	***	par_11
BReso	<--	SMEBE	.390	.040	9.736	***	par_21
BAware	<--	SMEBE	.549	.048	11.460	***	par_23
item20	<--	BFunc	1.000				
item21	<--	BFunc	.980	.078	12.546	***	par_1
item22	<--	BFunc	.976	.079	12.374	***	par_2
item17	<--	BFunc	.666	.072	9.211	***	par_3
item16	<--	BFunc	.564	.074	7.668	***	par_4
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.025	.104	9.884	***	par_5
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.030	.108	9.534	***	par_6
item35	<--	BAttent	1.142	.115	9.909	***	par_7
item33	<--	BAttent	.989	.114	8.708	***	par_8
item9	<--	BAuthen	1.049	.106	9.937	***	par_12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	1.001	.059	16.852	***	par_13
P1_14	<--	BAware	.871	.063	13.793	***	par_14
P1_13	<--	BAware	.792	.056	14.141	***	par_15
P1_12	<--	BAware	.641	.059	10.804	***	par_16
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.224	.108	11.342	***	par_17
P2_3	<--	BReso	1.272	.122	10.423	***	par_18
P2_4	<--	BReso	1.344	.127	10.572	***	par_19
P2_5	<--	BReso	1.464	.145	10.125	***	par_20
P2_6	<--	BReso	1.194	.125	9.550	***	par_22

Standardized Regression Weights: (HPINV - Default model)

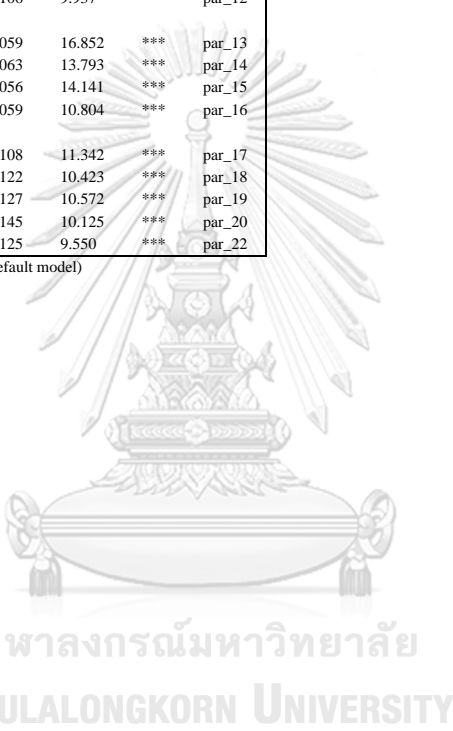
			Estimate
BAttent	<--	SMEBE	.817
BAuthen	<--	SMEBE	.956
BFunc	<--	SMEBE	.867
BReso	<--	SMEBE	.787
BAware	<--	SMEBE	.723
item20	<--	BFunc	.763
item21	<--	BFunc	.757
item22	<--	BFunc	.746
item17	<--	BFunc	.562
item16	<--	BFunc	.473
item27	<--	BAuthen	.657
item8	<--	BAuthen	.688
item32	<--	BAttent	.657
item34	<--	BAttent	.684
item35	<--	BAttent	.721
item33	<--	BAttent	.609
item9	<--	BAuthen	.693
P1_16	<--	BAware	.836
P1_15	<--	BAware	.850
P1_14	<--	BAware	.730
P1_13	<--	BAware	.746
P1_12	<--	BAware	.606
P2_1	<--	BReso	.632
P2_2	<--	BReso	.705
P2_3	<--	BReso	.759
P2_4	<--	BReso	.758
P2_5	<--	BReso	.799
P2_6	<--	BReso	.677

Covariances: (HPINV - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.233	.030	7.709	***	par_24
e2_1	<-->	e2_5	-.074	.022	-3.285	.001	par_25
e1_13	<-->	e1_12	.053	.023	2.282	.022	par_26
e17	<-->	e33	-.056	.022	-2.618	.009	par_27
e2_3	<-->	e2_6	-.125	.024	-5.109	***	par_28
e35	<-->	e2_3	.035	.021	1.670	.095	par_29
e2_1	<-->	e2_2	.079	.026	3.038	.002	par_30

Correlations: (HPINV - Default model)

			Estimate
e17	<-->	e16	.548
e2_1	<-->	e2_5	-.222
e1_13	<-->	e1_12	.155
e17	<-->	e33	-.138
e2_3	<-->	e2_6	-.357
e35	<-->	e2_3	.117



e2_1 <--> e2_2	Estimate
	.213

Variances: (HPINV - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.028	.020	1.417	.157	par_61
res4	.085	.020	4.283	***	par_62
res2	.102	.024	4.294	***	par_63
res1	.275	.039	7.103	***	par_64
res5	.094	.019	4.978	***	par_65
e20	.295	.032	9.341	***	par_66
e21	.296	.031	9.461	***	par_67
e22	.313	.032	9.633	***	par_68
e17	.396	.035	11.300	***	par_69
e16	.457	.039	11.591	***	par_70
e27	.425	.041	10.364	***	par_71
e8	.377	.038	9.983	***	par_72
e9	.386	.039	9.917	***	par_73
e32	.335	.033	10.134	***	par_74
e34	.308	.031	9.805	***	par_75
e35	.307	.033	9.245	***	par_76
e33	.423	.040	10.596	***	par_77
e1_16	.249	.029	8.690	***	par_78
e1_15	.222	.027	8.268	***	par_79
e1_14	.384	.037	10.504	***	par_80
e1_13	.289	.028	10.244	***	par_81
e1_12	.408	.036	11.216	***	par_82
e2_1	.371	.034	10.883	***	par_83
e2_2	.375	.035	10.746	***	par_84
e2_4	.328	.032	10.382	***	par_85
e2_5	.298	.031	9.536	***	par_86
e2_3	.293	.030	9.861	***	par_87
e2_6	.416	.039	10.650	***	par_88

Minimization History (Default model)

Iteration		Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e	30		-.504	9999.000	6617.660	0	9999.000
1	e*	23		-.182	2.761	4602.275	22	.579
2	e	19		-.151	1.028	3689.968	6	.918
3	e*	10		-2.129	1.699	2586.907	5	.723
4	e	7		-.084	.648	2183.482	5	.524
5	e*	1		-.007	1.729	1378.111	5	.716
6	e	0	77.985		.742	1045.568	4	.961
7	e	0	119.945		1.285	890.998	1	.944
8	e	0	185.993		.625	848.434	1	1.061
9	e	0	333.042		.328	844.148	1	1.096
10	e	0	438.558		.101	843.934	1	1.064
11	e	0	465.829		.016	843.931	1	1.014
12	e	0	465.815		.000	843.931	1	1.000

LPINV (LPINV - Default model)

Estimates (LPINV - Default model)

Scalar Estimates (LPINV - Default model)

Maximum Likelihood Estimates

Regression Weights: (LPINV - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.311	.046	6.842	***	par_39
BAuthen <-- SMEBE	.458	.054	8.488	***	par_40
BFunct <-- SMEBE	.477	.049	9.688	***	par_41
BReso <-- SMEBE	.385	.050	7.688	***	par_51
BAware <-- SMEBE	.517	.056	9.316	***	par_53
item20 <-- BFunct	1.000				
item21 <-- BFunct	1.322	.132	10.040	***	par_31
item22 <-- BFunct	1.237	.124	10.003	***	par_32
item17 <-- BFunct	.557	.107	5.216	***	par_33
item16 <-- BFunct	.301	.108	2.791	.005	par_34
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	1.149	.139	8.255	***	par_35
item32 <-- BAttent	1.000				
item34 <-- BAttent	1.407	.185	7.628	***	par_36
item35 <-- BAttent	1.199	.167	7.192	***	par_37
item33 <-- BAttent	1.316	.184	7.135	***	par_38
item9 <-- BAuthen	1.061	.129	8.194	***	par_42
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	.873	.077	11.383	***	par_43
P1_14 <-- BAware	.864	.074	11.673	***	par_44
P1_13 <-- BAware	.736	.074	9.999	***	par_45
P1_12 <-- BAware	.656	.075	8.784	***	par_46
P2_1 <-- BReso	1.000				

			Estimate	S.E.	C.R.	P	Label
P2_2	<--	BReso	1.137	.121	9.423	***	par_47
P2_3	<--	BReso	1.190	.149	7.979	***	par_48
P2_4	<--	BReso	1.364	.168	8.130	***	par_49
P2_5	<--	BReso	1.374	.186	7.406	***	par_50
P2_6	<--	BReso	.956	.157	6.097	***	par_52

Standardized Regression Weights: (LPINV - Default model)

			Estimate
BAttent	<--	SMEBE	.705
BAuthen	<--	SMEBE	.873
BFunc	<--	SMEBE	.882
BReso	<--	SMEBE	.822
BAware	<--	SMEBE	.717
item20	<--	BFunc	.691
item21	<--	BFunc	.787
item22	<--	BFunc	.783
item17	<--	BFunc	.384
item16	<--	BFunc	.204
item27	<--	BAuthen	.626
item8	<--	BAuthen	.735
item32	<--	BAttent	.575
item34	<--	BAttent	.760
item35	<--	BAttent	.677
item33	<--	BAttent	.665
item9	<--	BAuthen	.726
P1_16	<--	BAware	.806
P1_15	<--	BAware	.751
P1_14	<--	BAware	.768
P1_13	<--	BAware	.673
P1_12	<--	BAware	.602
P2_1	<--	BReso	.571
P2_2	<--	BReso	.659
P2_3	<--	BReso	.758
P2_4	<--	BReso	.777
P2_5	<--	BReso	.764
P2_6	<--	BReso	.511

Covariances: (LPINV - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.356	.046	7.814	***	par_54
e2_1	<-->	e2_5	-.086	.026	-3.250	.001	par_55
e1_13	<-->	e1_12	.090	.029	3.061	.002	par_56
e17	<-->	e33	.073	.028	2.651	.008	par_57
e2_3	<-->	e2_6	-.065	.028	-2.319	.020	par_58
e35	<-->	e2_3	-.043	.023	-1.895	.058	par_59
e2_1	<-->	e2_2	.160	.034	4.651	***	par_60

Correlations: (LPINV - Default model)

			Estimate
e17	<-->	e16	.628
e2_1	<-->	e2_5	-.235
e1_13	<-->	e1_12	.246
e17	<-->	e33	.155
e2_3	<-->	e2_6	-.180
e35	<-->	e2_3	-.154
e2_1	<-->	e2_2	.390

Variances: (LPINV - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.066	.023	2.807	.005	par_89
res4	.098	.026	3.795	***	par_90
res2	.065	.021	3.156	.002	par_91
res1	.252	.045	5.589	***	par_92
res5	.071	.020	3.545	***	par_93
e20	.320	.036	8.862	***	par_94
e21	.313	.042	7.501	***	par_95
e22	.282	.037	7.580	***	par_96
e17	.526	.051	10.300	***	par_97
e16	.611	.059	10.437	***	par_98
e27	.427	.048	8.983	***	par_99
e8	.311	.041	7.650	***	par_100
e9	.279	.036	7.808	***	par_101
e32	.395	.043	9.272	***	par_102
e34	.282	.040	7.010	***	par_103
e35	.332	.040	8.340	***	par_104
e33	.427	.050	8.493	***	par_105
e1_16	.281	.038	7.391	***	par_106
e1_15	.307	.037	8.347	***	par_107
e1_14	.269	.033	8.092	***	par_108
e1_13	.341	.038	9.072	***	par_109

	Estimate	S.E.	C.R.	P	Label
e1_12	.393	.041	9.486	***	par_110
e2_1	.452	.047	9.535	***	par_111
e2_2	.369	.040	9.341	***	par_112
e2_4	.268	.032	8.306	***	par_113
e2_5	.295	.035	8.334	***	par_114
e2_3	.231	.028	8.348	***	par_115
e2_6	.567	.057	9.864	***	par_116

Squared Multiple Correlations: (LPINV - Default model)

	Estimate
BReso	.676
BAware	.515
BAttent	.496
BAuthen	.761
BFunc	.777
P2_6	.261
P2_5	.584
P2_4	.603
P2_3	.574
P2_2	.434
P2_1	.327
P1_12	.362
P1_13	.453
P1_14	.590
P1_15	.563
P1_16	.649
item33	.442
item35	.458
item34	.578
item32	.331
item9	.526
item8	.540
item27	.392
item16	.042
item17	.147
item22	.614
item21	.620
item20	.477

Model Fit Summary

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	116	843.931	436	.000	1.936
Saturated model	552	.000	0		
Independence model	46	5999.893	506	.000	11.857

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.041	.878	.845	.693
Saturated model	.000	1.000		
Independence model	.240	.256	.189	.235

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.859	.837	.927	.914	.926
Saturated model	1.000	1.000	1.000	1.000	1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.862	.740	.798
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	407.931	329.491	494.162
Saturated model	.000	.000	.000
Independence model	5493.893	5247.750	5746.501

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.629	.788	.636	.954
Saturated model	.000	.000	.000	.000
Independence model	11.583	10.606	10.131	11.094

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.042	.038	.047	.998
Independence model	.145	.141	.148	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1075.931	1100.284		
Saturated model	1104.000	1219.890		

Model	AIC	BCC	BIC	CAIC
Independence model	6091.893	6101.550		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.077	1.926	2.244	2.124
Saturated model	2.131	2.131	2.131	2.355
Independence model	11.760	11.285	12.248	11.779

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	300	313
Independence model	50	52

Execution time summary

Minimization:	.016
Miscellaneous:	.858
Bootstrap:	.000
Total:	.874



จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

2. Factor loadings, variances, and covariances constrained equal

High product involvement, low product involvement

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\Invariance testing for consumers with LH SMEBE BINV BENG\Invariance of HL PINV AMOS
Baseline model with equality imposed.amw

Analysis Summary

Date and Time

Date: Monday, October 29, 2018

Time: 2:22:38 PM

Title

Invariance of hl pinv amos baseline model with equality imposed: Monday, October 29, 2018 2:22 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 298

Variable Summary (HighPINV)

Your model contains the following variables (HighPINV)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFuncnt

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (HighPINV)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (HighPINV)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	7	0	0	0	28
Unlabeled	2	0	28	0	0	30
Total	56	7	29	0	0	92



Group number 2 (Group number 2)
 Notes for Group (Group number 2)
 The model is recursive.
 Sample size = 222
 Variable Summary (LowPINV)
 Your model contains the following variables (LowPINV)

Observed, endogenous variables
 item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6
 Unobserved, endogenous variables
 BFunct
 BAuthen
 BAttent
 BAware
 BReso
 Unobserved, exogenous variables
 e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (LowPINV)
 Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (LowPINV)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	7	0	0	0	28
Unlabeled	2	0	28	0	0	30
Total	56	7	29	0	0	92

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 88

Degrees of freedom (552 - 88): 464

Result (Default model)

Minimum was achieved

Chi-square = 900.625

Degrees of freedom = 464

Probability level = .000



HighPINV (HighPINV - Default model)
 Estimates (HighPINV - Default model)
 Scalar Estimates (HighPINV - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (HighPINV - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.372	.031	12.058	***	pbcu
BAuthen <-- SMEBE	.512	.036	14.241	***	pbau
BFunc <-- SMEBE	.525	.033	15.824	***	pbpr
BReso <-- SMEBE	.392	.036	10.853	***	par_30
BAware <-- SMEBE	.534	.036	14.773	***	pbaw
item20 <-- BFunc	1.000				
item21 <-- BFunc	1.100	.069	15.988	***	p10
item22 <-- BFunc	1.073	.068	15.880	***	p9
item17 <-- BFunc	.623	.061	10.229	***	p8
item16 <-- BFunc	.476	.062	7.706	***	p7
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	1.073	.082	13.022	***	p13
item32 <-- BAttent	1.000				
item34 <-- BAttent	1.154	.094	12.292	***	p17
item35 <-- BAttent	1.162	.095	12.261	***	p16
item33 <-- BAttent	1.113	.098	11.410	***	p15
item9 <-- BAuthen	1.042	.080	12.959	***	p12
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	.959	.047	20.273	***	p5
P1_14 <-- BAware	.871	.048	18.125	***	p4
P1_13 <-- BAware	.771	.045	17.196	***	p3
P1_12 <-- BAware	.649	.047	13.924	***	p2
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	1.195	.081	14.745	***	p22
P2_3 <-- BReso	1.241	.095	13.054	***	p21
P2_4 <-- BReso	1.316	.112	11.793	***	par_29
P2_5 <-- BReso	1.428	.115	12.408	***	p20
P2_6 <-- BReso	1.122	.099	11.366	***	p19

Standardized Regression Weights: (HighPINV - Default model)

	Estimate
BAttent <-- SMEBE	.798
BAuthen <-- SMEBE	.947
BFunc <-- SMEBE	.871
BReso <-- SMEBE	.781
BAware <-- SMEBE	.708
item20 <-- BFunc	.735
item21 <-- BFunc	.781
item22 <-- BFunc	.761
item17 <-- BFunc	.492
item16 <-- BFunc	.374
item27 <-- BAuthen	.637
item8 <-- BAuthen	.690
item32 <-- BAttent	.623
item34 <-- BAttent	.703
item35 <-- BAttent	.698
item33 <-- BAttent	.630
item9 <-- BAuthen	.671
P1_16 <-- BAware	.837
P1_15 <-- BAware	.836
P1_14 <-- BAware	.727
P1_13 <-- BAware	.730
P1_12 <-- BAware	.605
P2_1 <-- BReso	.624
P2_2 <-- BReso	.689
P2_3 <-- BReso	.758
P2_4 <-- BReso	.757
P2_5 <-- BReso	.795
P2_6 <-- BReso	.660

Covariances: (HighPINV - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.287	.026	10.999	***	v_e1617
e2_1 <--> e2_2	.114	.021	5.464	***	v_e2_12_2
e2_3 <--> e2_6	-.103	.019	-5.586	***	v_e2_32_6
e2_1 <--> e2_5	-.081	.017	-4.705	***	v_e2_12_5
e1_13 <--> e1_12	.069	.018	3.759	***	v_e1_121_13
e17 <--> e33	-.009	.017	-.545	.586	v_e1733
e35 <--> e2_3	.000	.015	.016	.987	v_e352_3

Correlations: (HighPINV - Default model)

	Estimate
e17 <--> e16	.605
e2_1 <--> e2_2	.288
e2_3 <--> e2_6	-.300
e2_1 <--> e2_5	-.236

	Estimate
e1_13 <--> e1_12	.196
e17 <--> e33	-.022
e35 <--> e2_3	.001

Variances: (HighPINV - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.030	.019	1.605	.109	par_33
res4	.079	.017	4.667	***	par_34
res2	.088	.020	4.310	***	par_35
res1	.284	.038	7.538	***	par_36
res5	.099	.018	5.455	***	par_37
e20	.310	.031	9.890	***	par_38
e21	.282	.031	9.088	***	par_39
e22	.304	.032	9.474	***	par_40
e17	.441	.034	13.100	***	par_41
e16	.508	.038	13.440	***	par_42
e27	.428	.041	10.509	***	par_43
e8	.371	.038	9.860	***	par_44
e9	.388	.038	10.133	***	par_45
e32	.344	.033	10.520	***	par_46
e34	.297	.031	9.575	***	par_47
e35	.310	.032	9.650	***	par_48
e33	.410	.039	10.454	***	par_49
e1_16	.244	.028	8.607	***	par_50
e1_15	.226	.026	8.630	***	par_51
e1_14	.384	.037	10.509	***	par_52
e1_13	.297	.028	10.715	***	par_53
e1_12	.416	.036	11.569	***	par_54
e2_1	.395	.034	11.609	***	par_55
e2_2	.398	.035	11.517	***	par_56
e2_4	.325	.032	10.269	***	par_57
e2_5	.300	.031	9.615	***	par_58
e2_3	.287	.029	9.954	***	par_59
e2_6	.412	.038	10.838	***	par_60

LowPINV (LowPINV - Default model)

Estimates (LowPINV - Default model)

Scalar Estimates (LowPINV - Default model)

