

GENDER AND FINANCIAL ACCESS OF SMES IN SOUTHEAST ASIA



Miss Wannaporn Phongapai

จุฬาลงกรณ์มหาวิทยาลัย

บทคัดย่อและแฟ้มข้อมูลฉบับเต็มของวิทยานิพนธ์ตั้งแต่ปีการศึกษา 2554 ที่ให้บริการในคลังปัญญาจุฬาฯ (CUIR)
เป็นแฟ้มข้อมูลของนิสิตเจ้าของวิทยานิพนธ์ ที่ส่งผ่านทางบัณฑิตวิทยาลัย

The abstract and full text of theses from the academic year 2011 in Chulalongkorn University Intellectual Repository (CUIR)
are the thesis authors' files submitted through the University Graduate School.

A Thesis Submitted in Partial Fulfillment of the Requirements

for the Degree of Master of Science Program in Finance

Department of Banking and Finance

Faculty of Commerce and Accountancy

Chulalongkorn University

Academic Year 2017

Copyright of Chulalongkorn University

เพศและการเข้าถึงแหล่งทุนของวิสาหกิจขนาดกลางและขนาดย่อมในภูมิภาคเอเชียตะวันออกเฉียงใต้



วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาวิทยาศาสตรมหาบัณฑิต

สาขาวิชาการเงิน ภาควิชาการธนาคารและการเงิน

คณะพาณิชยศาสตร์และการบัญชี จุฬาลงกรณ์มหาวิทยาลัย

ปีการศึกษา 2560

ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

6082962926 : MAJOR FINANCE

KEYWORDS: GENDER / DISCRIMINATION / SMES / SOUTHEAST ASIA / FINANCIAL ACCESS

WANNAPORN PHONGAPAI: GENDER AND FINANCIAL ACCESS OF SMES IN SOUTHEAST ASIA. ADVISOR: ASSOC. PROF. SUNTI TIRAPAT, Ph.D., 64 pp.

This study examines gender and cultural differences in financial access of small and medium-sized enterprises (SMEs) in six countries within Southeast Asia (SEA): Thailand, Laos, Cambodia, Myanmar, Indonesia, and Malaysia. This study uses World Bank Enterprise Surveys dataset which covers 2015 and 2016 to investigate the gender gap in financial access of SMEs in SEA and compare the business performance of enterprises that are owned by males and females. The result shows that there is no significant difference between the financial access of female- and male-owned SMEs in SEA which means that there is no gender gap in financial access of SMEs. Nevertheless, the finding shows that there is a difference between the business performance of female- and male-owned SMEs. The business performance of female-owned SMEs in SEA are poorer than their counterparts. Moreover, as the culture may influence access to finance of SMEs across countries, hence, the researcher examines financial access of SMEs in different cultures, investigates the proportion of internal fund that is used by SMEs in their day-to-day operations and examines an impact of culture on the proportion of internal fund that is used by SMEs. The result indicates that there is no statistical significance between financial access of SMEs in non-Buddhist culture and no significant difference between the proportion of internal fund that is employed by the female- and male-owned enterprises in their daily operations. Nonetheless, the results show that there is a statistically significant difference between the proportion of internal fund that is used by SMEs across culture. SMEs in Buddhist culture are likely to use more proportion of internal fund to finance their day-to-day operations than SMEs in countries with non-Buddhist culture.

Department: Banking and Finance Student's Signature

Field of Study: Finance Advisor's Signature

Academic Year: 2017

ACKNOWLEDGEMENTS

I would like to express my sincere appreciation and respect to my thesis advisor Assoc. Prof. Sunti Tirapat Ph.D. for his invaluable guidance. Without his support, the completion of this study would not have been possible. I would like to give special thanks for his continuous encouragement.

I owe my deepest sense of gratitude to the committee for the fulfillment of this thesis, especially, their guidance concerning my research hypothesis and models.

I would like to thank my beloved classmates, faculty and staffs at Master of Science in Finance, Chulalongkorn University for their kind assistance and advice.

Lastly, my heartfelt appreciation goes to my wonderful family for nursing and encouraging me during hard times.



จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

CONTENTS

	Page
THAI ABSTRACT	iv
ENGLISH ABSTRACT	v
ACKNOWLEDGEMENTS	vi
CONTENTS	vii
CHAPTER 1.....	1
INTRODUCTION.....	1
1.1 BACKGROUND AND PROBLEM REVIEW	1
1.2 STATEMENT OF PROBLEM.....	4
1.3 OBJECTIVE.....	5
1.4 RESEACH HYPOTHESIS.....	6
1.5 SCOPE OF THE STUDY.....	6
1.6 TERMS AND DEFINITIONS	7
CHAPTER 2.....	5
LITERATURE REVIEW	5
2.1 CONCEPT AND THEORY.....	5
2.2 RELEVANT RESEARCH.....	7
2.3 HYPOTHESIS DEVELOPMENT	10
FINANCIAL ACCESS.....	10
BUSINESS PERFORMANCE	13
CULTURAL DIFFERENCE	14
CHAPTER 3.....	16
DATA.....	16

3.1 DATA SAMPLE	16
3.2 DATA DESCRIPTION	17
CHAPTER 4.....	28
METHODOLOGY.....	28
4.1 VARIABLES.....	28
CONTROL VARIABLES	28
GENDER VARIABLES.....	30
DEPENDENT VARIABLES.....	31
4.2 REGRESSION ANALYSIS	31
FINANCIAL ACCESS.....	31
BUSINESS PERFORMANCE	34
CULTURAL DIFFERENCE	34
CHAPTER 5.....	36
EMPIRICAL RESULTS.....	36
5.1 FINANCIAL ACCESS.....	36
5.2 BUSINESS PERFORMANCE	40
5.3 CULTURAL DIFFERENCE.....	42
CHAPTER 6.....	49
CONCLUSION	49
REFERENCES	53
VITA.....	64

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND AND PROBLEM REVIEW

Over a decade, SMEs have contributed a significant part of GDP as well as raising the level of employment of countries around the world. For example, in 2012, SMEs contributed approximately 59% of the national GDP in Indonesia. In 2013, there are contributions from SMEs to a country GDP of 37% and 34% in Thailand and Philippines, respectively. Additionally, SMEs contributed to high employment in these countries: 97% in Indonesia, 81% in Thailand and 73% in the Philippines (Mehrotra, Tan and Ng, 2015). SMEs also wider a range of products and services for customers in the domestic market (Smallbone, Welter, Isakova and Slonimski, 2001). Despite the fact that SMEs provide benefits to the nation, these enterprises confront with several obstacles which slow down the growth of their business. This can lead to both direct and indirect negative impacts on economic growth and GDP of a country.

One of the main problems, apart from lack of skilled workers, lack of technological knowledge and the difficulty in accessing to markets, which can be considered as a major constraint for SMEs is financial access (Vandenberg, Chantapacdepong and Yoshino, 2016). A study by Moreira (2016) about the impact of access to finance on business growth of companies in high-tech and internet industry reports that by there is a positive relationship between access to finance of the

business and business growth as access to finance could help an expansion and the growth of the business. Moreover, SMEs that owned by women are likely to confront with this problem more than enterprises that owned by men. Many studies find that gender is an important factor that influences access to finance of the SMEs. One of the studies that covers 34 countries, which are mainly in Eastern Europe and Central Asia, reports that female-managed firms pay higher interest rates and get lower chance to receive loans (Muravyev et al., 2009). The evidence of recent study shows that female-owned enterprises in Swaziland (Africa) have less access to finance and less capital compared to male (Brixiová and Kangoye, 2016). In the study about the main constraints of female entrepreneurs in developing nations by Tambunan (2009) reports that there is a male-dominated culture in developing countries in Asia, especially, in business, which is a reason that supports why most of the large enterprises are owned by males. A study by Aggarwal and Goodell (2014) also finds that countries with male-dominated culture are found to have a low level of financial access. In addition, previous empirical evidence finds that among men and women-owned enterprises in India, women suffer more with financial hardship. In the absence of collateral, female-owned businesses with no support by male (family members or husband) are viewed as a high-risk profile. This causes a difference in the level of financial access between male and female entrepreneurs. (Improving Access to Finance for Women-owned Businesses in India, 2014). The studies by Gouda and Potrafke (2016) and Donno (2006) also find that discrimination against gender is

generally found in countries with Islamic legislation. The evidence above may imply that gender discrimination is a serious problem that women-owned enterprises are facing, and it could be observed from a number of studies around the world.