Maximum Likelihood Estimates

Regression Weights: (LowPINV - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.372	.031	12.058	***	pbcu
BAuthen <-- SMEBE	.512	.036	14.241	***	pbau
BFunc <-- SMEBE	.525	.033	15.824	***	pbpr
BReso <-- SMEBE	.375	.036	10.338	***	par_32
BAware <-- SMEBE	.534	.036	14.773	***	pbaw
item20 <-- BFunc	1.000				
item21 <-- BFunc	1.100	.069	15.988	***	p10
item22 <-- BFunc	1.073	.068	15.880	***	p9
item17 <-- BFunc	.623	.061	10.229	***	p8
item16 <-- BFunc	.476	.062	7.706	***	p7
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	1.073	.082	13.022	***	p13
item32 <-- BAttent	1.000				
item34 <-- BAttent	1.154	.094	12.292	***	p17
item35 <-- BAttent	1.162	.095	12.261	***	p16
item33 <-- BAttent	1.113	.098	11.410	***	p15
item9 <-- BAuthen	1.042	.080	12.959	***	p12
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	.959	.047	20.273	***	p5
P1_14 <-- BAware	.871	.048	18.125	***	p4
P1_13 <-- BAware	.771	.045	17.196	***	p3
P1_12 <-- BAware	.649	.047	13.924	***	p2
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	1.195	.081	14.745	***	p22
P2_3 <-- BReso	1.241	.095	13.054	***	p21
P2_4 <-- BReso	1.400	.128	10.894	***	par_31
P2_5 <-- BReso	1.428	.115	12.408	***	p20
P2_6 <-- BReso	1.122	.099	11.366	***	p19

Standardized Regression Weights: (LowPINV - Default model)

	Estimate
BAttent <-- SMEBE	.737
BAuthen <-- SMEBE	.902
BFunc <-- SMEBE	.886
BReso <-- SMEBE	.819
BAware <-- SMEBE	.739
item20 <-- BFunc	.731
item21 <-- BFunc	.742

	Estimate
item22 <-- BFunc	.757
item17 <-- BFunc	.475
item16 <-- BFunc	.355
item27 <-- BAuthen	.659
item8 <-- BAuthen	.734
item32 <-- BAttent	.636
item34 <-- BAttent	.719
item35 <-- BAttent	.719
item33 <-- BAttent	.646
item9 <-- BAuthen	.745
P1_16 <-- BAware	.802
P1_15 <-- BAware	.783
P1_14 <-- BAware	.770
P1_13 <-- BAware	.696
P1_12 <-- BAware	.604
P2_1 <-- BReso	.576
P2_2 <-- BReso	.686
P2_3 <-- BReso	.759
P2_4 <-- BReso	.771
P2_5 <-- BReso	.769
P2_6 <-- BReso	.563

Covariances: (LowPINV - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.287	.026	10.999	***	v_e1617
e2_1 <--> e2_2	.114	.021	5.464	***	v_e2_12_2
e2_3 <--> e2_6	-.103	.019	-5.586	***	v_e2_32_6
e2_1 <--> e2_5	-.081	.017	-4.705	***	v_e2_12_5
e1_13 <--> e1_12	.069	.018	3.759	***	v_e1_121_13
e17 <--> e33	-.009	.017	-.545	.586	v_e1733
e35 <--> e2_3	.000	.015	.016	.987	v_e352_3

Correlations: (LowPINV - Default model)

	Estimate
e17 <--> e16	.563
e2_1 <--> e2_2	.303
e2_3 <--> e2_6	-.282
e2_1 <--> e2_5	-.230
e1_13 <--> e1_12	.194
e17 <--> e33	-.020
e35 <--> e2_3	.001

Variances: (LowPINV - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.060	.022	2.683	.007	par_61
res4	.116	.024	4.788	***	par_62
res2	.076	.022	3.395	***	par_63
res1	.237	.038	6.190	***	par_64
res5	.069	.015	4.552	***	par_65
e20	.306	.036	8.535	***	par_66
e21	.347	.041	8.402	***	par_67
e22	.302	.037	8.183	***	par_68
e17	.468	.039	11.952	***	par_69
e16	.554	.045	12.246	***	par_70
e27	.419	.046	9.022	***	par_71
e8	.319	.039	8.176	***	par_72
e9	.282	.035	7.996	***	par_73
e32	.375	.042	9.020	***	par_74
e34	.317	.039	8.124	***	par_75
e35	.321	.040	8.117	***	par_76
e33	.440	.049	8.932	***	par_77
e1_16	.289	.036	7.929	***	par_78
e1_15	.302	.037	8.246	***	par_79
e1_14	.272	.032	8.412	***	par_80
e1_13	.331	.035	9.513	***	par_81
e1_12	.384	.038	10.029	***	par_82
e2_1	.421	.040	10.459	***	par_83
e2_2	.337	.033	10.068	***	par_84
e2_4	.280	.033	8.559	***	par_85
e2_5	.296	.034	8.668	***	par_86
e2_3	.237	.027	8.622	***	par_87
e2_6	.568	.057	9.887	***	par_88

Model Fit Summary

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	88	900.625	464	.000	1.941
Saturated model	552	.000	0		
Independence model	46	5999.893	506	.000	11.857

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.048	.870	.845	.731
Saturated model	.000	1.000		
Independence model	.240	.256	.189	.235

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.850	.836	.921	.913	.921
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.917	.779	.844
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	436.625	355.422	525.616
Saturated model	.000	.000	.000
Independence model	5493.893	5247.750	5746.501

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.739	.843	.686	1.015
Saturated model	.000	.000	.000	.000
Independence model	11.583	10.606	10.131	11.094

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.043	.038	.047	.999
Independence model	.145	.141	.148	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1076.625	1095.100		
Saturated model	1104.000	1219.890		
Independence model	6091.893	6101.550		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.078	1.922	2.250	2.114
Saturated model	2.131	2.131	2.131	2.355
Independence model	11.760	11.285	12.248	11.779

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	298	311
Independence model	50	52

Execution time summary

Minimization:	.010
Miscellaneous:	1.546
Bootstrap:	.000
Total:	1.556

3. Factor loadings constrained equal

High product involvement, low product involvement

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\Invariance testing for consumers with LH SMEBE BINV BENG\Invariance of HL PINV AMOS

factor loadings constrained equal.amw

Analysis Summary

Date and Time

Date: Monday, October 29, 2018

Time: 2:27:57 PM

Title

Invariance of hl pinv amos factor loadings constrained equal: Monday, October 29, 2018 2:27 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 298

Variable Summary (HighPINV)

Your model contains the following variables (HighPINV)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (HighPINV)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (HighPINV)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	0	0	0	0	21
Unlabeled	2	7	28	0	0	37



	Weights	Covariances	Variances	Means	Intercepts	Total
Total	56	7	29	0	0	92

Group number 2 (Group number 2)

Notes for Group (Group number 2)

The model is recursive.

Sample size = 222

Variable Summary (LowPINV)

Your model contains the following variables (LowPINV)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (LowPINV)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (LowPINV)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	0	0	0	0	21
Unlabeled	2	7	28	0	0	37
Total	56	7	29	0	0	92

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 95

Degrees of freedom (552 - 95): 457

Result (Default model)

Minimum was achieved

Chi-square = 869.477



Degrees of freedom = 457
 Probability level = .000
 HighPINV (HighPINV - Default model)
 Estimates (HighPINV - Default model)
 Scalar Estimates (HighPINV - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (HighPINV - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.372	.031	12.041	***	pbcu
BAuthen	<--	SMEBE	.511	.036	14.216	***	pbau
BFunc	<--	SMEBE	.526	.033	15.863	***	pbpr
BReso	<--	SMEBE	.391	.036	10.923	***	par_23
BAware	<--	SMEBE	.534	.036	14.788	***	pbaw
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.098	.069	16.003	***	p10
item22	<--	BFunc	1.073	.067	15.919	***	p9
item17	<--	BFunc	.635	.060	10.519	***	p8
item16	<--	BFunc	.488	.062	7.918	***	p7
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.073	.082	13.014	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.166	.095	12.329	***	p17
item35	<--	BAttent	1.158	.095	12.227	***	p16
item33	<--	BAttent	1.110	.097	11.429	***	p15
item9	<--	BAuthen	1.042	.080	12.955	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.959	.047	20.299	***	p5
P1_14	<--	BAware	.870	.048	18.113	***	p4
P1_13	<--	BAware	.770	.045	17.222	***	p3
P1_12	<--	BAware	.649	.047	13.950	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.194	.081	14.701	***	p22
P2_3	<--	BReso	1.239	.095	13.107	***	p21
P2_4	<--	BReso	1.309	.110	11.885	***	par_22
P2_5	<--	BReso	1.436	.115	12.521	***	p20
P2_6	<--	BReso	1.119	.098	11.392	***	p19

Standardized Regression Weights: (HighPINV - Default model)

			Estimate
BAttent	<--	SMEBE	.799
BAuthen	<--	SMEBE	.947
BFunc	<--	SMEBE	.873
BReso	<--	SMEBE	.777
BAware	<--	SMEBE	.707
item20	<--	BFunc	.735
item21	<--	BFunc	.778
item22	<--	BFunc	.761
item17	<--	BFunc	.515
item16	<--	BFunc	.395
item27	<--	BAuthen	.636
item8	<--	BAuthen	.689
item32	<--	BAttent	.621
item34	<--	BAttent	.706
item35	<--	BAttent	.694
item33	<--	BAttent	.626
item9	<--	BAuthen	.670
P1_16	<--	BAware	.836
P1_15	<--	BAware	.835
P1_14	<--	BAware	.727
P1_13	<--	BAware	.734
P1_12	<--	BAware	.609
P2_1	<--	BReso	.639
P2_2	<--	BReso	.701
P2_3	<--	BReso	.754
P2_4	<--	BReso	.755
P2_5	<--	BReso	.799
P2_6	<--	BReso	.656

Covariances: (HighPINV - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.244	.030	8.022	***	par_24
e2_1	<-->	e2_2	.077	.026	2.955	.003	par_25
e2_3	<-->	e2_6	-.122	.024	-5.028	***	par_26
e2_1	<-->	e2_5	-.076	.022	-3.390	***	par_27
e1_13	<-->	e1_12	.053	.023	2.266	.023	par_28
e17	<-->	e33	-.057	.022	-2.627	.009	par_29
e35	<-->	e2_3	.036	.021	1.718	.086	par_30

Correlations: (HighPINV - Default model)

			Estimate
e17	<-->	e16	.559
e2_1	<-->	e2_2	.207

	Estimate
e2_3 <--> e2_6	-.346
e2_1 <--> e2_5	-.230
e1_13 <--> e1_12	.153
e17 <--> e33	-.138
e35 <--> e2_3	.119

Variances: (HighPINV - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.030	.019	1.615	.106	par_40
res4	.078	.017	4.661	***	par_41
res2	.087	.020	4.266	***	par_42
res1	.285	.038	7.546	***	par_43
res5	.100	.018	5.556	***	par_44
e20	.309	.031	9.903	***	par_45
e21	.285	.031	9.166	***	par_46
e22	.305	.032	9.509	***	par_47
e17	.406	.035	11.541	***	par_48
e16	.468	.040	11.822	***	par_49
e27	.428	.041	10.510	***	par_50
e8	.371	.038	9.865	***	par_51
e9	.388	.038	10.133	***	par_52
e32	.345	.033	10.538	***	par_53
e34	.296	.031	9.535	***	par_54
e35	.313	.032	9.719	***	par_55
e33	.413	.039	10.482	***	par_56
e1_16	.245	.028	8.641	***	par_57
e1_15	.228	.026	8.674	***	par_58
e1_14	.385	.037	10.524	***	par_59
e1_13	.290	.028	10.352	***	par_60
e1_12	.407	.036	11.201	***	par_61
e2_1	.368	.034	10.830	***	par_62
e2_2	.373	.035	10.768	***	par_63
e2_4	.328	.032	10.363	***	par_64
e2_5	.296	.031	9.539	***	par_65
e2_3	.295	.030	10.007	***	par_66
e2_6	.420	.039	10.840	***	par_67

Squared Multiple Correlations: (HighPINV - Default model)

	Estimate
BReso	.604
BAware	.500
BAttent	.638
BAuthen	.897
BFunc	.761
P2_6	.430
P2_5	.638
P2_4	.570
P2_3	.569
P2_2	.492
P2_1	.408
P1_12	.371
P1_13	.539
P1_14	.529
P1_15	.697
P1_16	.699
item33	.392
item35	.481
item34	.498
item32	.385
item9	.449
item8	.475
item27	.405
item16	.156
item17	.265
item22	.578
item21	.606
item20	.541

LowPINV (LowPINV - Default model)

Estimates (LowPINV - Default model)

Scalar Estimates (LowPINV - Default model)

Maximum Likelihood Estimates

Regression Weights: (LowPINV - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.372	.031	12.041	***	pbcu
BAuthen <-- SMEBE	.511	.036	14.216	***	pbau
BFunc <-- SMEBE	.526	.033	15.863	***	pbpr
BReso <-- SMEBE	.374	.036	10.320	***	par_32
BAware <-- SMEBE	.534	.036	14.788	***	pbaw

			Estimate	S.E.	C.R.	P	Label
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.098	.069	16.003	***	p10
item22	<--	BFunc	1.073	.067	15.919	***	p9
item17	<--	BFunc	.635	.060	10.519	***	p8
item16	<--	BFunc	.488	.062	7.918	***	p7
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.073	.082	13.014	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.166	.095	12.329	***	p17
item35	<--	BAttent	1.158	.095	12.227	***	p16
item33	<--	BAttent	1.110	.097	11.429	***	p15
item9	<--	BAuthen	1.042	.080	12.955	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.959	.047	20.299	***	p5
P1_14	<--	BAware	.870	.048	18.113	***	p4
P1_13	<--	BAware	.770	.045	17.222	***	p3
P1_12	<--	BAware	.649	.047	13.950	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.194	.081	14.701	***	p22
P2_3	<--	BReso	1.239	.095	13.107	***	p21
P2_4	<--	BReso	1.436	.132	10.878	***	par_31
P2_5	<--	BReso	1.436	.115	12.521	***	p20
P2_6	<--	BReso	1.119	.098	11.392	***	p19

Standardized Regression Weights: (LowPINV - Default model)

			Estimate
BAttent	<--	SMEBE	.738
BAuthen	<--	SMEBE	.898
BFunc	<--	SMEBE	.885
BReso	<--	SMEBE	.827
BAware	<--	SMEBE	.740
item20	<--	BFunc	.732
item21	<--	BFunc	.743
item22	<--	BFunc	.759
item17	<--	BFunc	.465
item16	<--	BFunc	.348
item27	<--	BAuthen	.660
item8	<--	BAuthen	.734
item32	<--	BAttent	.634
item34	<--	BAttent	.726
item35	<--	BAttent	.716
item33	<--	BAttent	.644
item9	<--	BAuthen	.746
P1_16	<--	BAware	.803
P1_15	<--	BAware	.785
P1_14	<--	BAware	.769
P1_13	<--	BAware	.689
P1_12	<--	BAware	.597
P2_1	<--	BReso	.556
P2_2	<--	BReso	.665
P2_3	<--	BReso	.758
P2_4	<--	BReso	.780
P2_5	<--	BReso	.766
P2_6	<--	BReso	.560

Covariances: (LowPINV - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.350	.046	7.621	***	par_33
e2_1	<-->	e2_2	.162	.034	4.824	***	par_34
e2_3	<-->	e2_6	-.071	.028	-2.535	.011	par_35
e2_1	<-->	e2_5	-.082	.026	-3.136	.002	par_36
e1_13	<-->	e1_12	.092	.029	3.155	.002	par_37
e17	<-->	e33	.071	.028	2.553	.011	par_38
e35	<-->	e2_3	-.042	.023	-1.861	.063	par_39

Correlations: (LowPINV - Default model)

			Estimate
e17	<-->	e16	.622
e2_1	<-->	e2_2	.396
e2_3	<-->	e2_6	-.196
e2_1	<-->	e2_5	-.221
e1_13	<-->	e1_12	.250
e17	<-->	e33	.148
e35	<-->	e2_3	-.154

Variances: (LowPINV - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.063	.023	2.784	.005	par_68
res4	.116	.024	4.785	***	par_69
res2	.076	.022	3.422	***	par_70

	Estimate	S.E.	C.R.	P	Label
res1	.236	.038	6.170	***	par_71
res5	.065	.015	4.382	***	par_72
e20	.306	.036	8.525	***	par_73
e21	.345	.041	8.387	***	par_74
e22	.300	.037	8.156	***	par_75
e17	.517	.051	10.145	***	par_76
e16	.611	.059	10.285	***	par_77
e27	.419	.047	9.008	***	par_78
e8	.319	.039	8.156	***	par_79
e9	.281	.035	7.972	***	par_80
e32	.378	.042	9.058	***	par_81
e34	.309	.038	8.049	***	par_82
e35	.324	.040	8.175	***	par_83
e33	.442	.049	8.975	***	par_84
e1_16	.287	.036	7.881	***	par_85
e1_15	.299	.036	8.199	***	par_86
e1_14	.272	.032	8.402	***	par_87
e1_13	.342	.037	9.175	***	par_88
e1_12	.396	.041	9.653	***	par_89
e2_1	.457	.047	9.747	***	par_90
e2_2	.368	.039	9.446	***	par_91
e2_4	.271	.033	8.337	***	par_92
e2_5	.297	.035	8.564	***	par_93
e2_3	.232	.027	8.510	***	par_94
e2_6	.560	.057	9.773	***	par_95

Model Fit Summary
CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	95	869.477	457	.000	1.903
Saturated model	552	.000	0		
Independence model	46	5999.893	506	.000	11.857

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.048	.875	.849	.724
Saturated model	.000	1.000		
Independence model	.240	.256	.189	.235

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.855	.840	.926	.917	.925
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.903	.772	.835
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	412.477	333.060	499.697
Saturated model	.000	.000	.000
Independence model	5493.893	5247.750	5746.501

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.679	.796	.643	.965
Saturated model	.000	.000	.000	.000
Independence model	11.583	10.606	10.131	11.094

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.042	.038	.046	.999
Independence model	.145	.141	.148	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1059.477	1079.422		
Saturated model	1104.000	1219.890		
Independence model	6091.893	6101.550		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.045	1.892	2.214	2.084
Saturated model	2.131	2.131	2.131	2.355
Independence model	11.760	11.285	12.248	11.779

HOELTER

Model	HOELTER	HOELTER
Default model	.304	.317
Independence model	.50	.52

Execution time summary

Minimization: .014
Miscellaneous: .727
Bootstrap: .000
Total: .741



จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

1. Hypothesized model (Model 1)

High brand engagement, low brand engagement

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\Invariance testing for consumers with LH SMEBE BINV BENG\Invariance of HL BENG AMOS
 Baseline model with no equality imposed.amw

Analysis Summary

Date and Time

Date: Thursday, November 1, 2018

Time: 2:08:50 AM

Title

Invariance of hl beng amos baseline model with no equality imposed: Thursday, November 1, 2018 2:08 AM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 295

Variable Summary (HBENG)

Your model contains the following variables (HBENG)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFuncnt

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (HBENG)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (HBENG)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0
Unlabeled	23	6	28	0	0	57
Total	56	6	29	0	0	91



Assessment of normality (HBENG)

Variable	min	max	skew	c.r.	kurtosis	c.r.
P2_6	1.000	5.000	-.362	-2.537	.547	1.916
P2_5	1.000	5.000	-.143	-1.004	.095	.332
P2_4	1.000	5.000	-.247	-1.735	.123	.431
P2_3	2.000	5.000	.150	1.052	-.371	-1.300
P2_2	2.000	5.000	.158	1.105	-.508	-1.781
P2_1	2.000	5.000	-.246	-1.726	.074	.260
P1_12	2.000	5.000	.243	1.706	-.577	-2.023
P1_13	2.000	5.000	.040	.279	-.340	-1.192
P1_14	1.000	5.000	-.124	-.870	-.010	-.035
P1_15	1.000	5.000	-.410	-2.876	.125	.437
P1_16	1.000	5.000	-.404	-2.832	.301	1.054
item33	1.000	5.000	-.418	-2.931	.673	2.359
item35	1.000	5.000	-.119	-.837	.052	.183
item34	1.000	6.000	-.190	-1.332	.762	2.671
item32	2.000	5.000	-.069	-.482	-.240	-.842
item9	2.000	5.000	-.272	-1.907	-.181	-.634
item8	1.000	5.000	-.252	-1.766	.260	.910
item27	1.000	5.000	-.325	-2.280	.244	.856
item16	3.000	5.000	.216	1.513	-.784	-2.749
item17	2.000	5.000	-.027	-.191	-.277	-.972
item22	1.000	5.000	-.107	-.753	-.130	-.455
item21	2.000	5.000	-.205	-1.437	-.180	-.632
item20	2.000	5.000	.062	.435	-.393	-1.379
Multivariate				79.883		20.230

Observations farthest from the centroid (Mahalanobis distance) (HBENG)

Observation number	Mahalanobis d-squared	p1	p2
249	65.525	.000	.002
286	65.185	.000	.000
26	63.110	.000	.000
197	59.058	.000	.000
22	56.796	.000	.000
239	55.285	.000	.000
277	52.492	.000	.000
236	51.137	.001	.000
295	49.110	.001	.000
25	48.890	.001	.000
50	47.474	.002	.000
194	46.393	.003	.000
35	45.872	.003	.000
33	45.384	.004	.000
196	44.689	.004	.000
281	44.194	.005	.000
10	43.369	.006	.000
20	42.898	.007	.000
21	41.872	.009	.000
214	41.692	.010	.000
198	40.932	.012	.000
37	40.904	.012	.000
13	40.524	.013	.000
262	40.029	.015	.000
61	39.907	.016	.000
291	39.840	.016	.000
166	39.703	.017	.000
193	39.630	.017	.000
165	39.461	.018	.000
29	38.695	.021	.000
24	38.527	.022	.000
195	38.319	.024	.000
6	37.712	.027	.000
16	37.656	.028	.000
267	37.579	.028	.000
92	37.457	.029	.000
268	37.304	.030	.000
242	37.108	.032	.000
9	36.946	.033	.000
5	36.643	.035	.000
63	36.436	.037	.000
32	36.235	.039	.000
186	35.961	.042	.000
181	35.955	.042	.000
200	35.426	.047	.000
11	35.124	.051	.000
8	34.934	.053	.000
54	34.848	.054	.000
23	34.586	.057	.000
47	33.408	.074	.000

Observation number	Mahalanobis d-squared	p1	p2
183	33.097	.079	.000
15	33.044	.080	.000
275	32.955	.082	.000
169	32.927	.082	.000
245	32.714	.086	.000
201	32.696	.087	.000
174	32.581	.089	.000
40	32.416	.092	.000
288	31.354	.114	.000
203	31.060	.121	.000
173	30.799	.128	.000
287	30.769	.129	.000
271	30.620	.132	.000
272	30.620	.132	.000
280	29.951	.151	.001
178	29.923	.152	.001
17	29.746	.157	.001
250	29.421	.167	.003
180	29.367	.168	.002
7	29.353	.169	.002
36	29.284	.171	.001
185	29.110	.177	.002
48	28.352	.203	.035
90	27.910	.219	.108
164	27.794	.224	.118
167	27.659	.229	.136
273	27.362	.241	.228
28	26.931	.259	.436
107	26.916	.260	.395
3	26.671	.270	.507
1	26.339	.285	.676
260	25.262	.337	.987
175	25.214	.339	.986
41	24.936	.354	.995
247	24.704	.366	.998
168	24.689	.367	.997
179	24.677	.367	.996
66	24.660	.368	.995
292	24.579	.372	.995
263	24.535	.375	.995
31	24.507	.376	.994
85	24.398	.382	.995
279	24.293	.388	.996
59	24.245	.390	.996
19	23.527	.430	1.000
34	23.506	.432	1.000
229	23.445	.435	1.000
261	23.417	.437	1.000
149	23.402	.438	1.000
294	23.367	.439	1.000

Group number 2 (Group number 2)

Notes for Group (Group number 2)

The model is recursive.

Sample size = 215

Variable Summary (LBENG)

Your model contains the following variables (LBENG)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

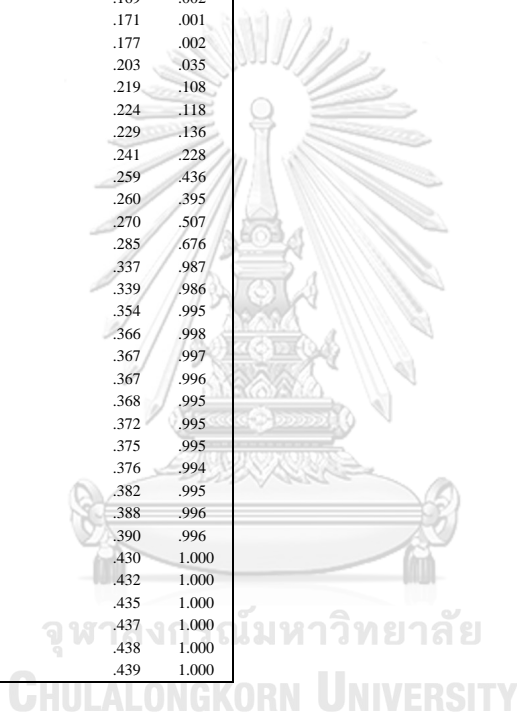
P2_5

P2_6

Unobserved, endogenous variables

BFunc

BAuthen



BAttent
 BAware
 BReso
 Unobserved, exogenous variables
 e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (LBENG)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (LBENG)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	0	0	0	0	0	0
Unlabeled	23	6	28	0	0	57
Total	56	6	29	0	0	91

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 114

Degrees of freedom (552 - 114): 438

Result (Default model)

Minimum was achieved

Chi-square = 803.851

Degrees of freedom = 438

Probability level = .000

HBENG (HBENG - Default model)

Estimates (HBENG - Default model)

Scalar Estimates (HBENG - Default model)

Maximum Likelihood Estimates

Regression Weights: (HBENG - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<---	SMEBE	.330	.038	8.686	***	par_9
BAuthen	<---	SMEBE	.480	.043	11.148	***	par_10
BFunct	<---	SMEBE	.512	.040	12.958	***	par_11
BReso	<---	SMEBE	.294	.037	7.952	***	par_21
BAware	<---	SMEBE	.503	.044	11.553	***	par_23
item20	<---	BFunct	1.000				
item21	<---	BFunct	.999	.080	12.427	***	par_1
item22	<---	BFunct	.961	.085	11.368	***	par_2
item17	<---	BFunct	.587	.076	7.691	***	par_3
item16	<---	BFunct	.465	.075	6.241	***	par_4
item27	<---	BAuthen	1.000				
item8	<---	BAuthen	1.042	.105	9.897	***	par_5
item32	<---	BAttent	1.000				
item34	<---	BAttent	1.065	.128	8.317	***	par_6
item35	<---	BAttent	1.293	.146	8.879	***	par_7
item33	<---	BAttent	.987	.127	7.792	***	par_8
item9	<---	BAuthen	1.047	.105	10.015	***	par_12
P1_16	<---	BAware	1.000				
P1_15	<---	BAware	.921	.070	13.187	***	par_13
P1_14	<---	BAware	.775	.066	11.820	***	par_14
P1_13	<---	BAware	.667	.060	11.094	***	par_15
P1_12	<---	BAware	.565	.062	9.136	***	par_16
P2_1	<---	BReso	1.000				

			Estimate	S.E.	C.R.	P	Label
P2_2	<--	BReso	1.159	.136	8.491	***	par_17
P2_3	<--	BReso	1.389	.182	7.647	***	par_18
P2_4	<--	BReso	1.414	.187	7.561	***	par_19
P2_5	<--	BReso	1.627	.218	7.457	***	par_20
P2_6	<--	BReso	1.046	.163	6.430	***	par_22

Standardized Regression Weights: (HBENG - Default model)

			Estimate
BAttent	<--	SMEBE	.761
BAuthen	<--	SMEBE	.945
BFunc	<--	SMEBE	.920
BReso	<--	SMEBE	.840
BAware	<--	SMEBE	.766
item20	<--	BFunc	.754
item21	<--	BFunc	.760
item22	<--	BFunc	.695
item17	<--	BFunc	.476
item16	<--	BFunc	.389
item27	<--	BAuthen	.654
item8	<--	BAuthen	.696
item32	<--	BAttent	.612
item34	<--	BAttent	.646
item35	<--	BAttent	.721
item33	<--	BAttent	.588
item9	<--	BAuthen	.706
P1_16	<--	BAware	.801
P1_15	<--	BAware	.762
P1_14	<--	BAware	.689
P1_13	<--	BAware	.653
P1_12	<--	BAware	.548
P2_1	<--	BReso	.517
P2_2	<--	BReso	.595
P2_3	<--	BReso	.686
P2_4	<--	BReso	.670
P2_5	<--	BReso	.735
P2_6	<--	BReso	.505

Covariances: (HBENG - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.152	.024	6.206	***	par_24
e2_1	<-->	e2_2	.095	.022	4.244	***	par_25
e27	<-->	e1_14	.052	.021	2.456	.014	par_26
e2_1	<-->	e2_5	-.054	.020	-2.672	.008	par_27
e1_13	<-->	e2_5	-.027	.018	-1.493	.135	par_28
e1_15	<-->	e2_6	.028	.021	1.299	.194	par_29

Correlations: (HBENG - Default model)

			Estimate
e17	<-->	e16	.410
e2_1	<-->	e2_2	.299
e27	<-->	e1_14	.165
e2_1	<-->	e2_5	-.176
e1_13	<-->	e2_5	-.102
e1_15	<-->	e2_6	.087

Variances: (HBENG - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.027	.015	1.779	.075	par_59
res4	.079	.019	4.292	***	par_60
res2	.048	.016	2.926	.003	par_61
res1	.178	.029	6.059	***	par_62
res5	.036	.010	3.479	***	par_63
e20	.236	.025	9.462	***	par_64
e21	.227	.024	9.356	***	par_65
e22	.306	.030	10.259	***	par_66
e17	.364	.031	11.547	***	par_67
e16	.376	.032	11.768	***	par_68
e27	.345	.033	10.369	***	par_69
e8	.299	.030	9.859	***	par_70
e9	.284	.029	9.698	***	par_71
e32	.316	.031	10.226	***	par_72
e34	.299	.030	9.841	***	par_73
e35	.292	.034	8.654	***	par_74
e33	.348	.033	10.448	***	par_75
e1_16	.242	.028	8.562	***	par_76
e1_15	.264	.028	9.353	***	par_77
e1_14	.286	.028	10.335	***	par_78
e1_13	.259	.024	10.651	***	par_79
e1_12	.321	.028	11.284	***	par_80
e2_1	.336	.031	10.965	***	par_81

	Estimate	S.E.	C.R.	P	Label
e2_2	.301	.028	10.847	***	par_82
e2_4	.300	.029	10.331	***	par_83
e2_5	.276	.030	9.326	***	par_84
e2_3	.266	.026	10.163	***	par_85
e2_6	.392	.034	11.383	***	par_86

LBENG (LBENG - Default model)
 Estimates (LBENG - Default model)
 Scalar Estimates (LBENG - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (LBENG - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.293	.047	6.229	***	par_38
BAuthen <-- SMEBE	.439	.061	7.237	***	par_39
BFunc <-- SMEBE	.489	.054	9.020	***	par_40
BReso <-- SMEBE	.329	.051	6.511	***	par_50
BAware <-- SMEBE	.519	.065	7.948	***	par_52
item20 <-- BFunc	1.000				
item21 <-- BFunc	1.160	.116	10.017	***	par_30
item22 <-- BFunc	1.188	.114	10.402	***	par_31
item17 <-- BFunc	.791	.105	7.501	***	par_32
item16 <-- BFunc	.616	.113	5.465	***	par_33
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	1.271	.184	6.916	***	par_34
item32 <-- BAttent	1.000				
item34 <-- BAttent	1.322	.197	6.713	***	par_35
item35 <-- BAttent	1.322	.195	6.769	***	par_36
item33 <-- BAttent	1.302	.213	6.114	***	par_37
item9 <-- BAuthen	1.154	.170	6.769	***	par_41
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	.989	.067	14.870	***	par_42
P1_14 <-- BAware	.853	.068	12.629	***	par_43
P1_13 <-- BAware	.835	.067	12.535	***	par_44
P1_12 <-- BAware	.663	.068	9.815	***	par_45
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	1.005	.127	7.924	***	par_46
P2_3 <-- BReso	1.253	.170	7.383	***	par_47
P2_4 <-- BReso	1.464	.190	7.688	***	par_48
P2_5 <-- BReso	1.528	.210	7.281	***	par_49
P2_6 <-- BReso	.982	.163	6.014	***	par_51

Standardized Regression Weights: (LBENG - Default model)

	Estimate
BAttent <-- SMEBE	.700
BAuthen <-- SMEBE	.879
BFunc <-- SMEBE	.808
BReso <-- SMEBE	.684
BAware <-- SMEBE	.618
item20 <-- BFunc	.725
item21 <-- BFunc	.762
item22 <-- BFunc	.800
item17 <-- BFunc	.560
item16 <-- BFunc	.408
item27 <-- BAuthen	.565
item8 <-- BAuthen	.707
item32 <-- BAttent	.547
item34 <-- BAttent	.706
item35 <-- BAttent	.721
item33 <-- BAttent	.593
item9 <-- BAuthen	.676
P1_16 <-- BAware	.839
P1_15 <-- BAware	.854
P1_14 <-- BAware	.762
P1_13 <-- BAware	.757
P1_12 <-- BAware	.630
P2_1 <-- BReso	.559
P2_2 <-- BReso	.591
P2_3 <-- BReso	.729
P2_4 <-- BReso	.794
P2_5 <-- BReso	.820
P2_6 <-- BReso	.515

Covariances: (LBENG - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.419	.053	7.907	***	par_53
e2_1 <--> e2_2	.150	.039	3.821	***	par_54
e27 <--> e1_14	-.056	.035	-1.621	.105	par_55
e2_1 <--> e2_5	-.092	.030	-3.040	.002	par_56
e1_13 <--> e2_5	.045	.027	1.675	.094	par_57
e1_15 <--> e2_6	-.110	.033	-3.306	***	par_58

Correlations: (LBENG - Default model)

	Estimate
e17 <-> e16	.708
e2_1 <-> e2_2	.318
e27 <-> e1_14	-.126
e2_1 <-> e2_5	-.252
e1_13 <-> e2_5	.145
e1_15 <-> e2_6	-.278

Variances: (LBENG - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.057	.026	2.152	.031	par_87
res4	.089	.026	3.409	***	par_88
res2	.127	.033	3.886	***	par_89
res1	.436	.068	6.390	***	par_90
res5	.123	.033	3.716	***	par_91
e20	.331	.040	8.257	***	par_92
e21	.357	.046	7.720	***	par_93
e22	.291	.042	6.970	***	par_94
e17	.501	.053	9.502	***	par_95
e16	.696	.070	9.964	***	par_96
e27	.532	.059	8.982	***	par_97
e8	.404	.055	7.337	***	par_98
e9	.396	.050	7.843	***	par_99
e32	.410	.045	9.118	***	par_100
e34	.308	.041	7.415	***	par_101
e35	.283	.039	7.161	***	par_102
e33	.549	.063	8.780	***	par_103
e1_16	.296	.039	7.536	***	par_104
e1_15	.256	.036	7.111	***	par_105
e1_14	.371	.042	8.736	***	par_106
e1_13	.366	.042	8.789	***	par_107
e1_12	.471	.049	9.597	***	par_108
e2_1	.509	.055	9.215	***	par_109
e2_2	.435	.046	9.469	***	par_110
e2_4	.291	.038	7.705	***	par_111
e2_5	.264	.038	6.891	***	par_112
e2_3	.321	.037	8.644	***	par_113
e2_6	.617	.063	9.820	***	par_114

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	114	803.851	438	.000	1.835
Saturated model	552	.000	0		
Independence model	46	5235.760	506	.000	10.347

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.043	.881	.850	.699
Saturated model	.000	1.000		
Independence model	.211	.295	.231	.271

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.846	.823	.924	.911	.923
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.866	.733	.799
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	365.851	290.176	449.352
Saturated model	.000	.000	.000
Independence model	4729.760	4500.803	4965.210

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.582	.720	.571	.885
Saturated model	.000	.000	.000	.000
Independence model	10.307	9.311	8.860	9.774

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.041	.036	.045	1.000
Independence model	.136	.132	.139	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1031.851	1056.412		

Model	AIC	BCC	BIC	CAIC
Saturated model	1104.000	1222.928		
Independence model	5327.760	5337.670		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.031	1.882	2.196	2.080
Saturated model	2.173	2.173	2.173	2.407
Independence model	10.488	10.037	10.951	10.507

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	310	324
Independence model	56	58

Execution time summary

Minimization:	.026
Miscellaneous:	.959
Bootstrap:	.000
Total:	.985



จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

2. Factor loadings, variances, and covariances constrained equal

High brand engagement, low brand engagement

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\Invariance testing for consumers with LH SMEBE BINV BENG\Invariance of HL BENG AMOS

Baseline model with equality imposed.amw

Analysis Summary

Date and Time

Date: Monday, October 29, 2018

Time: 3:33:43 PM

Title

Invariance of hl beng amos baseline model with equality imposed: Monday, October 29, 2018 3:33 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 295

Variable Summary (HighBENG)

Your model contains the following variables (HighBENG)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFuncnt

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (HighBENG)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (HighBENG)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	6	0	0	0	27
Unlabeled	2	0	28	0	0	30
Total	56	6	29	0	0	91



Group number 2 (Group number 2)
 Notes for Group (Group number 2)
 The model is recursive.
 Sample size = 215
 Variable Summary (LowBENG)
 Your model contains the following variables (LowBENG)

Observed, endogenous variables
 item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6
 Unobserved, endogenous variables
 BFunct
 BAuthen
 BAttent
 BAware
 BReso
 Unobserved, exogenous variables
 e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (LowBENG)
 Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (LowBENG)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	6	0	0	0	27
Unlabeled	2	0	28	0	0	30
Total	56	6	29	0	0	91

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 87

Degrees of freedom (552 - 87): 465

Result (Default model)

Minimum was achieved

Chi-square = 873.585

Degrees of freedom = 465

Probability level = .000



HighBENG (HighBENG - Default model)
 Estimates (HighBENG - Default model)
 Scalar Estimates (HighBENG - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (HighBENG - Default model)

			Estimate	S.E.	C.R.	P	Label
BAttent	<--	SMEBE	.320	.030	10.763	***	pbcu
BAuthen	<--	SMEBE	.474	.035	13.481	***	pbau
BFunc	<--	SMEBE	.497	.032	15.768	***	pbpr
BReso	<--	SMEBE	.307	.031	9.982	***	par_29
BAware	<--	SMEBE	.493	.035	14.128	***	pbaw
item20	<--	BFunc	1.000				
item21	<--	BFunc	1.060	.067	15.847	***	p10
item22	<--	BFunc	1.052	.068	15.425	***	p9
item17	<--	BFunc	.697	.063	11.114	***	p8
item16	<--	BFunc	.547	.064	8.537	***	p7
item27	<--	BAuthen	1.000				
item8	<--	BAuthen	1.108	.091	12.229	***	p13
item32	<--	BAttent	1.000				
item34	<--	BAttent	1.156	.107	10.778	***	p17
item35	<--	BAttent	1.287	.115	11.153	***	p16
item33	<--	BAttent	1.090	.110	9.932	***	p15
item9	<--	BAuthen	1.067	.088	12.135	***	p12
P1_16	<--	BAware	1.000				
P1_15	<--	BAware	.967	.049	19.791	***	p5
P1_14	<--	BAware	.820	.048	17.164	***	p4
P1_13	<--	BAware	.753	.046	16.547	***	p3
P1_12	<--	BAware	.616	.046	13.326	***	p2
P2_1	<--	BReso	1.000				
P2_2	<--	BReso	1.091	.094	11.621	***	p22
P2_3	<--	BReso	1.338	.125	10.717	***	p21
P2_4	<--	BReso	1.374	.150	9.168	***	par_28
P2_5	<--	BReso	1.576	.151	10.451	***	p20
P2_6	<--	BReso	1.011	.115	8.753	***	p19

Standardized Regression Weights: (HighBENG - Default model)

			Estimate
BAttent	<--	SMEBE	.761
BAuthen	<--	SMEBE	.949
BFunc	<--	SMEBE	.927
BReso	<--	SMEBE	.840
BAware	<--	SMEBE	.776
item20	<--	BFunc	.735
item21	<--	BFunc	.768
item22	<--	BFunc	.718
item17	<--	BFunc	.483
item16	<--	BFunc	.393
item27	<--	BAuthen	.649
item8	<--	BAuthen	.714
item32	<--	BAttent	.597
item34	<--	BAttent	.670
item35	<--	BAttent	.703
item33	<--	BAttent	.619
item9	<--	BAuthen	.705
P1_16	<--	BAware	.782
P1_15	<--	BAware	.764
P1_14	<--	BAware	.704
P1_13	<--	BAware	.690
P1_12	<--	BAware	.570
P2_1	<--	BReso	.526
P2_2	<--	BReso	.580
P2_3	<--	BReso	.689
P2_4	<--	BReso	.677
P2_5	<--	BReso	.737
P2_6	<--	BReso	.507

Covariances: (HighBENG - Default model)