On the other hand, there are empirical evidence report that women are likely to have lower credit risks than men. One of microfinance study about the loan repayment of females by Espallier, Guérin, and Mersland (2011) shows that women improve repayment of loans in individual-based lenders, NGOs, and regulated microfinance institutions (MFIs). In general, credit risks of women are relatively lesser than men, including lower loan loss provision, lower portfolio risk, and lower write-offs. Women are found to be better savers and have higher loan repayment records (Mayoux, 2007). This means debt repayment rate of women is relatively greater than men. Thus, the findings of gender discrimination of SME owners, specifically against women, contradict with the evidence from microfinance study.

On the one hand, there is a study by Aterido, Beck, and Iacovone (2013) finds that there is no gender gap in access to finance in Sub-Saharan Africa. Another study by Storey (2004) also finds no statistical significance of sex on loan denial rate. The evidence about discrimination against sex of entrepreneurs in financial access is likely to be inconclusive. Do female-owned enterprises face discrimination when applying for credit? Recently, this question receives attention from people around the world.

1.2 STATEMENT OF PROBLEM

Most of the recent papers that study about gender discrimination and financial access of the enterprises focus on factors that are relevant to companies' revenue, which is performance-based, and the majority of them are based on African, South Asian and U.S. data. As there are many different conditions that may be specific only to countries within Africa, South Asia and the U.S.A. such as main religion, culture, market conditions and institution, evidence that has been found in these nations might not be applicable for other countries.

Moreover, there are cultural differences across countries which may affect the level of accessing to finance of SMEs in SEA. A study by Schnabel (2018) which studies about gender gaps in different religious, reports that there is a small gender gap in countries with Buddhist and Hindu cultures; however, the results show a more significant gender gap in Islamic as well as Christian nations. Additionally, many studies find that there is a low level of financial access of female-owned SMEs in countries with male-dominated culture as well as countries with Islamic legislation (Ongena and Popov, 2016; Potrafke, 2016; Donno, 2006; Demirguc Kunt et al., 2015), thus, women-owned SMEs in countries with high-gender bias might face greater difficulties in accessing to finance compared to female-owned SMEs in low-gender bias culture.

To the best of my knowledge, there are a few studies that examine gender as

well as cultural differences in financial access of SMEs in SEA. Hence, this study will use World Bank Enterprise Surveys dataset, covering six countries in SEA: Thailand, Laos, Cambodia, Myanmar, Indonesia and Malaysia in order to examine whether the constraint for SMEs in access to finance is gender-based discrimination or not. This study will also investigate the cultural difference in financial access of SMEs in SEA. As if gender is the problem that restricts financial access of SMEs in SEA developing nations, the finding would help policymakers realize the problem. By alleviating the severity of this problem in the society, it would make a country a step closer to a developed nation. In addition, based on the study from Kim, Lee and Shin (2016), if gender inequality is being eliminated from the society, aggregate income of one and two generations from now will increase approximately 6.6% and 14.5% compared to the benchmark economy.

1.3 OBJECTIVE

This study aims to examine financial access of SMEs in six nations in SEA including Thailand, Laos, Cambodia, Myanmar, Indonesia and Malaysia. Investigating whether women-owned SMEs in SEA are facing with constraints when access to finance or not. The researcher also aims to compare the business performance of enterprises that owned by male and female in order to further investigate the rationale behind the difference in the level of financial access by different gender of business owners in these countries. Moreover, this study will examine financial

access of SMEs in different cultures. The researcher will also examine whether the proportion of internal fund that is used by female-owned SME is different from SMEs that are owned by male or not.

1.4 RESEACH HYPOTHESIS

H1a: Female-owned SMEs are likely to face more constraints in access to finance than male-owned SMEs in SEA.

H1b: Female-owned SMEs are likely to use more internal funds than male-owned SMEs.

H1c: Female-owned SMEs in non-Buddhist culture are likely to employ a different proportion of internal funds from female-owned SMEs in Buddhist culture to finance their daily operations.

H2: Business performance of female-owned firms is different from male-owned firms.

H3: SMEs in different culture are likely to face a different degree of financial access.

1.5 SCOPE OF THE STUDY

This study uses World Bank Enterprise Surveys dataset. The survey has been done by interviewing SMEs in six countries in SEA: Thailand, Laos, Cambodia, Myanmar, Malaysia and Indonesia during in 2015 and 2016. The data will be used to examine gender and cultural differences in financial access of SMEs.