			Estimate	S.E.	C.R.	P	Label
e17	<-->	e16	.262	.025	10.479	***	v_e1617
e2_1	<-->	e2_2	.112	.020	5.674	***	v_e2_12_2
e2_1	<-->	e2_5	-.067	.017	-3.964	***	v_e2_12_5
e27	<-->	e1_14	.025	.018	1.394	.163	v_e271_14
e1_13	<-->	e2_5	-.004	.015	-.282	.778	v_e1_132_5
e1_15	<-->	e2_6	-.017	.018	-.947	.344	v_e1_152_6

Correlations: (HighBENG - Default model)

			Estimate
e17	<-->	e16	.563
e2_1	<-->	e2_2	.338
e2_1	<-->	e2_5	-.215
e27	<-->	e1_14	.080
e1_13	<-->	e2_5	-.016

	Estimate
e1_15 <--> e2_6	-.052

Variances: (HighBENG - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.025	.014	1.745	.081	par_32
res4	.075	.016	4.703	***	par_33
res2	.041	.014	2.846	.004	par_34
res1	.161	.025	6.446	***	par_35
res5	.039	.010	4.091	***	par_36
e20	.245	.025	9.939	***	par_37
e21	.225	.024	9.408	***	par_38
e22	.300	.030	10.167	***	par_39
e17	.458	.035	12.983	***	par_40
e16	.472	.036	13.220	***	par_41
e27	.343	.032	10.557	***	par_42
e8	.295	.030	9.747	***	par_43
e9	.288	.029	9.883	***	par_44
e32	.320	.030	10.521	***	par_45
e34	.292	.030	9.749	***	par_46
e35	.302	.033	9.261	***	par_47
e33	.339	.033	10.306	***	par_48
e1_16	.257	.028	9.285	***	par_49
e1_15	.269	.028	9.599	***	par_50
e1_14	.277	.027	10.379	***	par_51
e1_13	.253	.024	10.489	***	par_52
e1_12	.318	.028	11.262	***	par_53
e2_1	.349	.030	11.529	***	par_54
e2_2	.314	.027	11.514	***	par_55
e2_4	.299	.029	10.302	***	par_56
e2_5	.279	.029	9.534	***	par_57
e2_3	.265	.026	10.299	***	par_58
e2_6	.396	.035	11.437	***	par_59

LowBENG (LowBENG - Default model)

Estimates (LowBENG - Default model)

Scalar Estimates (LowBENG - Default model)

Maximum Likelihood Estimates

Regression Weights: (LowBENG - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.320	.030	10.763	***	pbcu
BAuthen <-- SMEBE	.474	.035	13.481	***	pbau
BFunct <-- SMEBE	.497	.032	15.768	***	pbpr
BReso <-- SMEBE	.308	.041	7.538	***	par_31
BAware <-- SMEBE	.493	.035	14.128	***	pbaw
item20 <-- BFunc	1.000				
item21 <-- BFunc	1.060	.067	15.847	***	p10
item22 <-- BFunc	1.052	.068	15.425	***	p9
item17 <-- BFunc	.697	.063	11.114	***	p8
item16 <-- BFunc	.547	.064	8.537	***	p7
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	1.108	.091	12.229	***	p13
item32 <-- BAttent	1.000				
item34 <-- BAttent	1.156	.107	10.778	***	p17
item35 <-- BAttent	1.287	.115	11.153	***	p16
item33 <-- BAttent	1.090	.110	9.932	***	p15
item9 <-- BAuthen	1.067	.088	12.135	***	p12
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	.967	.049	19.791	***	p5
P1_14 <-- BAware	.820	.048	17.164	***	p4
P1_13 <-- BAware	.753	.046	16.547	***	p3
P1_12 <-- BAware	.616	.046	13.326	***	p2
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	1.091	.094	11.621	***	p22
P2_3 <-- BReso	1.338	.125	10.717	***	p21
P2_4 <-- BReso	1.535	.158	9.701	***	par_30
P2_5 <-- BReso	1.576	.151	10.451	***	p20
P2_6 <-- BReso	1.011	.115	8.753	***	p19

Standardized Regression Weights: (LowBENG - Default model)

	Estimate
BAttent <-- SMEBE	.720
BAuthen <-- SMEBE	.890
BFunct <-- SMEBE	.781
BReso <-- SMEBE	.674
BAware <-- SMEBE	.577
item20 <-- BFunc	.751
item21 <-- BFunc	.743
item22 <-- BFunc	.766
item17 <-- BFunc	.583

		Estimate
item16	<-- BFunc	.429
item27	<-- BAuthen	.592
item8	<-- BAuthen	.672
item32	<-- BAttent	.576
item34	<-- BAttent	.670
item35	<-- BAttent	.738
item33	<-- BAttent	.540
item9	<-- BAuthen	.667
P1_16	<-- BAware	.849
P1_15	<-- BAware	.860
P1_14	<-- BAware	.748
P1_13	<-- BAware	.721
P1_12	<-- BAware	.606
P2_1	<-- BReso	.548
P2_2	<-- BReso	.615
P2_3	<-- BReso	.741
P2_4	<-- BReso	.796
P2_5	<-- BReso	.808
P2_6	<-- BReso	.507

Covariances: (LowBENG - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.262	.025	10.479	***	v_e1617
e2_1 <--> e2_2	.112	.020	5.674	***	v_e2_12_2
e2_1 <--> e2_5	-.067	.017	-3.964	***	v_e2_12_5
e27 <--> e1_14	.025	.018	1.394	.163	v_e271_14
e1_13 <--> e2_5	-.004	.015	-.282	.778	v_e1_132_5
e1_15 <--> e2_6	-.017	.018	-.947	.344	v_e1_152_6

Correlations: (LowBENG - Default model)

	Estimate
e17 <--> e16	.579
e2_1 <--> e2_2	.251
e2_1 <--> e2_5	-.183
e27 <--> e1_14	.055
e1_13 <--> e2_5	-.013
e1_15 <--> e2_6	-.044

Variances: (LowBENG - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.059	.027	2.147	.032	par_60
res4	.095	.023	4.221	***	par_61
res2	.158	.034	4.674	***	par_62
res1	.487	.068	7.184	***	par_63
res5	.114	.025	4.588	***	par_64
e20	.312	.039	7.956	***	par_65
e21	.369	.046	8.093	***	par_66
e22	.315	.041	7.705	***	par_67
e17	.382	.034	11.306	***	par_68
e16	.536	.045	11.938	***	par_69
e27	.525	.059	8.932	***	par_70
e8	.422	.052	8.061	***	par_71
e9	.402	.049	8.126	***	par_72
e32	.400	.044	9.067	***	par_73
e34	.325	.040	8.189	***	par_74
e35	.275	.038	7.147	***	par_75
e33	.572	.061	9.303	***	par_76
e1_16	.282	.039	7.263	***	par_77
e1_15	.240	.035	6.965	***	par_78
e1_14	.386	.043	8.899	***	par_79
e1_13	.382	.042	9.101	***	par_80
e1_12	.478	.049	9.689	***	par_81
e2_1	.488	.048	10.117	***	par_82
e2_2	.408	.040	10.128	***	par_83
e2_4	.285	.037	7.620	***	par_84
e2_5	.275	.038	7.298	***	par_85
e2_3	.308	.036	8.566	***	par_86
e2_6	.616	.062	9.866	***	par_87

Squared Multiple Correlations: (LowBENG - Default model)

	Estimate
BReso	.455
BAware	.333
BAttent	.518
BAuthen	.792
BFunc	.610
P2_6	.257
P2_5	.653
P2_4	.633
P2_3	.548

	Estimate
P2_2	.379
P2_1	.300
P1_12	.367
P1_13	.520
P1_14	.559
P1_15	.740
P1_16	.721
item33	.292
item35	.544
item34	.449
item32	.331
item9	.446
item8	.452
item27	.351
item16	.184
item17	.340
item22	.587
item21	.552
item20	.565

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	87	873.585	465	.000	1.879
Saturated model	552	.000	0		
Independence model	46	5235.760	506	.000	10.347

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.050	.874	.850	.736
Saturated model	.000	1.000		
Independence model	.211	.295	.231	.271

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.833	.818	.914	.906	.914
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.919	.766	.840
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	408.585	329.164	495.815
Saturated model	.000	.000	.000
Independence model	4729.760	4500.803	4965.210

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.720	.804	.648	.976
Saturated model	.000	.000	.000	.000
Independence model	10.307	9.311	8.860	9.774

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.042	.037	.046	1.000
Independence model	.136	.132	.139	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1047.585	1066.329		
Saturated model	1104.000	1222.928		
Independence model	5327.760	5337.670		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.062	1.906	2.234	2.099
Saturated model	2.173	2.173	2.173	2.407
Independence model	10.488	10.037	10.951	10.507

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	302	315
Independence model	56	58

Execution time summary

Minimization:	.010
Miscellaneous:	1.154
Bootstrap:	.000
Total:	1.164

3. Factor loadings constrained equal

High brand engagement, low brand engagement

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\Invariance testing for consumers with LH SMEBE BINV BENG\Invariance of HL BENG AMOS factor loadings constrained equal.amw

Analysis Summary

Date and Time

Date: Monday, October 29, 2018

Time: 3:37:02 PM

Title

Invariance of hl beng amos factor loadings constrained equal: Monday, October 29, 2018 3:37 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 295

Variable Summary (HighBENG)

Your model contains the following variables (HighBENG)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

Unobserved, endogenous variables

BFuncnt

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

Variable counts (HighBENG)

Number of variables in your model: 57

Number of observed variables: 23

Number of unobserved variables: 34

Number of exogenous variables: 29

Number of endogenous variables: 28

Parameter Summary (HighBENG)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	0	0	0	0	21
Unlabeled	2	6	28	0	0	36
Total	56	6	29	0	0	91



Group number 2 (Group number 2)
 Notes for Group (Group number 2)
 The model is recursive.
 Sample size = 215
 Variable Summary (LowBENG)
 Your model contains the following variables (LowBENG)

Observed, endogenous variables

item20
 item21
 item22
 item17
 item16
 item27
 item8
 item9
 item32
 item34
 item35
 item33
 P1_16
 P1_15
 P1_14
 P1_13
 P1_12
 P2_1
 P2_2
 P2_3
 P2_4
 P2_5
 P2_6

Unobserved, endogenous variables

BFunct
 BAuthen
 BAttent
 BAware
 BReso

Unobserved, exogenous variables

e20
 e21
 e22
 e17
 e16
 e27
 e8
 e9
 e32
 e34
 e35
 e33
 SMEBE
 res3
 res4
 res2
 e1_16
 e1_15
 e1_14
 e1_13
 e1_12
 res1
 e2_1
 e2_2
 e2_4
 e2_5
 e2_3
 res5
 e2_6

Variable counts (LowBENG)

Number of variables in your model: 57
 Number of observed variables: 23
 Number of unobserved variables: 34
 Number of exogenous variables: 29
 Number of endogenous variables: 28

Parameter Summary (LowBENG)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	33	0	1	0	0	34
Labeled	21	0	0	0	0	21
Unlabeled	2	6	28	0	0	36
Total	56	6	29	0	0	91

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 552

Number of distinct parameters to be estimated: 93

Degrees of freedom (552 - 93): 459

Result (Default model)

Minimum was achieved

Chi-square = 817.381

Degrees of freedom = 459

Probability level = .000



HighBENG (HighBENG - Default model)
 Estimates (HighBENG - Default model)
 Scalar Estimates (HighBENG - Default model)
 Maximum Likelihood Estimates
 Regression Weights: (HighBENG - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.321	.030	10.770	***	pbcu
BAuthen <-- SMEBE	.473	.035	13.511	***	pbau
BFunc <-- SMEBE	.496	.032	15.740	***	pbpr
BReso <-- SMEBE	.308	.031	9.994	***	par_23
BAware <-- SMEBE	.494	.035	14.163	***	pbaw
item20 <-- BFunc	1.000				
item21 <-- BFunc	1.065	.067	15.892	***	p10
item22 <-- BFunc	1.057	.068	15.446	***	p9
item17 <-- BFunc	.670	.061	10.967	***	p8
item16 <-- BFunc	.515	.062	8.242	***	p7
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	1.103	.090	12.246	***	p13
item32 <-- BAttent	1.000				
item34 <-- BAttent	1.156	.107	10.781	***	p17
item35 <-- BAttent	1.288	.115	11.160	***	p16
item33 <-- BAttent	1.088	.110	9.927	***	p15
item9 <-- BAuthen	1.072	.088	12.220	***	p12
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	.960	.048	19.853	***	p5
P1_14 <-- BAware	.817	.047	17.270	***	p4
P1_13 <-- BAware	.751	.045	16.604	***	p3
P1_12 <-- BAware	.615	.046	13.323	***	p2
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	1.089	.093	11.651	***	p22
P2_3 <-- BReso	1.328	.125	10.642	***	p21
P2_4 <-- BReso	1.365	.149	9.138	***	par_22
P2_5 <-- BReso	1.574	.151	10.424	***	p20
P2_6 <-- BReso	1.015	.115	8.821	***	p19

Standardized Regression Weights: (HighBENG - Default model)

	Estimate
BAttent <-- SMEBE	.762
BAuthen <-- SMEBE	.944
BFunc <-- SMEBE	.926
BReso <-- SMEBE	.842
BAware <-- SMEBE	.776
item20 <-- BFunc	.735
item21 <-- BFunc	.768
item22 <-- BFunc	.717
item17 <-- BFunc	.512
item16 <-- BFunc	.410
item27 <-- BAuthen	.648
item8 <-- BAuthen	.714
item32 <-- BAttent	.597
item34 <-- BAttent	.669
item35 <-- BAttent	.703
item33 <-- BAttent	.618
item9 <-- BAuthen	.710
P1_16 <-- BAware	.785
P1_15 <-- BAware	.764
P1_14 <-- BAware	.699
P1_13 <-- BAware	.689
P1_12 <-- BAware	.570
P2_1 <-- BReso	.535
P2_2 <-- BReso	.587
P2_3 <-- BReso	.685
P2_4 <-- BReso	.673
P2_5 <-- BReso	.740
P2_6 <-- BReso	.511

Covariances: (HighBENG - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.151	.025	6.171	***	par_24
e2_1 <--> e2_2	.094	.022	4.261	***	par_25
e2_1 <--> e2_5	-.056	.020	-2.810	.005	par_26
e27 <--> e1_14	.052	.021	2.454	.014	par_27
e1_13 <--> e2_5	-.029	.018	-1.566	.117	par_28
e1_15 <--> e2_6	.027	.022	1.234	.217	par_29

Correlations: (HighBENG - Default model)

	Estimate
e17 <--> e16	.409
e2_1 <--> e2_2	.297
e2_1 <--> e2_5	-.184
e27 <--> e1_14	.165
e1_13 <--> e2_5	-.108

e1_15 <--> e2_6	Estimate
	.082

Variances: (HighBENG - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.027	.014	1.905	.057	par_38
res4	.074	.016	4.697	***	par_39
res2	.041	.014	2.881	.004	par_40
res1	.162	.025	6.472	***	par_41
res5	.039	.010	4.071	***	par_42
e20	.244	.024	9.959	***	par_43
e21	.227	.024	9.441	***	par_44
e22	.302	.030	10.194	***	par_45
e17	.363	.032	11.494	***	par_46
e16	.376	.032	11.753	***	par_47
e27	.348	.033	10.542	***	par_48
e8	.294	.030	9.741	***	par_49
e9	.284	.029	9.799	***	par_50
e32	.320	.030	10.521	***	par_51
e34	.292	.030	9.752	***	par_52
e35	.301	.033	9.259	***	par_53
e33	.340	.033	10.315	***	par_54
e1_16	.253	.027	9.237	***	par_55
e1_15	.267	.028	9.610	***	par_56
e1_14	.283	.027	10.414	***	par_57
e1_13	.253	.024	10.489	***	par_58
e1_12	.318	.028	11.264	***	par_59
e2_1	.334	.030	10.974	***	par_60
e2_2	.302	.027	10.994	***	par_61
e2_4	.301	.029	10.346	***	par_62
e2_5	.275	.029	9.459	***	par_63
e2_3	.267	.026	10.346	***	par_64
e2_6	.391	.034	11.424	***	par_65

LowBENG (LowBENG - Default model)

Estimates (LowBENG - Default model)

Scalar Estimates (LowBENG - Default model)

Maximum Likelihood Estimates

Regression Weights: (LowBENG - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.321	.030	10.770	***	pbcu
BAuthen <-- SMEBE	.473	.035	13.511	***	pbau
BFunct <-- SMEBE	.496	.032	15.740	***	pbpr
BReso <-- SMEBE	.308	.041	7.521	***	par_31
BAware <-- SMEBE	.494	.035	14.163	***	pbaw
item20 <-- BFunct	1.000				
item21 <-- BFunct	1.065	.067	15.892	***	p10
item22 <-- BFunct	1.057	.068	15.446	***	p9
item17 <-- BFunct	.670	.061	10.967	***	p8
item16 <-- BFunct	.515	.062	8.242	***	p7
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	1.103	.090	12.246	***	p13
item32 <-- BAttent	1.000				
item34 <-- BAttent	1.156	.107	10.781	***	p17
item35 <-- BAttent	1.288	.115	11.160	***	p16
item33 <-- BAttent	1.088	.110	9.927	***	p15
item9 <-- BAuthen	1.072	.088	12.220	***	p12
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	.960	.048	19.853	***	p5
P1_14 <-- BAware	.817	.047	17.270	***	p4
P1_13 <-- BAware	.751	.045	16.604	***	p3
P1_12 <-- BAware	.615	.046	13.323	***	p2
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	1.089	.093	11.651	***	p22
P2_3 <-- BReso	1.328	.125	10.642	***	p21
P2_4 <-- BReso	1.539	.160	9.622	***	par_30
P2_5 <-- BReso	1.574	.151	10.424	***	p20
P2_6 <-- BReso	1.015	.115	8.821	***	p19

Standardized Regression Weights: (LowBENG - Default model)

	Estimate
BAttent <-- SMEBE	.719
BAuthen <-- SMEBE	.889
BFunct <-- SMEBE	.779
BReso <-- SMEBE	.674
BAware <-- SMEBE	.580
item20 <-- BFunct	.749
item21 <-- BFunct	.751
item22 <-- BFunct	.773
item17 <-- BFunct	.514

		Estimate
item16	<-- BFunc	.364
item27	<-- BAuthen	.595
item8	<-- BAuthen	.668
item32	<-- BAttent	.576
item34	<-- BAttent	.670
item35	<-- BAttent	.738
item33	<-- BAttent	.540
item9	<-- BAuthen	.670
P1_16	<-- BAware	.847
P1_15	<-- BAware	.853
P1_14	<-- BAware	.752
P1_13	<-- BAware	.721
P1_12	<-- BAware	.604
P2_1	<-- BReso	.536
P2_2	<-- BReso	.604
P2_3	<-- BReso	.733
P2_4	<-- BReso	.797
P2_5	<-- BReso	.809
P2_6	<-- BReso	.507

Covariances: (LowBENG - Default model)

	Estimate	S.E.	C.R.	P	Label
e17 <--> e16	.423	.053	8.062	***	par_32
e2_1 <--> e2_2	.151	.039	3.917	***	par_33
e2_1 <--> e2_5	-.085	.030	-2.865	.004	par_34
e27 <--> e1_14	-.056	.034	-1.612	.107	par_35
e1_13 <--> e2_5	.047	.027	1.748	.080	par_36
e1_15 <--> e2_6	-.109	.033	-3.274	.001	par_37

Correlations: (LowBENG - Default model)

	Estimate
e17 <--> e16	.711
e2_1 <--> e2_2	.321
e2_1 <--> e2_5	-.228
e27 <--> e1_14	-.127
e1_13 <--> e2_5	.147
e1_15 <--> e2_6	-.276

Variances: (LowBENG - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.059	.027	2.164	.030	par_66
res4	.096	.023	4.227	***	par_67
res2	.159	.034	4.687	***	par_68
res1	.483	.067	7.154	***	par_69
res5	.114	.025	4.558	***	par_70
e20	.317	.040	7.957	***	par_71
e21	.355	.045	7.941	***	par_72
e22	.305	.040	7.557	***	par_73
e17	.506	.052	9.700	***	par_74
e16	.701	.070	10.066	***	par_75
e27	.515	.058	8.881	***	par_76
e8	.427	.053	8.127	***	par_77
e9	.399	.049	8.099	***	par_78
e32	.400	.044	9.064	***	par_79
e34	.325	.040	8.191	***	par_80
e35	.275	.039	7.139	***	par_81
e33	.572	.061	9.304	***	par_82
e1_16	.286	.039	7.353	***	par_83
e1_15	.250	.035	7.129	***	par_84
e1_14	.372	.042	8.844	***	par_85
e1_13	.380	.042	9.117	***	par_86
e1_12	.478	.049	9.702	***	par_87
e2_1	.516	.055	9.434	***	par_88
e2_2	.431	.046	9.462	***	par_89
e2_4	.284	.037	7.576	***	par_90
e2_5	.272	.037	7.260	***	par_91
e2_3	.316	.037	8.650	***	par_92
e2_6	.622	.063	9.861	***	par_93