1.6 TERMS AND DEFINITIONS

1. Culture is defined as main characteristics, practices and beliefs of a particular group of people. In this study, the researcher divides the sample into two cultural groups which are Buddhist and non-Buddhist cultures.
2. Access to finance is defined as a situation when the SME applies for a loan and its application was approved in full amount.



CHAPTER 2

LITERATURE REVIEW

Gender discrimination is a gigantic problem that faced by the SMEs in different cultures and religions across the world, especially the third world countries. In this study, the researcher focuses only on gender discrimination in financial access of SMEs in six countries in SEA: Thailand, Laos, Cambodia, Myanmar, Indonesia and Malaysia.

2.1 CONCEPT AND THEORY

Financial institutions in developing countries have to put effort on consideration of all relevant factors before approving loans to enterprises, especially SMEs. As most of SMEs have never applied to credit lines before, banks, as well as other financial institutions, have little information about their borrowers. This asymmetric information may lead to adverse selection and moral hazard problems. Borrowers who need financing might not get loans or funding from lenders and/or investors due to limited information available for financial institutions. Credit rationing might help describe the equilibrium of credit market. There are two main components that financial institutions concern when approving loans which are the return (interest) and level of risk associated with borrowers. With adverse selection, the difference in the interest rate that banks offer to each borrower depends on the repayment probability of that person. However, it is costly to separate risky

borrowers from low-risk borrowers (Stiglitz and Weiss, 1981). Financial institutions may use empirical evidence from the previous study to assume characteristics (stereotype) of a certain group of people (Orser, Riding and Manley, 2006).

On the one hand, with information asymmetry, moral hazard problem generally arises in the market. It is a situation when one part of the contract is unable to observe the true action of another party, he or she can observe only the final outcome. In this context, banks are unable to observe the credit risks of the SMEs, that have never applied for credit before. A common practice that banks utilize is requiring collateral from SMEs as an endowment of loans. With collateral, banks or financial institutions are being protected against the loan default and it could be sold out to cover the loan (Bell and Clemenz, 1998). However, small and medium enterprises might not have high-value collateral to utilize as an endowment when there is a request from financial institutions. Thus, there are a few enterprises that get financed by banks. As above mentioned, SMEs might not face gender discrimination when accessing to credit, but asymmetric information.

In addition, there are two aspects to consider when examining discrimination against gender by financial institutions: statistic discrimination and taste-based preferences. The statistic discrimination is a situation when it is costly to obtain information. A study by Buttner and Rosen (1988) finds that characteristics that commonly held by successful enterprises are particularly found in men-owned businesses. In addition, evidence by Srinivasan (1994) finds that there is a lower

probability of business growth in female-owned enterprises compared to male-owned enterprises. The researcher also reports a higher rate of business closure in female-owned businesses. Thus, businesses that are owned by women might be stereotypically classified as less successful than businesses that owned by men. The second aspect is taste-based preferences which are situations when an individual is willing to pay either directly or indirectly in the form of things that might not be in monetary terms, which caused a reduction in the net income, in order to avoid communicating with some individuals or some certain groups of people (Becker, 1995). The latter case could be viewed as an irrational practice; however, both of these practices lead to market disequilibrium.

2.2 RELEVANT RESEARCH

A number of studies use African as well as U.S. data to examine discrimination against sex of the owner of an enterprise in access to finance. Most of the researches have found that female-owned enterprises have less access to finance than male-owned enterprises in some countries such as in Swaziland (Brixiová and Kangoye, 2016). A study by K.Cavalluzzo, L. Cavalluzzo and Wolken (2002) finds that with lender concentration, white female-owned firms face a rising in rates of denial compared to white male-owned firms. The results also suggest that the degree of discrimination against female-owned enterprises would be greater in countries with least financially developed. This evidence is also the same for female-

led firms. As a study by Fabowale, Orser and Riding (1995) shows that female-led firms are more likely to face relatively poorer credit contract terms than firms with the male leader. Additionally, the researchers find that female-owned enterprises, especially, small enterprises, feel that they have been treated unfairly with disrespect by financial institution officers compared to male entrepreneurs. In India, women business owners are facing several problems when accessing to credit. For example, women-owned businesses tend to have insufficient collateral and financial documents as required by financial institutions. Under the circumstances, Indian women entrepreneurs suffer more with financial hardship than men entrepreneurs (Improving Access to Finance for Women-owned Businesses in India, 2014). In addition, the study by Tambunan (2009) finds that the discrimination against gender in Asia are mostly found in a male-dominated culture in developing nations, which is a reason that supports why most of the large enterprises are owned by males. Debt financing which the company obtains from financial institutions has a positive relationship with the business survival rate as well as its revenue (Cole and Sokolyk, 2018). The above findings are likely to support the assumption that there is sex discrimination in financial access for SMEs. However, degrees of discrimination against gender are likely to differ across countries as well as cultures.