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	93	817.381	459	.000	1.781
Saturated model	552	.000	0		
Independence model	46	5235.760	506	.000	10.347

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.048	.879	.855	.731
Saturated model	.000	1.000		

Model	RMR	GFI	AGFI	PGFI
Independence model	.211	.295	.231	.271

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.844	.828	.925	.916	.924
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.907	.766	.838
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	358.381	282.507	442.096
Saturated model	.000	.000	.000
Independence model	4729.760	4500.803	4965.210

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.609	.705	.556	.870
Saturated model	.000	.000	.000	.000
Independence model	10.307	9.311	8.860	9.774

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.039	.035	.044	1.000
Independence model	.136	.132	.139	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	1003.381	1023.418		
Saturated model	1104.000	1222.928		
Independence model	5327.760	5337.670		

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.975	1.826	2.140	2.015
Saturated model	2.173	2.173	2.173	2.407
Independence model	10.488	10.037	10.951	10.507

HOELTER

Model	HOELTER	HOELTER
Default model	.05	.01
Default model	318	332
Independence model	56	58

Execution time summary

Minimization:	.010
Miscellaneous:	1.604
Bootstrap:	.000
Total:	1.614

Appendix W

AMOS outputs for the Structural equation model of Tofusan's brand equity and its consumer response factors

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS second order plus dependent var tofusan.amw

Analysis Summary

Date and Time

Date: Sunday, November 4, 2018

Time: 4:15:48 PM

Title

Amos second order plus dependent var tofusan: Sunday, November 4, 2018 4:15 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

BPref

BLoy

BWom

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

U1

U2

U3

Variable counts (Group number 1)

Number of variables in your model: 63

Number of observed variables: 26

Number of unobserved variables: 37

Number of exogenous variables: 32



Number of endogenous variables: 31

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	36	0	1	0	0	37
Labeled	0	0	0	0	0	0
Unlabeled	26	24	31	0	0	81
Total	62	24	32	0	0	118

Assessment of normality (Group number 1)

Variable	min	max	skew	c.r.	kurtosis	c.r.
BWom	1.750	5.000	.220	1.216	-.368	-1.019
BLoy	1.000	5.000	.102	.566	-.377	-1.045
BPref	1.000	5.000	-.065	-.357	.584	1.618
P2_6	1.000	5.000	-.182	-1.010	-.345	-.957
P2_5	1.000	5.000	.241	1.333	-.244	-.675
P2_4	1.000	5.000	-.016	-.088	-.547	-1.513
P2_3	1.000	5.000	-.015	-.083	.057	.159
P2_2	1.000	5.000	-.060	-.334	.041	.114
P2_1	1.000	5.000	-.427	-2.364	-.153	-.423
P1_12	1.000	5.000	.117	.647	.072	.200
P1_13	1.000	5.000	.060	.331	-.112	-.311
P1_14	1.000	5.000	.008	.046	-.548	-1.518
P1_15	1.000	5.000	.158	.874	-.307	-.849
P1_16	1.000	5.000	.241	1.332	-.379	-1.050
item33	1.000	5.000	-.015	-.084	-.393	-1.089
item35	1.000	5.000	.231	1.279	-.505	-1.397
item34	1.000	5.000	-.207	-1.145	-.222	-.615
item32	1.000	5.000	.174	.966	-.059	-.165
item9	1.000	5.000	.233	1.292	-.288	-.796
item8	1.000	5.000	.165	.915	-.426	-1.180
item27	1.000	5.000	-.035	-.193	-.343	-.949
item16	1.000	5.000	-.494	-2.735	.019	.051
item17	2.000	5.000	-.113	-.626	-.500	-1.385
item22	1.000	5.000	.184	1.020	-.364	-1.007
item21	1.000	5.000	.162	.896	-.370	-1.023
item20	1.000	5.000	.243	1.344	-.527	-1.458
Multivariate					81.474	14.482

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 351

Number of distinct parameters to be estimated: 81

Degrees of freedom (351 - 81): 270

Result (Default model)

Minimum was achieved

Chi-square = 301.240

Degrees of freedom = 270

Probability level = .093

Group number 1 (Group number 1 - Default model)

Estimates (Group number 1 - Default model)

Scalar Estimates (Group number 1 - Default model)

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.411	.055	7.448	***	par_9
BAuthen <-- SMEBE	.443	.061	7.234	***	par_10
BFunct <-- SMEBE	.475	.057	8.284	***	par_11
BReso <-- SMEBE	.509	.061	8.272	***	par_21
BAware <-- SMEBE	.590	.063	9.340	***	par_23
item20 <-- BFunct	1.000				
item21 <-- BFunct	1.204	.132	9.141	***	par_1
item22 <-- BFunct	1.251	.131	9.533	***	par_2
item17 <-- BFunct	.540	.101	5.356	***	par_3
item16 <-- BFunct	.454	.114	3.968	***	par_4
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	1.410	.184	7.654	***	par_5
item32 <-- BAttent	1.000				
item34 <-- BAttent	.894	.126	7.121	***	par_6
item35 <-- BAttent	.894	.127	7.015	***	par_7
item33 <-- BAttent	1.155	.135	8.583	***	par_8
item9 <-- BAuthen	1.290	.174	7.401	***	par_12
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	1.008	.074	13.593	***	par_13
P1_14 <-- BAware	1.052	.082	12.854	***	par_14
P1_13 <-- BAware	.761	.077	9.925	***	par_15
P1_12 <-- BAware	.705	.078	9.006	***	par_16
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	1.163	.104	11.181	***	par_17
P2_3 <-- BReso	1.289	.147	8.761	***	par_18
P2_4 <-- BReso	1.326	.157	8.464	***	par_19

			Estimate	S.E.	C.R.	P	Label
P2_5	<--	BReso	1.216	.151	8.053	***	par_20
P2_6	<--	BReso	.904	.143	6.302	***	par_22
BPref	<--	SMEBE	.585	.045	13.019	***	par_24
BWom	<--	SMEBE	.480	.046	10.442	***	par_25
BLoy	<--	SMEBE	.645	.050	12.808	***	par_26

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
BAttent	<--	SMEBE	.694
BAuthen	<--	SMEBE	.822
BFunc	<--	SMEBE	.770
BReso	<--	SMEBE	.897
BAware	<--	SMEBE	.731
item20	<--	BFunc	.709
item21	<--	BFunc	.766
item22	<--	BFunc	.813
item17	<--	BFunc	.412
item16	<--	BFunc	.319
item27	<--	BAuthen	.583
item8	<--	BAuthen	.798
item32	<--	BAttent	.717
item34	<--	BAttent	.609
item35	<--	BAttent	.602
item33	<--	BAttent	.780
item9	<--	BAuthen	.745
P1_16	<--	BAware	.836
P1_15	<--	BAware	.853
P1_14	<--	BAware	.813
P1_13	<--	BAware	.685
P1_12	<--	BAware	.623
P2_1	<--	BReso	.617
P2_2	<--	BReso	.729
P2_3	<--	BReso	.839
P2_4	<--	BReso	.790
P2_5	<--	BReso	.738
P2_6	<--	BReso	.544
BPref	<--	SMEBE	.812
BWom	<--	SMEBE	.696
BLoy	<--	SMEBE	.803

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
e2_1	<-->	e2_2	.224	.041	5.409	***	par_27
e17	<-->	e16	.413	.055	7.487	***	par_28
e2_4	<-->	e2_5	.122	.033	3.637	***	par_29
e1_13	<-->	e1_12	.134	.037	3.627	***	par_30
e2_5	<-->	e2_6	.121	.036	3.421	***	par_31
e34	<-->	e35	.141	.044	3.242	.001	par_32
e1_14	<-->	e2_6	.117	.035	3.348	***	par_33
e1_14	<-->	e1_13	.086	.034	2.550	.011	par_34
e20	<-->	e17	.059	.028	2.152	.031	par_35
e27	<-->	e34	.106	.038	2.776	.006	par_36
e27	<-->	e1_15	-.098	.034	-2.900	.004	par_37
e16	<-->	e2_6	.079	.033	2.405	.016	par_38
e2_3	<-->	e2_6	-.068	.031	-2.203	.028	par_39
e2_6	<-->	U1	.087	.026	3.284	.001	par_40
e9	<-->	U1	-.063	.023	-2.769	.006	par_41
e9	<-->	e2_1	.086	.032	2.639	.008	par_42
e8	<-->	U3	-.073	.026	-2.771	.006	par_43
e22	<-->	e35	.068	.034	2.009	.045	par_44
e34	<-->	e2_5	.073	.028	2.615	.009	par_45
e34	<-->	e1_14	-.092	.031	-2.955	.003	par_46
e1_12	<-->	e2_4	.075	.030	2.502	.012	par_47
e1_12	<-->	e2_2	.069	.028	2.426	.015	par_48
e20	<-->	e2_5	.065	.028	2.331	.020	par_49
e32	<-->	e1_14	-.071	.030	-2.386	.017	par_50

Correlations: (Group number 1 - Default model)

			Estimate
e2_1	<-->	e2_2	.499
e17	<-->	e16	.674
e2_4	<-->	e2_5	.332
e1_13	<-->	e1_12	.287
e2_5	<-->	e2_6	.244
e34	<-->	e35	.291
e1_14	<-->	e2_6	.242
e1_14	<-->	e1_13	.216
e20	<-->	e17	.131
e27	<-->	e34	.205
e27	<-->	e1_15	-.262

		Estimate
e16	<--> e2_6	.121
e2_3	<--> e2_6	-.180
e2_6	<--> U1	.261
e9	<--> U1	-.242
e9	<--> e2_1	.190
e8	<--> U3	-.256
e22	<--> e35	.174
e34	<--> e2_5	.168
e34	<--> e1_14	-.219
e1_12	<--> e2_4	.179
e1_12	<--> e2_2	.156
e20	<--> e2_5	.167
e32	<--> e1_14	-.203

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.095	.029	3.246	.001	par_51
res4	.182	.041	4.442	***	par_52
res2	.155	.035	4.376	***	par_53
res1	.304	.052	5.834	***	par_54
res5	.063	.019	3.328	***	par_55
e20	.376	.048	7.819	***	par_56
e21	.388	.055	7.072	***	par_57
e22	.306	.050	6.130	***	par_58
e17	.543	.058	9.346	***	par_59
e16	.693	.073	9.455	***	par_60
e27	.565	.065	8.683	***	par_61
e8	.331	.054	6.178	***	par_62
e9	.388	.054	7.155	***	par_63
e32	.332	.047	7.073	***	par_64
e34	.476	.058	8.225	***	par_65
e35	.495	.060	8.193	***	par_66
e33	.301	.050	5.990	***	par_67
e1_16	.280	.040	7.015	***	par_68
e1_15	.248	.038	6.592	***	par_69
e1_14	.369	.050	7.432	***	par_70
e1_13	.425	.050	8.498	***	par_71
e1_12	.510	.057	8.950	***	par_72
e2_1	.522	.058	8.931	***	par_73
e2_2	.384	.046	8.333	***	par_74
e2_4	.339	.044	7.651	***	par_75
e2_5	.397	.048	8.303	***	par_76
e2_3	.226	.034	6.729	***	par_77
e2_6	.626	.069	9.068	***	par_78
U1	.177	.023	7.807	***	par_79
U2	.229	.029	7.972	***	par_80
U3	.245	.028	8.711	***	par_81

Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
BReso	.805
BAware	.534
BAttent	.481
BAuthen	.675
BFunc	.593
BWom	.484
BLoy	.645
BPref	.659
P2_6	.295
P2_5	.545
P2_4	.625
P2_3	.703
P2_2	.531
P2_1	.381
P1_12	.388
P1_13	.470
P1_14	.661
P1_15	.727
P1_16	.699
item33	.609
item35	.362
item34	.371
item32	.515
item9	.556
item8	.636
item27	.340
item16	.101
item17	.170

	Estimate
item22	.661
item21	.587
item20	.503

Factor Score Weights (Group number 1 - Default model)

	BWom	BWom	BWom	P2_6	P2_5	P2_4	P2_3	P2_2	P2_1	P1_12	P1_13	P1_14	P1_15	P1_16	item33	item35	item34	item32	item9	item8	item27	item16	item17	item22	item21	item20
SMEBE	.188	.231	.318	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BReso	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BAware	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BAttent	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BAuthen	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
BFunct	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Total Effects (Group number 1 - Default model)

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
BReso	.509	.000	.000	.000	.000	.000
BAware	.590	.000	.000	.000	.000	.000
BAttent	.411	.000	.000	.000	.000	.000
BAuthen	.443	.000	.000	.000	.000	.000
BFunct	.475	.000	.000	.000	.000	.000
BWom	.480	.000	.000	.000	.000	.000
BLOY	.645	.000	.000	.000	.000	.000
BPref	.585	.000	.000	.000	.000	.000
P2_6	.460	.904	.000	.000	.000	.000
P2_5	.618	1.216	.000	.000	.000	.000
P2_4	.674	1.326	.000	.000	.000	.000
P2_3	.656	1.289	.000	.000	.000	.000
P2_2	.592	1.163	.000	.000	.000	.000
P2_1	.509	1.000	.000	.000	.000	.000
P1_12	.416	.000	.705	.000	.000	.000
P1_13	.449	.000	.761	.000	.000	.000
P1_14	.620	.000	1.052	.000	.000	.000
P1_15	.594	.000	1.008	.000	.000	.000
P1_16	.590	.000	1.000	.000	.000	.000
item33	.475	.000	.000	1.155	.000	.000
item35	.368	.000	.000	.894	.000	.000
item34	.368	.000	.000	.894	.000	.000
item32	.411	.000	.000	1.000	.000	.000
item9	.572	.000	.000	.000	1.290	.000
item8	.625	.000	.000	.000	1.410	.000
item27	.443	.000	.000	.000	1.000	.000
item16	.215	.000	.000	.000	.000	.454
item17	.256	.000	.000	.000	.000	.540
item22	.594	.000	.000	.000	.000	1.251
item21	.572	.000	.000	.000	.000	1.204
item20	.475	.000	.000	.000	.000	1.000

Standardized Total Effects (Group number 1 - Default model)

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
BReso	.897	.000	.000	.000	.000	.000
BAware	.731	.000	.000	.000	.000	.000

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
BAttent	.694	.000	.000	.000	.000	.000
BAuthen	.822	.000	.000	.000	.000	.000
BFunct	.770	.000	.000	.000	.000	.000
BWom	.696	.000	.000	.000	.000	.000
BLoy	.803	.000	.000	.000	.000	.000
BPref	.812	.000	.000	.000	.000	.000
P2_6	.488	.544	.000	.000	.000	.000
P2_5	.662	.738	.000	.000	.000	.000
P2_4	.709	.790	.000	.000	.000	.000
P2_3	.752	.839	.000	.000	.000	.000
P2_2	.654	.729	.000	.000	.000	.000
P2_1	.554	.617	.000	.000	.000	.000
P1_12	.455	.000	.623	.000	.000	.000
P1_13	.501	.000	.685	.000	.000	.000
P1_14	.594	.000	.813	.000	.000	.000
P1_15	.623	.000	.853	.000	.000	.000
P1_16	.611	.000	.836	.000	.000	.000
item33	.541	.000	.000	.780	.000	.000
item35	.418	.000	.000	.602	.000	.000
item34	.423	.000	.000	.609	.000	.000
item32	.498	.000	.000	.717	.000	.000
item9	.612	.000	.000	.000	.745	.000
item8	.655	.000	.000	.000	.798	.000
item27	.479	.000	.000	.000	.583	.000
item16	.245	.000	.000	.000	.000	.319
item17	.317	.000	.000	.000	.000	.412
item22	.626	.000	.000	.000	.000	.813
item21	.590	.000	.000	.000	.000	.766
item20	.546	.000	.000	.000	.000	.709

Direct Effects (Group number 1 - Default model)

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
BReso	.509	.000	.000	.000	.000	.000
BAware	.590	.000	.000	.000	.000	.000
BAttent	.411	.000	.000	.000	.000	.000
BAuthen	.443	.000	.000	.000	.000	.000
BFunct	.475	.000	.000	.000	.000	.000
BWom	.480	.000	.000	.000	.000	.000
BLoy	.645	.000	.000	.000	.000	.000
BPref	.585	.000	.000	.000	.000	.000
P2_6	.000	.904	.000	.000	.000	.000
P2_5	.000	1.216	.000	.000	.000	.000
P2_4	.000	1.326	.000	.000	.000	.000
P2_3	.000	1.289	.000	.000	.000	.000
P2_2	.000	1.163	.000	.000	.000	.000
P2_1	.000	1.000	.000	.000	.000	.000
P1_12	.000	.000	.705	.000	.000	.000
P1_13	.000	.000	.761	.000	.000	.000
P1_14	.000	.000	1.052	.000	.000	.000
P1_15	.000	.000	1.008	.000	.000	.000
P1_16	.000	.000	1.000	.000	.000	.000
item33	.000	.000	.000	1.155	.000	.000
item35	.000	.000	.000	.894	.000	.000
item34	.000	.000	.000	.894	.000	.000
item32	.000	.000	.000	1.000	.000	.000
item9	.000	.000	.000	.000	1.290	.000
item8	.000	.000	.000	.000	1.410	.000
item27	.000	.000	.000	.000	1.000	.000
item16	.000	.000	.000	.000	.000	.454
item17	.000	.000	.000	.000	.000	.540
item22	.000	.000	.000	.000	.000	1.251
item21	.000	.000	.000	.000	.000	1.204
item20	.000	.000	.000	.000	.000	1.000

Standardized Direct Effects (Group number 1 - Default model)

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
BReso	.897	.000	.000	.000	.000	.000
BAware	.731	.000	.000	.000	.000	.000
BAttent	.694	.000	.000	.000	.000	.000
BAuthen	.822	.000	.000	.000	.000	.000
BFunct	.770	.000	.000	.000	.000	.000
BWom	.696	.000	.000	.000	.000	.000
BLoy	.803	.000	.000	.000	.000	.000
BPref	.812	.000	.000	.000	.000	.000
P2_6	.000	.544	.000	.000	.000	.000
P2_5	.000	.738	.000	.000	.000	.000
P2_4	.000	.790	.000	.000	.000	.000
P2_3	.000	.839	.000	.000	.000	.000
P2_2	.000	.729	.000	.000	.000	.000

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
P2_1	.000	.617	.000	.000	.000	.000
P1_12	.000	.000	.623	.000	.000	.000
P1_13	.000	.000	.685	.000	.000	.000
P1_14	.000	.000	.813	.000	.000	.000
P1_15	.000	.000	.853	.000	.000	.000
P1_16	.000	.000	.836	.000	.000	.000
item33	.000	.000	.000	.780	.000	.000
item35	.000	.000	.000	.602	.000	.000
item34	.000	.000	.000	.609	.000	.000
item32	.000	.000	.000	.717	.000	.000
item9	.000	.000	.000	.000	.745	.000
item8	.000	.000	.000	.000	.798	.000
item27	.000	.000	.000	.000	.583	.000
item16	.000	.000	.000	.000	.000	.319
item17	.000	.000	.000	.000	.000	.412
item22	.000	.000	.000	.000	.000	.813
item21	.000	.000	.000	.000	.000	.766
item20	.000	.000	.000	.000	.000	.709

Indirect Effects (Group number 1 - Default model)

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
BReso	.000	.000	.000	.000	.000	.000
BAware	.000	.000	.000	.000	.000	.000
BAttent	.000	.000	.000	.000	.000	.000
BAuthen	.000	.000	.000	.000	.000	.000
BFunct	.000	.000	.000	.000	.000	.000
BWom	.000	.000	.000	.000	.000	.000
BLoy	.000	.000	.000	.000	.000	.000
BPref	.000	.000	.000	.000	.000	.000
P2_6	.460	.000	.000	.000	.000	.000
P2_5	.618	.000	.000	.000	.000	.000
P2_4	.674	.000	.000	.000	.000	.000
P2_3	.656	.000	.000	.000	.000	.000
P2_2	.592	.000	.000	.000	.000	.000
P2_1	.509	.000	.000	.000	.000	.000
P1_12	.416	.000	.000	.000	.000	.000
P1_13	.449	.000	.000	.000	.000	.000
P1_14	.620	.000	.000	.000	.000	.000
P1_15	.594	.000	.000	.000	.000	.000
P1_16	.590	.000	.000	.000	.000	.000
item33	.475	.000	.000	.000	.000	.000
item35	.368	.000	.000	.000	.000	.000
item34	.368	.000	.000	.000	.000	.000
item32	.411	.000	.000	.000	.000	.000
item9	.572	.000	.000	.000	.000	.000
item8	.625	.000	.000	.000	.000	.000
item27	.443	.000	.000	.000	.000	.000
item16	.215	.000	.000	.000	.000	.000
item17	.256	.000	.000	.000	.000	.000
item22	.594	.000	.000	.000	.000	.000
item21	.572	.000	.000	.000	.000	.000
item20	.475	.000	.000	.000	.000	.000

Standardized Indirect Effects (Group number 1 - Default model)

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
BReso	.000	.000	.000	.000	.000	.000
BAware	.000	.000	.000	.000	.000	.000
BAttent	.000	.000	.000	.000	.000	.000
BAuthen	.000	.000	.000	.000	.000	.000
BFunct	.000	.000	.000	.000	.000	.000
BWom	.000	.000	.000	.000	.000	.000
BLoy	.000	.000	.000	.000	.000	.000
BPref	.000	.000	.000	.000	.000	.000
P2_6	.488	.000	.000	.000	.000	.000
P2_5	.662	.000	.000	.000	.000	.000
P2_4	.709	.000	.000	.000	.000	.000
P2_3	.752	.000	.000	.000	.000	.000
P2_2	.654	.000	.000	.000	.000	.000
P2_1	.554	.000	.000	.000	.000	.000
P1_12	.455	.000	.000	.000	.000	.000
P1_13	.501	.000	.000	.000	.000	.000
P1_14	.594	.000	.000	.000	.000	.000
P1_15	.623	.000	.000	.000	.000	.000
P1_16	.611	.000	.000	.000	.000	.000
item33	.541	.000	.000	.000	.000	.000
item35	.418	.000	.000	.000	.000	.000
item34	.423	.000	.000	.000	.000	.000
item32	.498	.000	.000	.000	.000	.000
item9	.612	.000	.000	.000	.000	.000

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
item8	.655	.000	.000	.000	.000	.000
item27	.479	.000	.000	.000	.000	.000
item16	.245	.000	.000	.000	.000	.000
item17	.317	.000	.000	.000	.000	.000
item22	.626	.000	.000	.000	.000	.000
item21	.590	.000	.000	.000	.000	.000
item20	.546	.000	.000	.000	.000	.000

Modification Indices (Group number 1 - Default model)
Covariances: (Group number 1 - Default model)

	M.I.	Par Change
res3 <-> res4	7.330	.048
res2 <-> res4	6.567	.052
e2_5 <-> U2	4.255	.044
e27 <-> res3	5.814	-.057

Variances: (Group number 1 - Default model)

	M.I.	Par Change

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
BWom <--- item16	6.846	.112
BWom <--- item17	7.822	.130
P1_12 <--- BAttent	4.235	.191
P1_12 <--- item33	4.738	.124
P1_12 <--- item35	5.686	.135
P1_12 <--- item16	4.505	.120
item27 <--- item33	4.088	.127

Minimization History (Default model)

Iteration		Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e	20		-1.530	9999.000	2892.530	0	9999.000
1	e	19		-.386	3.596	1684.487	21	.253
2	e	10		-.260	.738	1262.394	6	.938
3	e*	2		-.080	1.063	850.754	5	.813
4	e*	0	484.210		1.406	486.095	5	.802
5	e	0	91.668		1.256	371.863	2	.000
6	e	0	100.231		.624	311.767	1	1.164
7	e	0	163.890		.357	302.343	1	1.154
8	e	0	252.880		.174	301.289	1	1.115
9	e	0	301.337		.049	301.241	1	1.044
10	e	0	304.025		.004	301.240	1	1.004
11	e	0	303.613		.000	301.240	1	1.000

Model Fit Summary

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	81	301.240	270	.093	1.116
Saturated model	351	.000	0		
Independence model	26	2917.020	325	.000	8.975

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.044	.893	.861	.687
Saturated model	.000	1.000		
Independence model	.305	.206	.143	.191

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	.897	.876	.988	.985	.988
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.831	.745	.821
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	31.240	.000	77.854
Saturated model	.000	.000	.000
Independence model	2592.020	2422.997	2768.423

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.646	.171	.000	.425
Saturated model	.000	.000	.000	.000
Independence model	15.940	14.164	13.240	15.128

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.025	.000	.040	.999

Model	RMSEA	LO 90	HI 90	PCLOSE
Independence model	.209	.202	.216	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	463.240	491.279	723.650	804.650
Saturated model	702.000	823.500	1830.442	2181.442
Independence model	2969.020	2978.020	3052.608	3078.608

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.531	2.361	2.786	2.685
Saturated model	3.836	3.836	3.836	4.500
Independence model	16.224	15.301	17.188	16.273

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	188	199
Independence model	24	25

Execution time summary

Minimization: .036
 Miscellaneous: .686
 Bootstrap: .000
 Total: .722



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Appendix X

AMOS outputs for the Structural equation model of Santa fe's brand equity and its consumer response factors

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS second order plus dependent var Santa fe'.amw

Analysis Summary

Date and Time

Date: Sunday, November 4, 2018

Time: 6:51:03 PM

Title

Amos second order plus dependent var Santa fe': Sunday, November 4, 2018 6:51 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

BPref

BLoy

Wom

Unobserved, endogenous variables

BFunct

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

U1

U2

U3

Variable counts (Group number 1)

Number of variables in your model: 63

Number of observed variables: 26

Number of unobserved variables: 37

Number of exogenous variables: 32



Number of endogenous variables: 31

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	36	0	1	0	0	37
Labeled	0	0	0	0	0	0
Unlabeled	26	47	31	0	0	104
Total	62	47	32	0	0	141

Assessment of normality (Group number 1)

Variable	min	max	skew	c.r.	kurtosis	c.r.
Wom	1.000	5.000	-.661	-3.659	1.200	3.323
BLoy	1.000	5.000	-.640	-3.545	.716	1.982
BPref	1.000	5.000	-.721	-3.990	1.124	3.112
P2_6	1.000	5.000	-.368	-2.038	.280	.774
P2_5	1.000	5.000	-.482	-2.669	.181	.501
P2_4	1.000	5.000	-.326	-1.804	-.082	-.226
P2_3	1.000	5.000	-.271	-1.498	-.006	-.016
P2_2	1.000	5.000	-.576	-3.188	.761	2.108
P2_1	1.000	5.000	-.400	-2.216	.676	1.873
P1_12	1.000	5.000	-.073	-.404	.101	.280
P1_13	1.000	5.000	-.536	-2.971	.745	2.063
P1_14	1.000	5.000	-.388	-2.149	.406	1.125
P1_15	1.000	5.000	-.415	-2.299	-.035	-.098
P1_16	1.000	5.000	-.397	-2.201	-.097	-.270
item33	1.000	5.000	-.452	-2.505	.386	1.069
item35	1.000	5.000	-.388	-2.149	.151	.418
item34	1.000	6.000	-.358	-1.984	.213	.591
item32	1.000	5.000	-.492	-2.723	.874	2.420
item9	1.000	5.000	-.425	-2.353	.463	1.282
item8	1.000	5.000	-.166	-.918	.258	.714
item27	1.000	5.000	-.488	-2.702	.040	.111
item16	1.000	5.000	-.516	-2.857	.886	2.454
item17	1.000	5.000	-.609	-3.373	1.085	3.004
item22	1.000	5.000	-.505	-2.796	.445	1.232
item21	1.000	5.000	-.450	-2.490	.336	.931
item20	1.000	5.000	-.203	-1.122	-.029	-.080
Multivariate					111.480	19.815

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 351

Number of distinct parameters to be estimated: 104

Degrees of freedom (351 - 104): 247

Result (Default model)

Minimum was achieved

Chi-square = 276.888

Degrees of freedom = 247

Probability level = .093

Group number 1 (Group number 1 - Default model)

Estimates (Group number 1 - Default model)

Scalar Estimates (Group number 1 - Default model)

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.499	.048	10.456	***	par_9
BAuthen <-- SMEBE	.641	.057	11.297	***	par_10
BFunct <-- SMEBE	.637	.051	12.429	***	par_11
BReso <-- SMEBE	.586	.047	12.361	***	par_21
BAware <-- SMEBE	.600	.058	10.364	***	par_23
item20 <-- BFunct	1.000				
item21 <-- BFunct	.979	.070	13.958	***	par_1
item22 <-- BFunct	.910	.074	12.247	***	par_2
item17 <-- BFunct	.789	.075	10.535	***	par_3
item16 <-- BFunct	.689	.072	9.527	***	par_4
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	.890	.087	10.269	***	par_5
item32 <-- BAttent	1.000				
item34 <-- BAttent	1.101	.113	9.705	***	par_6
item35 <-- BAttent	1.082	.115	9.442	***	par_7
item33 <-- BAttent	1.029	.113	9.101	***	par_8
item9 <-- BAuthen	1.014	.090	11.235	***	par_12
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	.983	.068	14.415	***	par_13
P1_14 <-- BAware	.901	.067	13.408	***	par_14
P1_13 <-- BAware	.982	.066	14.877	***	par_15
P1_12 <-- BAware	.893	.071	12.629	***	par_16
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	1.071	.088	12.211	***	par_17
P2_3 <-- BReso	1.066	.086	12.433	***	par_18
P2_4 <-- BReso	1.213	.103	11.721	***	par_19

			Estimate	S.E.	C.R.	P	Label
P2_5	<--	BReso	1.209	.102	11.887	***	par_20
P2_6	<--	BReso	1.141	.092	12.341	***	par_22
BPref	<--	SMEBE	.637	.044	14.383	***	par_24
BLoy	<--	SMEBE	.668	.050	13.484	***	par_25
Wom	<--	SMEBE	.624	.042	14.857	***	par_26

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
BAttent	<--	SMEBE	.931
BAuthen	<--	SMEBE	.983
BFunc	<--	SMEBE	.917
BReso	<--	SMEBE	.949
BAware	<--	SMEBE	.793
item20	<--	BFunc	.839
item21	<--	BFunc	.843
item22	<--	BFunc	.770
item17	<--	BFunc	.693
item16	<--	BFunc	.642
item27	<--	BAuthen	.740
item8	<--	BAuthen	.748
item32	<--	BAttent	.732
item34	<--	BAttent	.744
item35	<--	BAttent	.724
item33	<--	BAttent	.693
item9	<--	BAuthen	.810
P1_16	<--	BAware	.822
P1_15	<--	BAware	.799
P1_14	<--	BAware	.833
P1_13	<--	BAware	.891
P1_12	<--	BAware	.797
P2_1	<--	BReso	.806
P2_2	<--	BReso	.788
P2_3	<--	BReso	.798
P2_4	<--	BReso	.831
P2_5	<--	BReso	.824
P2_6	<--	BReso	.793
BPref	<--	SMEBE	.856
BLoy	<--	SMEBE	.825
Wom	<--	SMEBE	.873

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
res1	<-->	res5	.036	.012	2.990	.003	par_73
e17	<-->	e16	.166	.028	5.964	***	par_27
U1	<-->	U2	.076	.014	5.280	***	par_28
e1_15	<-->	e2_6	-.089	.021	-4.166	***	par_29
e2_2	<-->	U1	.038	.014	2.771	.006	par_30
e16	<-->	e1_16	-.055	.018	-3.023	.003	par_31
e1_15	<-->	e1_14	.083	.023	3.630	***	par_32
e1_16	<-->	e1_15	.066	.023	2.914	.004	par_33
e8	<-->	U2	-.063	.017	-3.628	***	par_34
e2_4	<-->	e2_6	-.075	.021	-3.564	***	par_35
e9	<-->	e2_2	.054	.019	2.839	.005	par_36
e1_15	<-->	e2_3	-.066	.019	-3.569	***	par_37
e20	<-->	e34	-.059	.019	-3.050	.002	par_38
e2_1	<-->	e2_4	-.061	.019	-3.205	.001	par_39
e2_1	<-->	e2_5	-.052	.018	-2.859	.004	par_40
e35	<-->	e2_5	-.050	.021	-2.422	.015	par_41
e33	<-->	e2_2	.069	.022	3.142	.002	par_42
e16	<-->	U1	-.036	.012	-2.936	.003	par_43
e16	<-->	e2_4	-.040	.017	-2.270	.023	par_44
e22	<-->	e2_3	.056	.019	3.006	.003	par_45
e17	<-->	e2_5	-.080	.019	-4.232	***	par_46
e20	<-->	e1_12	-.053	.020	-2.651	.008	par_47
e22	<-->	e1_16	.044	.020	2.144	.032	par_48
e16	<-->	e32	.040	.018	2.231	.026	par_49
e2_4	<-->	e2_3	.044	.022	2.013	.044	par_50
e22	<-->	e8	.059	.020	2.949	.003	par_51
U2	<-->	U3	.028	.011	2.477	.013	par_52
e1_13	<-->	e2_1	.037	.016	2.269	.023	par_53
e9	<-->	e1_13	-.052	.016	-3.201	.001	par_54
e17	<-->	e1_13	-.032	.015	-2.155	.031	par_55
e20	<-->	e9	-.052	.017	-2.951	.003	par_56
e22	<-->	e27	.058	.023	2.492	.013	par_57
e34	<-->	e35	.065	.027	2.372	.018	par_58
e17	<-->	e34	-.043	.018	-2.360	.018	par_59
e2_5	<-->	U2	.057	.015	3.667	***	par_60
e1_16	<-->	e2_1	.035	.019	1.874	.061	par_61
e27	<-->	e2_1	-.045	.021	-2.193	.028	par_62

		Estimate	S.E.	C.R.	P	Label
e27	<--> e2_6	-.060	.025	-2.431	.015	par_63
e27	<--> U2	.036	.017	2.052	.040	par_64
e16	<--> e8	.048	.018	2.708	.007	par_65
e20	<--> U2	.032	.014	2.300	.021	par_66
e2_6	<--> U2	.035	.016	2.169	.030	par_67
e8	<--> U1	-.045	.016	-2.867	.004	par_68
e22	<--> res1	.057	.020	2.907	.004	par_69
e22	<--> e33	.047	.022	2.151	.032	par_70
e9	<--> e2_6	-.042	.020	-2.138	.033	par_71
e2_2	<--> res1	-.072	.019	-3.739	***	par_72

Correlations: (Group number 1 - Default model)

		Estimate
res1	<--> res5	.404
e17	<--> e16	.510
U1	<--> U2	.432
e1_15	<--> e2_6	-.294
e2_2	<--> U1	.191
e16	<--> e1_16	-.183
e1_15	<--> e1_14	.326
e1_16	<--> e1_15	.226
e8	<--> U2	-.266
e2_4	<--> e2_6	-.276
e9	<--> e2_2	.216
e1_15	<--> e2_3	-.238
e20	<--> e34	-.249
e2_1	<--> e2_4	-.270
e2_1	<--> e2_5	-.222
e35	<--> e2_5	-.178
e33	<--> e2_2	.234
e16	<--> U1	-.163
e16	<--> e2_4	-.138
e22	<--> e2_3	.215
e17	<--> e2_5	-.275
e20	<--> e1_12	-.228
e22	<--> e1_16	.159
e16	<--> e32	.139
e2_4	<--> e2_3	.176
e22	<--> e8	.219
U2	<--> U3	.173
e1_13	<--> e2_1	.215
e9	<--> e1_13	-.284
e17	<--> e1_13	-.150
e20	<--> e9	-.240
e22	<--> e27	.186
e34	<--> e35	.222
e17	<--> e34	-.143
e2_5	<--> U2	.241
e1_16	<--> e2_1	.146
e27	<--> e2_1	-.169
e27	<--> e2_6	-.187
e27	<--> U2	.132
e16	<--> e8	.162
e20	<--> U2	.153
e2_6	<--> U2	.140
e8	<--> U1	-.229
e22	<--> res1	.239
e22	<--> e33	.158
e9	<--> e2_6	-.164
e2_2	<--> res1	-.303

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.014	.016	.922	.357	par_74
res4	.038	.014	2.644	.008	par_75
res2	.077	.018	4.306	***	par_76
res1	.212	.036	5.878	***	par_77
res5	.038	.010	3.818	***	par_78
e20	.203	.027	7.517	***	par_79
e21	.188	.025	7.642	***	par_80
e22	.273	.032	8.574	***	par_81
e17	.325	.036	9.014	***	par_82
e16	.328	.035	9.342	***	par_83
e27	.352	.041	8.682	***	par_84
e8	.264	.031	8.666	***	par_85
e9	.229	.029	7.959	***	par_86
e32	.248	.030	8.259	***	par_87
e34	.280	.035	7.913	***	par_88



	Wom	BLOY	BPref	P2_6	P2_5	P2_4	P2_3	P2_2	P2_1	P1_12	P1_13	P1_14	P1_15	P1_16	item33	item35	item34	item32	item9	item8	item27	item16	item17	item22	item21	item20	
ut	0	0	3	7	4	4	1	0	5	0	3	0	2	0	3	1	4	2	4	0	9	0	3	0	3	0	2
h	8	1	6	2	1	3	9	3	3	8	1	2	6	1	1	8	0	4	7	4	1	0	0	6	3	0	
e		9						9			1			7													
n																											
B																											
F																											
u	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	
n	7	0	0	4	5	4	0	0	4	3	0	0	3	0	0	0	0	0	0	1	0	0	8	3	8	3	
c	1	8	6	2	8	1	1	1	1	0	9	3	4	8	6	2	2	3	4	4	1	4	0	9	4	1	
t																										6	

Total Effects (Group number 1 - Default model)

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
BReso	.586	.000	.000	.000	.000	.000
BAware	.600	.000	.000	.000	.000	.000
BAttent	.499	.000	.000	.000	.000	.000
BAuthen	.641	.000	.000	.000	.000	.000
BFunct	.637	.000	.000	.000	.000	.000
Wom	.624	.000	.000	.000	.000	.000
BLOY	.668	.000	.000	.000	.000	.000
BPref	.637	.000	.000	.000	.000	.000
P2_6	.669	1.141	.000	.000	.000	.000
P2_5	.709	1.209	.000	.000	.000	.000
P2_4	.711	1.213	.000	.000	.000	.000
P2_3	.625	1.066	.000	.000	.000	.000
P2_2	.628	1.071	.000	.000	.000	.000
P2_1	.586	1.000	.000	.000	.000	.000
P1_12	.535	.000	.893	.000	.000	.000
P1_13	.589	.000	.982	.000	.000	.000
P1_14	.540	.000	.901	.000	.000	.000
P1_15	.590	.000	.983	.000	.000	.000
P1_16	.600	.000	1.000	.000	.000	.000
item33	.513	.000	.000	1.029	.000	.000
item35	.539	.000	.000	1.082	.000	.000
item34	.549	.000	.000	1.101	.000	.000
item32	.499	.000	.000	1.000	.000	.000
item9	.650	.000	.000	.000	1.014	.000
item8	.570	.000	.000	.000	.890	.000
item27	.641	.000	.000	.000	1.000	.000
item16	.439	.000	.000	.000	.000	.689
item17	.503	.000	.000	.000	.000	.789
item22	.579	.000	.000	.000	.000	.910
item21	.624	.000	.000	.000	.000	.979
item20	.637	.000	.000	.000	.000	1.000

Standardized Total Effects (Group number 1 - Default model)

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
BReso	.949	.000	.000	.000	.000	.000
BAware	.793	.000	.000	.000	.000	.000
BAttent	.931	.000	.000	.000	.000	.000
BAuthen	.983	.000	.000	.000	.000	.000
BFunct	.917	.000	.000	.000	.000	.000
Wom	.873	.000	.000	.000	.000	.000
BLOY	.825	.000	.000	.000	.000	.000
BPref	.856	.000	.000	.000	.000	.000
P2_6	.753	.793	.000	.000	.000	.000
P2_5	.782	.824	.000	.000	.000	.000
P2_4	.788	.831	.000	.000	.000	.000
P2_3	.757	.798	.000	.000	.000	.000
P2_2	.747	.788	.000	.000	.000	.000
P2_1	.765	.806	.000	.000	.000	.000
P1_12	.632	.000	.797	.000	.000	.000
P1_13	.707	.000	.891	.000	.000	.000
P1_14	.661	.000	.833	.000	.000	.000
P1_15	.634	.000	.799	.000	.000	.000
P1_16	.652	.000	.822	.000	.000	.000
item33	.646	.000	.000	.693	.000	.000
item35	.674	.000	.000	.724	.000	.000
item34	.693	.000	.000	.744	.000	.000
item32	.682	.000	.000	.732	.000	.000
item9	.796	.000	.000	.000	.810	.000
item8	.735	.000	.000	.000	.748	.000
item27	.727	.000	.000	.000	.740	.000
item16	.588	.000	.000	.000	.000	.642
item17	.636	.000	.000	.000	.000	.693
item22	.707	.000	.000	.000	.000	.770