On the other hand, there are many studies find that female entrepreneurs have lower demand for external financing than the opposite sex. A study by Orser, Riding and Manley (2006) reports that regardless of the forms of external financing,

women tend to have a lower rate of seeking financing from external sources than men. This is the case where demand for financing is low in women-owned businesses. There is another empirical evidence showing that the difference in demand for financing comes from different sex of business owners as well as different business sectors. As businesses that owned by females are generally operated in the low capital-intensive sector, thus, as expected, there is a low demand for external funding from these enterprises (Klapper and Parker, 2010). Hence, the difference in the level of financial access between male and female entrepreneurs might be due to the fact that women have less demand for financing or do not need external financing to utilize in their businesses.

Other series of literature finds that there is no gender gap in enterprises access to finance. The recent study by Moro and Wisniewski, (2014) reports that by using European data, no evidence of discrimination against sex of business owners or managers by financial institutions when accessing to credit. The lower rate of loan approval in female-owned enterprises is a consequence of the lower rate of applying for loans by females. As a result, less financing from banking is found in female-owned businesses. Another study by Hansen and Rand, (2014) that uses Sub-Saharan Africa formal financial access data, also finds that there is no gender gap when firms access to finance. Even though there is a low level of the loan application by female entrepreneurs, there is no significant difference between loan approval of enterprises that are owned by different gender of owners (Robb and Wolken, 2002).

The empirical evidence is inconclusive toward the discrimination against gender of enterprise owners in access to finance. The difference between the findings in different studies may be due to the differences in cultures, the area of data and methodology that have been used in each research. In this study, the researcher aims to fill the gap of previous studies by using SEA data covers six countries: Thailand, Laos, Cambodia, Myanmar, Indonesia and Malaysia to examine discrimination against sex of enterprise owners in SEA.

2.3 HYPOTHESIS DEVELOPMENT

FINANCIAL ACCESS

The framework suggested by Cole and Sokolykb (2016) is being utilized in this analysis. The separation between enterprises that need the loan from another group that does not need the loan is a necessary process that must be done before analyzing gender discrimination in accessing to finance. Women-owned businesses are found to face several constraints in financial access. There are three main reasons that women entrepreneurs report as the constraints that they have encountered when applying for credit: unfavorable interest rates, high collateral requirements and insufficient loan size. A study by Muravyev et al. (2009) finds that female-managed firms pay relatively high-interest rates in Eastern Europe and Central Asia. The researchers also discover that women-led firms get a lower chance to receive loans than male-led firms. In Swaziland (Africa), there is the evidence shows

that female-owned enterprises have less access to finance and less capital compared to male-owned enterprises (Brixiová and Kangoye, 2016). Additionally, a study by Fabowale, Orser and Riding (1995) shows that female-led firms are more likely to face relatively worse credit contract terms than firms with the male leader. However, a study by Wignaraja and Jinjarak (2015) shows that not only female-owned businesses but all SMEs in developing countries including Thailand, Philippines, Indonesia, Malaysia and Vietnam are facing difficulties in access to finance. Additionally, the study by Moro and Wisniewski, (2014) reports that by using European data, no evidence of discrimination against sex of business owners or managers by financial institutions when accessing to credit. The lower rate of loan approval in female-owned enterprises is a consequence of a lower rate of applying for loans by females. Another study by Hansen and Rand, (2014) which uses Sub-Saharan Africa formal financial access data, also finds that there is no gender gap between financial access of SMEs in Africa. Nonetheless the findings from previous studies that examine gender discrimination in financial access of enterprises in Africa, Europe and U.S.A. might not fully explain the evidence in Southeast Asian countries.

H1a: Female-owned SMEs are likely to face more constraints in access to finance than male-owned SMEs in SEA.