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
item21	.773	.000	.000	.000	.000	.843
item20	.769	.000	.000	.000	.000	.839

Direct Effects (Group number 1 - Default model)

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
BReso	.586	.000	.000	.000	.000	.000
BAware	.600	.000	.000	.000	.000	.000
BAttent	.499	.000	.000	.000	.000	.000
BAuthen	.641	.000	.000	.000	.000	.000
BFunct	.637	.000	.000	.000	.000	.000
Wom	.624	.000	.000	.000	.000	.000
BLoy	.668	.000	.000	.000	.000	.000
BPref	.637	.000	.000	.000	.000	.000
P2_6	.000	1.141	.000	.000	.000	.000
P2_5	.000	1.209	.000	.000	.000	.000
P2_4	.000	1.213	.000	.000	.000	.000
P2_3	.000	1.066	.000	.000	.000	.000
P2_2	.000	1.071	.000	.000	.000	.000
P2_1	.000	1.000	.000	.000	.000	.000
P1_12	.000	.000	.893	.000	.000	.000
P1_13	.000	.000	.982	.000	.000	.000
P1_14	.000	.000	.901	.000	.000	.000
P1_15	.000	.000	.983	.000	.000	.000
P1_16	.000	.000	1.000	.000	.000	.000
item33	.000	.000	.000	1.029	.000	.000
item35	.000	.000	.000	1.082	.000	.000
item34	.000	.000	.000	1.101	.000	.000
item32	.000	.000	.000	1.000	.000	.000
item9	.000	.000	.000	.000	1.014	.000
item8	.000	.000	.000	.000	.890	.000
item27	.000	.000	.000	.000	1.000	.000
item16	.000	.000	.000	.000	.000	.689
item17	.000	.000	.000	.000	.000	.789
item22	.000	.000	.000	.000	.000	.910
item21	.000	.000	.000	.000	.000	.979
item20	.000	.000	.000	.000	.000	1.000

Standardized Direct Effects (Group number 1 - Default model)

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
BReso	.949	.000	.000	.000	.000	.000
BAware	.793	.000	.000	.000	.000	.000
BAttent	.931	.000	.000	.000	.000	.000
BAuthen	.983	.000	.000	.000	.000	.000
BFunct	.917	.000	.000	.000	.000	.000
Wom	.873	.000	.000	.000	.000	.000
BLoy	.825	.000	.000	.000	.000	.000
BPref	.856	.000	.000	.000	.000	.000
P2_6	.000	.793	.000	.000	.000	.000
P2_5	.000	.824	.000	.000	.000	.000
P2_4	.000	.831	.000	.000	.000	.000
P2_3	.000	.798	.000	.000	.000	.000
P2_2	.000	.788	.000	.000	.000	.000
P2_1	.000	.806	.000	.000	.000	.000
P1_12	.000	.000	.797	.000	.000	.000
P1_13	.000	.000	.891	.000	.000	.000
P1_14	.000	.000	.833	.000	.000	.000
P1_15	.000	.000	.799	.000	.000	.000
P1_16	.000	.000	.822	.000	.000	.000
item33	.000	.000	.000	.693	.000	.000
item35	.000	.000	.000	.724	.000	.000
item34	.000	.000	.000	.744	.000	.000
item32	.000	.000	.000	.732	.000	.000
item9	.000	.000	.000	.000	.810	.000
item8	.000	.000	.000	.000	.748	.000
item27	.000	.000	.000	.000	.740	.000
item16	.000	.000	.000	.000	.000	.642
item17	.000	.000	.000	.000	.000	.693
item22	.000	.000	.000	.000	.000	.770
item21	.000	.000	.000	.000	.000	.843
item20	.000	.000	.000	.000	.000	.839

Indirect Effects (Group number 1 - Default model)

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
BReso	.000	.000	.000	.000	.000	.000
BAware	.000	.000	.000	.000	.000	.000
BAttent	.000	.000	.000	.000	.000	.000
BAuthen	.000	.000	.000	.000	.000	.000
BFunct	.000	.000	.000	.000	.000	.000
Wom	.000	.000	.000	.000	.000	.000
BLoy	.000	.000	.000	.000	.000	.000

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunc
BPref	.000	.000	.000	.000	.000	.000
P2_6	.669	.000	.000	.000	.000	.000
P2_5	.709	.000	.000	.000	.000	.000
P2_4	.711	.000	.000	.000	.000	.000
P2_3	.625	.000	.000	.000	.000	.000
P2_2	.628	.000	.000	.000	.000	.000
P2_1	.586	.000	.000	.000	.000	.000
P1_12	.535	.000	.000	.000	.000	.000
P1_13	.589	.000	.000	.000	.000	.000
P1_14	.540	.000	.000	.000	.000	.000
P1_15	.590	.000	.000	.000	.000	.000
P1_16	.600	.000	.000	.000	.000	.000
item33	.513	.000	.000	.000	.000	.000
item35	.539	.000	.000	.000	.000	.000
item34	.549	.000	.000	.000	.000	.000
item32	.499	.000	.000	.000	.000	.000
item9	.650	.000	.000	.000	.000	.000
item8	.570	.000	.000	.000	.000	.000
item27	.641	.000	.000	.000	.000	.000
item16	.439	.000	.000	.000	.000	.000
item17	.503	.000	.000	.000	.000	.000
item22	.579	.000	.000	.000	.000	.000
item21	.624	.000	.000	.000	.000	.000
item20	.637	.000	.000	.000	.000	.000

Standardized Indirect Effects (Group number 1 - Default model)

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunc
BReso	.000	.000	.000	.000	.000	.000
BAware	.000	.000	.000	.000	.000	.000
BAttent	.000	.000	.000	.000	.000	.000
BAuthen	.000	.000	.000	.000	.000	.000
BFunc	.000	.000	.000	.000	.000	.000
Wom	.000	.000	.000	.000	.000	.000
BLoy	.000	.000	.000	.000	.000	.000
BPref	.000	.000	.000	.000	.000	.000
P2_6	.753	.000	.000	.000	.000	.000
P2_5	.782	.000	.000	.000	.000	.000
P2_4	.788	.000	.000	.000	.000	.000
P2_3	.757	.000	.000	.000	.000	.000
P2_2	.747	.000	.000	.000	.000	.000
P2_1	.765	.000	.000	.000	.000	.000
P1_12	.632	.000	.000	.000	.000	.000
P1_13	.707	.000	.000	.000	.000	.000
P1_14	.661	.000	.000	.000	.000	.000
P1_15	.634	.000	.000	.000	.000	.000
P1_16	.652	.000	.000	.000	.000	.000
item33	.646	.000	.000	.000	.000	.000
item35	.674	.000	.000	.000	.000	.000
item34	.693	.000	.000	.000	.000	.000
item32	.682	.000	.000	.000	.000	.000
item9	.796	.000	.000	.000	.000	.000
item8	.735	.000	.000	.000	.000	.000
item27	.727	.000	.000	.000	.000	.000
item16	.588	.000	.000	.000	.000	.000
item17	.636	.000	.000	.000	.000	.000
item22	.707	.000	.000	.000	.000	.000
item21	.773	.000	.000	.000	.000	.000
item20	.769	.000	.000	.000	.000	.000

Modification Indices (Group number 1 - Default model)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change
res2 <-> res1	4.758	.029
U3 <-> res5	4.681	.015
e2_6 <-> res1	5.465	-.041
e35 <-> res1	6.198	.046
e8 <-> e1_13	4.771	.034
e22 <-> res4	4.214	.026
e21 <-> res1	4.202	.033

Variances: (Group number 1 - Default model)

	M.I.	Par Change

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
P1_12 <--- item16	5.156	.120
item35 <--- P1_16	4.636	.095

Minimization History (Default model)

Iteration	Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e 43		-2.299	9999.000	4236.133	0	9999.000

Iteration		Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
1	e	56		-.680	3.604	2619.271	21	.240
2	e	40		-.998	.828	2006.713	7	.996
3	e	21		-.571	.533	1619.066	4	.940
4	e	10		-.230	.522	1317.885	5	.829
5	e	4		-.206	.773	934.824	5	.913
6	e*	2		-.201	1.170	650.859	5	.568
7	e	0	1258.902		.763	409.582	5	.925
8	e	0	307.570		1.212	313.031	1	.896
9	e	0	317.416		.303	280.466	1	1.148
10	e	0	314.500		.103	277.037	1	1.113
11	e	0	307.181		.015	276.889	1	1.043
12	e	0	305.384		.001	276.888	1	1.004
13	e	0	305.473		.000	276.888	1	1.001

Model Fit Summary
CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	104	276.888	247	.093	1.121
Saturated model	351	.000	0		
Independence model	26	4313.689	325	.000	13.273

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.028	.899	.856	.633
Saturated model	.000	1.000		
Independence model	.363	.115	.044	.106

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.936	.916	.993	.990	.993
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.760	.711	.754
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	29.888	.000	74.826
Saturated model	.000	.000	.000
Independence model	3988.689	3780.295	4204.373

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.513	.163	.000	.409
Saturated model	.000	.000	.000	.000
Independence model	23.572	21.796	20.657	22.975

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.026	.000	.041	.998
Independence model	.259	.252	.266	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	484.888	520.888	819.241	923.241
Saturated model	702.000	823.500	1830.442	2181.442
Independence model	4365.689	4374.689	4449.277	4475.277

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.650	2.486	2.895	2.846
Saturated model	3.836	3.836	3.836	4.500
Independence model	23.856	22.717	25.035	23.905

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	189	200
Independence model	16	17

Execution time summary

Minimization:	.018
Miscellaneous:	.842
Bootstrap:	.000
Total:	.860

Appendix Y

AMOS outputs for the Structural equation model of Eveandboy's brand equity and its consumer response factors

C:\Users\Windows\Dropbox\Dissertation\Chapter 5 quantitative result\AMOS second order plus dependent var eveandboy.amw

Analysis Summary

Date and Time

Date: Wednesday, October 31, 2018

Time: 4:08:19 PM

Title

Amos second order plus dependent var eveandboy: Wednesday, October 31, 2018 4:08 PM

Groups

Group number 1 (Group number 1)

Notes for Group (Group number 1)

The model is recursive.

Sample size = 184

Variable Summary (Group number 1)

Your model contains the following variables (Group number 1)

Observed, endogenous variables

item20

item21

item22

item17

item16

item27

item8

item9

item32

item34

item35

item33

P1_16

P1_15

P1_14

P1_13

P1_12

P2_1

P2_2

P2_3

P2_4

P2_5

P2_6

BPref

BLoy

Wom

Unobserved, endogenous variables

BFunc

BAuthen

BAttent

BAware

BReso

Unobserved, exogenous variables

e20

e21

e22

e17

e16

e27

e8

e9

e32

e34

e35

e33

SMEBE

res3

res4

res2

e1_16

e1_15

e1_14

e1_13

e1_12

res1

e2_1

e2_2

e2_4

e2_5

e2_3

res5

e2_6

U1

U2

U3

Variable counts (Group number 1)

Number of variables in your model: 63

Number of observed variables: 26

Number of unobserved variables: 37

Number of exogenous variables: 32



Number of endogenous variables: 31

Parameter Summary (Group number 1)

	Weights	Covariances	Variances	Means	Intercepts	Total
Fixed	36	0	1	0	0	37
Labeled	0	0	0	0	0	0
Unlabeled	26	30	31	0	0	87
Total	62	30	32	0	0	124

Assessment of normality (Group number 1)

Variable	min	max	skew	c.r.	kurtosis	c.r.
Wom	1.000	5.000	-.784	-4.343	1.342	3.717
BLoy	1.000	5.000	-.404	-2.239	.121	.335
BPref	1.000	5.000	-.270	-1.497	.126	.349
P2_6	1.000	5.000	-.254	-1.406	-.195	-.540
P2_5	1.000	5.000	-.078	-.434	-.202	-.559
P2_4	1.000	5.000	-.217	-1.203	-.292	-.808
P2_3	1.000	5.000	.050	.276	.057	.157
P2_2	1.000	5.000	-.310	-1.717	.653	1.809
P2_1	1.000	5.000	-.237	-1.315	.120	.332
P1_12	1.000	5.000	-.227	-1.257	.118	.325
P1_13	1.000	5.000	-.017	-.093	-.324	-.896
P1_14	1.000	5.000	.008	.046	-.398	-1.101
P1_15	1.000	5.000	-.106	-.587	-.475	-1.316
P1_16	1.000	5.000	-.038	-.213	-.453	-1.254
item33	1.000	5.000	-.945	-5.232	1.830	5.068
item35	1.000	5.000	-.182	-1.009	.466	1.290
item34	1.000	5.000	-.126	-.697	.508	1.407
item32	1.000	5.000	-.140	-.776	-.616	-1.706
item9	1.000	5.000	-.351	-1.942	-.171	-.472
item8	1.000	5.000	-.163	-.901	-.357	-.990
item27	1.000	5.000	-.072	-.400	-.548	-1.518
item16	2.000	5.000	.317	1.754	-.346	-.959
item17	2.000	5.000	.040	.222	-.525	-1.455
item22	2.000	5.000	.016	.086	-.662	-1.832
item21	1.000	5.000	-.346	-1.918	-.075	-.207
item20	1.000	5.000	-.226	-1.251	-.193	-.534
Multivariate					162.731	28.925

Models

Default model (Default model)

Notes for Model (Default model)

Computation of degrees of freedom (Default model)

Number of distinct sample moments: 351

Number of distinct parameters to be estimated: 87

Degrees of freedom (351 - 87): 264

Result (Default model)

Minimum was achieved

Chi-square = 295.190

Degrees of freedom = 264

Probability level = .091

Group number 1 (Group number 1 - Default model)

Estimates (Group number 1 - Default model)

Scalar Estimates (Group number 1 - Default model)

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
BAttent <-- SMEBE	.622	.056	11.142	***	par_9
BAuthen <-- SMEBE	.704	.058	12.155	***	par_10
BFunct <-- SMEBE	.629	.058	10.913	***	par_11
BReso <-- SMEBE	.341	.052	6.578	***	par_21
BAware <-- SMEBE	.668	.064	10.502	***	par_23
item20 <-- BFunct	1.000				
item21 <-- BFunct	.952	.085	11.253	***	par_1
item22 <-- BFunct	.857	.086	9.918	***	par_2
item17 <-- BFunct	.752	.081	9.269	***	par_3
item16 <-- BFunct	.581	.080	7.248	***	par_4
item27 <-- BAuthen	1.000				
item8 <-- BAuthen	.832	.089	9.312	***	par_5
item32 <-- BAttent	1.000				
item34 <-- BAttent	.535	.088	6.107	***	par_6
item35 <-- BAttent	.754	.094	8.022	***	par_7
item33 <-- BAttent	.337	.097	3.469	***	par_8
item9 <-- BAuthen	.861	.087	9.882	***	par_12
P1_16 <-- BAware	1.000				
P1_15 <-- BAware	.879	.069	12.768	***	par_13
P1_14 <-- BAware	.767	.069	11.042	***	par_14
P1_13 <-- BAware	.623	.068	9.168	***	par_15
P1_12 <-- BAware	.521	.067	7.815	***	par_16
P2_1 <-- BReso	1.000				
P2_2 <-- BReso	1.177	.157	7.519	***	par_17
P2_3 <-- BReso	1.685	.241	6.997	***	par_18
P2_4 <-- BReso	1.714	.245	6.990	***	par_19

			Estimate	S.E.	C.R.	P	Label
P2_5	<--	BReso	1.625	.235	6.928	***	par_20
P2_6	<--	BReso	1.345	.221	6.092	***	par_22
Wom	<--	SMEBE	.363	.047	7.788	***	par_24
BLoy	<--	SMEBE	.561	.053	10.658	***	par_25
BPref	<--	SMEBE	.537	.045	11.831	***	par_26

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
BAttent	<--	SMEBE	.936
BAuthen	<--	SMEBE	.990
BFunc	<--	SMEBE	.892
BReso	<--	SMEBE	.817
BAware	<--	SMEBE	.797
item20	<--	BFunc	.794
item21	<--	BFunc	.796
item22	<--	BFunc	.708
item17	<--	BFunc	.648
item16	<--	BFunc	.538
item27	<--	BAuthen	.784
item8	<--	BAuthen	.666
item32	<--	BAttent	.778
item34	<--	BAttent	.477
item35	<--	BAttent	.614
item33	<--	BAttent	.276
item9	<--	BAuthen	.700
P1_16	<--	BAware	.850
P1_15	<--	BAware	.809
P1_14	<--	BAware	.726
P1_13	<--	BAware	.633
P1_12	<--	BAware	.557
P2_1	<--	BReso	.505
P2_2	<--	BReso	.602
P2_3	<--	BReso	.805
P2_4	<--	BReso	.792
P2_5	<--	BReso	.738
P2_6	<--	BReso	.662
Wom	<--	SMEBE	.550
BLoy	<--	SMEBE	.704
BPref	<--	SMEBE	.759

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
e34	<-->	e33	.285	.044	6.417	***	par_27
U1	<-->	U2	.137	.024	5.583	***	par_28
e17	<-->	e16	.163	.034	4.744	***	par_29
e2_3	<-->	e2_6	-.226	.035	-6.492	***	par_30
e2_1	<-->	e2_2	.148	.034	4.372	***	par_31
U2	<-->	U3	.112	.026	4.273	***	par_32
e21	<-->	e34	-.078	.023	-3.481	***	par_33
e1_16	<-->	e2_2	-.122	.028	-4.351	***	par_34
e21	<-->	e2_3	-.081	.024	-3.364	***	par_35
e2_2	<-->	e2_5	.087	.029	2.997	.003	par_36
e8	<-->	e2_3	-.099	.027	-3.629	***	par_37
e20	<-->	e17	.046	.030	1.532	.126	par_38
e2_4	<-->	e2_6	-.117	.037	-3.185	.001	par_39
e1_13	<-->	e1_12	.069	.033	2.060	.039	par_40
e34	<-->	e35	.152	.036	4.176	***	par_41
e35	<-->	e33	.157	.041	3.783	***	par_42
e1_16	<-->	e2_6	-.092	.030	-3.108	.002	par_43
e8	<-->	e9	.097	.037	2.606	.009	par_44
e8	<-->	e1_14	-.059	.030	-1.943	.052	par_45
U1	<-->	U3	.061	.021	2.885	.004	par_46
e16	<-->	e1_13	-.022	.027	-.811	.417	par_47
e16	<-->	e2_3	.054	.024	2.212	.027	par_48
e20	<-->	e2_3	-.063	.024	-2.650	.008	par_49
e16	<-->	e2_1	.069	.029	2.422	.015	par_50
e20	<-->	e1_14	.067	.028	2.390	.017	par_51
e34	<-->	e2_4	-.050	.024	-2.126	.034	par_52
e1_12	<-->	e2_1	.070	.032	2.158	.031	par_53
e35	<-->	e2_2	-.054	.026	-2.081	.037	par_54
e2_5	<-->	U2	.049	.021	2.321	.020	par_55
e21	<-->	e17	-.056	.026	-2.177	.030	par_56

Correlations: (Group number 1 - Default model)

		Estimate	
e34	<-->	e33	.559
U1	<-->	U2	.526
e17	<-->	e16	.407
e2_3	<-->	e2_6	-.686
e2_1	<-->	e2_2	.319

		Estimate
U2 <--> U3		.360
e21 <--> e34		-.236
e1_16 <--> e2_2		-.360
e21 <--> e2_3		-.306
e2_2 <--> e2_5		.215
e8 <--> e2_3		-.289
e20 <--> e17		.136
e2_4 <--> e2_6		-.334
e1_13 <--> e1_12		.166
e34 <--> e35		.361
e35 <--> e33		.313
e1_16 <--> e2_6		-.278
e8 <--> e9		.234
e8 <--> e1_14		-.147
U1 <--> U3		.240
e16 <--> e1_13		-.054
e16 <--> e2_3		.161
e20 <--> e2_3		-.227
e16 <--> e2_1		.152
e20 <--> e1_14		.203
e34 <--> e2_4		-.140
e1_12 <--> e2_1		.150
e35 <--> e2_2		-.129
e2_5 <--> U2		.140
e21 <--> e17		-.177

Variances: (Group number 1 - Default model)

	Estimate	S.E.	C.R.	P	Label
SMEBE	1.000				
res3	.010	.030	.323	.747	par_57
res4	.054	.040	1.352	.176	par_58
res2	.101	.028	3.586	***	par_59
res1	.256	.047	5.418	***	par_60
res5	.058	.017	3.412	***	par_61
e20	.291	.040	7.340	***	par_62
e21	.259	.036	7.228	***	par_63
e22	.362	.043	8.464	***	par_64
e17	.389	.048	8.119	***	par_65
e16	.412	.045	9.185	***	par_66
e27	.317	.044	7.262	***	par_67
e8	.438	.052	8.499	***	par_68
e9	.391	.048	8.220	***	par_69
e32	.288	.049	5.886	***	par_70
e34	.427	.047	9.149	***	par_71
e35	.413	.049	8.432	***	par_72
e33	.608	.065	9.421	***	par_73
e1_16	.271	.043	6.365	***	par_74
e1_15	.286	.039	7.408	***	par_75
e1_14	.370	.045	8.321	***	par_76
e1_13	.407	.046	8.804	***	par_77
e1_12	.423	.047	9.043	***	par_78
e2_1	.508	.054	9.472	***	par_79
e2_2	.425	.045	9.525	***	par_80
e2_4	.304	.041	7.329	***	par_81
e2_5	.383	.044	8.810	***	par_82
e2_3	.269	.039	6.929	***	par_83
e2_6	.404	.053	7.620	***	par_84
U1	.212	.025	8.480	***	par_85
U2	.319	.036	8.805	***	par_86
U3	.303	.033	9.197	***	par_87

Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
BReso	.667
BAware	.635
BAttent	.877
BAuthen	.981
BFunct	.796
Wom	.303
BLoy	.496
BPref	.577
P2_6	.438
P2_5	.545
P2_4	.627
P2_3	.648
P2_2	.362
P2_1	.255
P1_12	.311
P1_13	.401

	Estimate
P1_14	.527
P1_15	.655
P1_16	.722
item33	.076
item35	.377
item34	.228
item32	.605
item9	.490
item8	.444
item27	.615
item16	.289
item17	.420
item22	.502
item21	.634
item20	.630

Factor Score Weights (Group number 1 - Default model)

	W o m	B L o y	B P r e f	P _6	P _5	P _4	P _3	P _2	P _2	P _2	P _1	P _1	P _1	P _1	P _1	i t e m 3 3	i t e m 3 5	i t e m 3 4	i t e m 3 2	i t e m 9	i t e m 8	i t e m 7	i t e m 1 6	i t e m 1 7	i t e m 2 2	i t e m 2 1	i t e m 2 0
S	.0	.0	.1	.2	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.1	.0	.0	.0	.1	.0	.0
M	.3	.6	.3	.2	.3	.9	.3	.1	.2	.3	.9	.3	.1	.2	.3	.9	.3	.1	.2	.3	.9	.3	.1	.2	.3	.9	.3
E	.7	.4	.4	.2	.3	.5	.0	.4	.8	.3	.2	.5	.0	.3	.3	.1	.9	.2	.7	.1	.3	.8	.2	.9	.4	.4	
B	.0	.0	.0	.1	.0	.1	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
R	.0	.0	.0	.9	.1	.0	.4	.1	.1	.0	.1	.1	.0	.1	.1	.2	.4	.1	.9	.0	.5	.1	.4	.1	.1	.9	.7
e	.2	.7	.6	.1	.5	.4	.1	.8	.1	.0	.8	.1	.0	.0	.9	.4	.9	.0	.3	.0	.2	.1	.4	.1	.8	.5	.2
s	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.1	.2	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
s	.0	.2	.1	.8	.5	.0	.4	.1	.5	.8	.1	.5	.6	.6	.0	.7	.3	.7	.5	.3	.3	.0	.4	.2	.1	.0	.3
B	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
A	.0	.2	.1	.8	.5	.0	.4	.1	.5	.8	.1	.5	.6	.6	.0	.7	.3	.7	.5	.3	.3	.0	.4	.2	.1	.0	.3
w	.2	.0	.1	.1	.6	.4	.7	.5	.8	.1	.5	.6	.6	.0	.7	.3	.7	.5	.3	.3	.0	.4	.2	.1	.0	.3	.1
a	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
r	.0	.2	.1	.8	.5	.0	.4	.1	.5	.8	.1	.5	.6	.6	.0	.7	.3	.7	.5	.3	.3	.0	.4	.2	.1	.0	.3
e	.2	.0	.1	.1	.6	.4	.7	.5	.8	.1	.5	.6	.6	.0	.7	.3	.7	.5	.3	.3	.0	.4	.2	.1	.0	.3	.1
B	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
A	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
t	.1	.3	.6	.5	.2	.2	.9	.2	.1	.7	.1	.3	.7	.5	.1	.3	.8	.2	.7	.4	.7	.6	.7	.8	.3	.0	.0
t	.8	.2	.4	.9	.2	.1	.1	.7	.3	.7	.5	.1	.3	.8	.2	.7	.4	.7	.6	.7	.8	.3	.0	.6	.7	.4	.8
B	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
A	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
u	.2	.4	.8	.8	.2	.2	.3	.2	.1	.2	.9	.8	.8	.9	.1	.0	.4	.2	.1	.7	.6	.0	.1	.0	.3	.2	.5
t	.5	.2	.9	.2	.4	.2	.1	.2	.2	.2	.9	.8	.8	.9	.1	.0	.4	.2	.1	.7	.6	.0	.1	.0	.3	.2	.5
B	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
F	.0	.2	.2	.5	.3	.0	.4	.0	.1	.1	.8	.6	.4	.1	.9	.2	.3	.3	.4	.0	.8	.2	.1	.4	.3	.1	.0
F	.7	.1	.7	.8	.3	.0	.7	.0	.1	.8	.6	.4	.1	.9	.2	.3	.4	.0	.1	.5	.2	.7	.4	.1	.6	.5	.9
u	.7	.1	.7	.8	.3	.0	.7	.0	.1	.8	.6	.4	.1	.9	.2	.3	.4	.0	.1	.5	.2	.7	.4	.1	.6	.5	.9
n	.7	.1	.7	.8	.3	.0	.7	.0	.1	.8	.6	.4	.1	.9	.2	.3	.4	.0	.1	.5	.2	.7	.4	.1	.6	.5	.9
c	.7	.1	.7	.8	.3	.0	.7	.0	.1	.8	.6	.4	.1	.9	.2	.3	.4	.0	.1	.5	.2	.7	.4	.1	.6	.5	.9
t	.7	.1	.7	.8	.3	.0	.7	.0	.1	.8	.6	.4	.1	.9	.2	.3	.4	.0	.1	.5	.2	.7	.4	.1	.6	.5	.9

Total Effects (Group number 1 - Default model)

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunc
BReso	.341	.000	.000	.000	.000	.000
BAware	.668	.000	.000	.000	.000	.000
BAttent	.622	.000	.000	.000	.000	.000
BAuthen	.704	.000	.000	.000	.000	.000
BFunc	.629	.000	.000	.000	.000	.000
Wom	.363	.000	.000	.000	.000	.000
BLoy	.561	.000	.000	.000	.000	.000
BPref	.537	.000	.000	.000	.000	.000
P2_6	.458	1.345	.000	.000	.000	.000
P2_5	.554	1.625	.000	.000	.000	.000
P2_4	.584	1.714	.000	.000	.000	.000
P2_3	.574	1.685	.000	.000	.000	.000
P2_2	.401	1.177	.000	.000	.000	.000
P2_1	.341	1.000	.000	.000	.000	.000
P1_12	.348	.000	.521	.000	.000	.000
P1_13	.416	.000	.623	.000	.000	.000
P1_14	.512	.000	.767	.000	.000	.000
P1_15	.587	.000	.879	.000	.000	.000
P1_16	.668	.000	1.000	.000	.000	.000
item33	.210	.000	.000	.337	.000	.000
item35	.468	.000	.000	.754	.000	.000
item34	.332	.000	.000	.535	.000	.000
item32	.622	.000	.000	1.000	.000	.000

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
item9	.607	.000	.000	.000	.861	.000
item8	.586	.000	.000	.000	.832	.000
item27	.704	.000	.000	.000	1.000	.000
item16	.365	.000	.000	.000	.000	.581
item17	.473	.000	.000	.000	.000	.752
item22	.539	.000	.000	.000	.000	.857
item21	.598	.000	.000	.000	.000	.952
item20	.629	.000	.000	.000	.000	1.000

Standardized Total Effects (Group number 1 - Default model)

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
BReso	.817	.000	.000	.000	.000	.000
BAware	.797	.000	.000	.000	.000	.000
BAttent	.936	.000	.000	.000	.000	.000
BAuthen	.990	.000	.000	.000	.000	.000
BFunct	.892	.000	.000	.000	.000	.000
Wom	.550	.000	.000	.000	.000	.000
BLoy	.704	.000	.000	.000	.000	.000
BPref	.759	.000	.000	.000	.000	.000
P2_6	.540	.662	.000	.000	.000	.000
P2_5	.603	.738	.000	.000	.000	.000
P2_4	.647	.792	.000	.000	.000	.000
P2_3	.658	.805	.000	.000	.000	.000
P2_2	.492	.602	.000	.000	.000	.000
P2_1	.413	.505	.000	.000	.000	.000
P1_12	.444	.000	.557	.000	.000	.000
P1_13	.505	.000	.633	.000	.000	.000
P1_14	.579	.000	.726	.000	.000	.000
P1_15	.645	.000	.809	.000	.000	.000
P1_16	.677	.000	.850	.000	.000	.000
item33	.258	.000	.000	.276	.000	.000
item35	.575	.000	.000	.614	.000	.000
item34	.447	.000	.000	.477	.000	.000
item32	.728	.000	.000	.778	.000	.000
item9	.693	.000	.000	.000	.700	.000
item8	.660	.000	.000	.000	.666	.000
item27	.776	.000	.000	.000	.784	.000
item16	.480	.000	.000	.000	.000	.538
item17	.578	.000	.000	.000	.000	.648
item22	.632	.000	.000	.000	.000	.708
item21	.711	.000	.000	.000	.000	.796
item20	.708	.000	.000	.000	.000	.794

Direct Effects (Group number 1 - Default model)

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
BReso	.341	.000	.000	.000	.000	.000
BAware	.668	.000	.000	.000	.000	.000
BAttent	.622	.000	.000	.000	.000	.000
BAuthen	.704	.000	.000	.000	.000	.000
BFunct	.629	.000	.000	.000	.000	.000
Wom	.363	.000	.000	.000	.000	.000
BLoy	.561	.000	.000	.000	.000	.000
BPref	.537	.000	.000	.000	.000	.000
P2_6	.000	1.345	.000	.000	.000	.000
P2_5	.000	1.625	.000	.000	.000	.000
P2_4	.000	1.714	.000	.000	.000	.000
P2_3	.000	1.685	.000	.000	.000	.000
P2_2	.000	1.177	.000	.000	.000	.000
P2_1	.000	1.000	.000	.000	.000	.000
P1_12	.000	.000	.521	.000	.000	.000
P1_13	.000	.000	.623	.000	.000	.000
P1_14	.000	.000	.767	.000	.000	.000
P1_15	.000	.000	.879	.000	.000	.000
P1_16	.000	.000	1.000	.000	.000	.000
item33	.000	.000	.000	.337	.000	.000
item35	.000	.000	.000	.754	.000	.000
item34	.000	.000	.000	.535	.000	.000
item32	.000	.000	.000	1.000	.000	.000
item9	.000	.000	.000	.000	.861	.000
item8	.000	.000	.000	.000	.832	.000
item27	.000	.000	.000	.000	1.000	.000
item16	.000	.000	.000	.000	.000	.581
item17	.000	.000	.000	.000	.000	.752
item22	.000	.000	.000	.000	.000	.857
item21	.000	.000	.000	.000	.000	.952
item20	.000	.000	.000	.000	.000	1.000

Standardized Direct Effects (Group number 1 - Default model)

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
BReso	.817	.000	.000	.000	.000	.000

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
BAware	.797	.000	.000	.000	.000	.000
BAttent	.936	.000	.000	.000	.000	.000
BAuthen	.990	.000	.000	.000	.000	.000
BFunct	.892	.000	.000	.000	.000	.000
Wom	.550	.000	.000	.000	.000	.000
BLoy	.704	.000	.000	.000	.000	.000
BPref	.759	.000	.000	.000	.000	.000
P2_6	.000	.662	.000	.000	.000	.000
P2_5	.000	.738	.000	.000	.000	.000
P2_4	.000	.792	.000	.000	.000	.000
P2_3	.000	.805	.000	.000	.000	.000
P2_2	.000	.602	.000	.000	.000	.000
P2_1	.000	.505	.000	.000	.000	.000
P1_12	.000	.000	.557	.000	.000	.000
P1_13	.000	.000	.633	.000	.000	.000
P1_14	.000	.000	.726	.000	.000	.000
P1_15	.000	.000	.809	.000	.000	.000
P1_16	.000	.000	.850	.000	.000	.000
item33	.000	.000	.000	.276	.000	.000
item35	.000	.000	.000	.614	.000	.000
item34	.000	.000	.000	.477	.000	.000
item32	.000	.000	.000	.778	.000	.000
item9	.000	.000	.000	.000	.700	.000
item8	.000	.000	.000	.000	.666	.000
item27	.000	.000	.000	.000	.784	.000
item16	.000	.000	.000	.000	.000	.538
item17	.000	.000	.000	.000	.000	.648
item22	.000	.000	.000	.000	.000	.708
item21	.000	.000	.000	.000	.000	.796
item20	.000	.000	.000	.000	.000	.794

Indirect Effects (Group number 1 - Default model)

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
BReso	.000	.000	.000	.000	.000	.000
BAware	.000	.000	.000	.000	.000	.000
BAttent	.000	.000	.000	.000	.000	.000
BAuthen	.000	.000	.000	.000	.000	.000
BFunct	.000	.000	.000	.000	.000	.000
Wom	.000	.000	.000	.000	.000	.000
BLoy	.000	.000	.000	.000	.000	.000
BPref	.000	.000	.000	.000	.000	.000
P2_6	.458	.000	.000	.000	.000	.000
P2_5	.554	.000	.000	.000	.000	.000
P2_4	.584	.000	.000	.000	.000	.000
P2_3	.574	.000	.000	.000	.000	.000
P2_2	.401	.000	.000	.000	.000	.000
P2_1	.341	.000	.000	.000	.000	.000
P1_12	.348	.000	.000	.000	.000	.000
P1_13	.416	.000	.000	.000	.000	.000
P1_14	.512	.000	.000	.000	.000	.000
P1_15	.587	.000	.000	.000	.000	.000
P1_16	.668	.000	.000	.000	.000	.000
item33	.210	.000	.000	.000	.000	.000
item35	.468	.000	.000	.000	.000	.000
item34	.332	.000	.000	.000	.000	.000
item32	.622	.000	.000	.000	.000	.000
item9	.607	.000	.000	.000	.000	.000
item8	.586	.000	.000	.000	.000	.000
item27	.704	.000	.000	.000	.000	.000
item16	.365	.000	.000	.000	.000	.000
item17	.473	.000	.000	.000	.000	.000
item22	.539	.000	.000	.000	.000	.000
item21	.598	.000	.000	.000	.000	.000
item20	.629	.000	.000	.000	.000	.000

Standardized Indirect Effects (Group number 1 - Default model)

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
BReso	.000	.000	.000	.000	.000	.000
BAware	.000	.000	.000	.000	.000	.000
BAttent	.000	.000	.000	.000	.000	.000
BAuthen	.000	.000	.000	.000	.000	.000
BFunct	.000	.000	.000	.000	.000	.000
Wom	.000	.000	.000	.000	.000	.000
BLoy	.000	.000	.000	.000	.000	.000
BPref	.000	.000	.000	.000	.000	.000
P2_6	.540	.000	.000	.000	.000	.000
P2_5	.603	.000	.000	.000	.000	.000
P2_4	.647	.000	.000	.000	.000	.000
P2_3	.658	.000	.000	.000	.000	.000

	SMEBE	BReso	BAware	BAttent	BAuthen	BFunct
P2_2	.492	.000	.000	.000	.000	.000
P2_1	.413	.000	.000	.000	.000	.000
P1_12	.444	.000	.000	.000	.000	.000
P1_13	.505	.000	.000	.000	.000	.000
P1_14	.579	.000	.000	.000	.000	.000
P1_15	.645	.000	.000	.000	.000	.000
P1_16	.677	.000	.000	.000	.000	.000
item33	.258	.000	.000	.000	.000	.000
item35	.575	.000	.000	.000	.000	.000
item34	.447	.000	.000	.000	.000	.000
item32	.728	.000	.000	.000	.000	.000
item9	.693	.000	.000	.000	.000	.000
item8	.660	.000	.000	.000	.000	.000
item27	.776	.000	.000	.000	.000	.000
item16	.480	.000	.000	.000	.000	.000
item17	.578	.000	.000	.000	.000	.000
item22	.632	.000	.000	.000	.000	.000
item21	.711	.000	.000	.000	.000	.000
item20	.708	.000	.000	.000	.000	.000

Modification Indices (Group number 1 - Default model)

Covariances: (Group number 1 - Default model)

	M.I.	Par Change
U3 <-> res1	4.522	-.051
e2_2 <-> U3	4.191	.044
e2_1 <-> U1	8.941	.057
e1_15 <-> U3	4.492	-.048
e33 <-> res1	5.022	-.066
e16 <-> U2	5.814	-.046
e22 <-> res5	5.125	-.030
e22 <-> e2_3	6.566	-.063
e21 <-> res1	5.209	-.057

Variances: (Group number 1 - Default model)

	M.I.	Par Change

Regression Weights: (Group number 1 - Default model)

	M.I.	Par Change
BLoy <-- item16	5.737	-.106
BPref <-- P2_1	5.764	.085
P2_3 <-- item22	5.590	-.109
P2_2 <-- Wom	5.114	.143
P1_13 <-- item33	4.830	-.129
P1_14 <-- P2_2	4.496	.121
P1_15 <-- Wom	4.927	-.148
P1_15 <-- item34	5.482	-.138
item22 <-- BLoy	4.366	.123

Minimization History (Default model)

Iteration	Negative eigenvalues	Condition #	Smallest eigenvalue	Diameter	F	NTries	Ratio
0	e 22		-1.659	9999.000	2809.357	0	9999.000
1	e 19		-.598	2.806	1747.737	21	.331
2	e* 11		-.175	.905	1250.108	6	.960
3	e 5		-.128	.923	866.689	5	.898
4	e* 0	979.605		1.359	474.360	5	.792
5	e 0	167.392		.412	433.824	5	.000
6	e 0	100.536		.615	350.182	2	.000
7	e 0	105.433		.528	307.319	1	1.168
8	e 0	253.037		.403	298.426	1	1.107
9	e 0	527.416		.267	295.697	1	1.158
10	e 0	964.424		.193	295.232	1	1.118
11	e 0	1174.985		.059	295.190	1	1.061
12	e 0	1212.034		.009	295.190	1	1.009
13	e 0	1215.018		.000	295.190	1	1.000

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	87	295.190	264	.091	1.118
Saturated model	351	.000	0		
Independence model	26	2829.880	325	.000	8.707

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.037	.891	.855	.670
Saturated model	.000	1.000		
Independence model	.278	.200	.136	.185

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
Default model	.896	.872	.988	.985	.988
Saturated model	1.000		1.000		1.000

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.812	.728	.802
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

NCP

Model	NCP	LO 90	HI 90
Default model	31.190	.000	77.411
Saturated model	.000	.000	.000
Independence model	2504.880	2338.615	2678.532

FMIN

Model	FMIN	F0	LO 90	HI 90
Default model	1.613	.170	.000	.423
Saturated model	.000	.000	.000	.000
Independence model	15.464	13.688	12.779	14.637

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.025	.000	.040	.999
Independence model	.205	.198	.212	.000

AIC

Model	AIC	BCC	BIC	CAIC
Default model	469.190	499.305	748.889	835.889
Saturated model	702.000	823.500	1830.442	2181.442
Independence model	2881.880	2890.880	2965.469	2991.469

ECVI

Model	ECVI	LO 90	HI 90	MECVI
Default model	2.564	2.393	2.816	2.728
Saturated model	3.836	3.836	3.836	4.500
Independence model	15.748	14.839	16.697	15.797

HOELTER

Model	HOELTER .05	HOELTER .01
Default model	188	199
Independence model	24	26

Execution time summary

Minimization:	.010
Miscellaneous:	1.097
Bootstrap:	.000
Total:	1.107

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