There are several studies find that as women face difficulties in access to credit, they tend to depend more on their internal financing as a main source of financing. A study by Chaganti, DeCarolis and Deeds (1995) finds that undesirable

conditions of the debt market cause females-owned enterprises to use their internal funds instead of external financing. A study by Ram and Deakins (1995) also finds that in the United Kingdom, ethnic minority businesses (EMBs) that are led by women are less likely to depend on external funds from formal financial sources even in the initial stage of business. However, a study by Wignaraja and Jinjark (2015) reports that both female- and male-owned SMEs in developing countries including Thailand, Philippines, Indonesia, Malaysia and Vietnam are facing difficulties in access to finance. As a result, these enterprises are relying mainly on internal funds. Nevertheless, by holding everything else constant, if there is gender discrimination in financial access of SMEs in SEA, the proportion of internal fund that is employed by female-owned SMEs might be different from SMEs that are owned by males as females may face more constraints when access to finance than males.

H1b: Female-owned SMEs are likely to use more internal funds than male-owned SMEs.

Financial access of businesses has been influenced by the main culture of the nation. A study by Aggarwal and Goodell (2014) finds that there is a low level of financial access by SMEs in countries with male-dominated culture. Without support by males, Indian female-owned enterprises are being considered as risky borrowers by financial institutions (Improving Access to Finance for Women-owned Businesses in India, 2014). In addition, as there is a limitation in the availability of collateral, female entrepreneurs in Pakistan find it is difficult to approach banks which results in the

utilization of their internal financing to start the business (Roomi and Parrott, 2008). These findings may imply the rationale behind the low rates of financial access in women-owned SMEs across nations and culture.

H1c: Female-owned SMEs in non-Buddhist culture are likely to employ a different proportion of internal funds from female-owned SMEs in Buddhist culture to finance their daily operations.

BUSINESS PERFORMANCE

Several studies find that women entrepreneurs perform poorer than their counterparts as they generate lower income or revenue than men entrepreneurs. A study by Fairlie and Robb (2009) finds that in the U.S.A., business performance of firms that are owned by women are poorer than firms that are owned by their counterparts as in general, female-owned firms have lower human capital and work experience than male-owned firms. By using financial performance as a measurement of business performance, without risk-adjusted, women-owned SMEs in Australia generate lower profits than men-owned SMEs (Watson and Robinson, 2003). In addition, by using the data from National Family Business Panel (NFBP), Danes, Stafford and Loy (2007) find that family businesses that are owned by women generate lesser gross revenue compared to men-owned businesses. Nevertheless, although women-owned SMEs in Lebanon generate poorer revenue than SMEs that are owned by men, there is no difference between income that is generated by

these enterprises (Khalife and Chalouhi, 2013). On the other hand, the studies by Green and Homroy (2018) and Bennouri, Chtioui, Nagati and Nekhili (2018) find a positive relationship between business performance and female manager/ board representation. Thus, the evidence is inconclusive. By holding everything else constant, if there is a difference between the ability to operate businesses of female- and male-owned SMES, business performance of women-owned SMEs may differ from enterprises that are owned by men, which leads to the reason why there are low levels of accessing to finance by women-owned enterprises.

H2: Business performance of female-owned firms is different from male-owned firms.

CULTURAL DIFFERENCE

A study by Ongena and Popov (2016) finds that in a country with high-gender bias, loan application by female entrepreneurs are likely to be lesser than their gender counterparts in which banks show no discrimination to female when applying for loans. In India, the rate of access to finance of businesses that are owned by women is relatively low compared to their counterparts (Demirguc Kunt et al., 2015). Additionally, the studies by Gouda and Potrafke (2016) and Donno (2006) also find that discrimination against gender is generally found in countries with Islamic legislation. SMEs in countries which may imply male-dominated culture are likely to face a different degree of discrimination when accessing to finance compared to

SMEs in culture with no gender inequality, *ceteris paribus*.

H3: SMEs in different culture are likely to face a different degree of financial access.



CHAPTER 3

DATA

This chapter covers data sample and presents the definition of SMEs in each country. The definition of SMEs varies across countries. The data description will be discussed after the definition of SMEs. It would show a broad picture of the data that is used in this study.

3.1 DATA SAMPLE

World Bank Enterprise Surveys data set will be used in this study. The survey has been done in 2015 and 2016, covers six countries in SEA: Thailand, Laos, Cambodia, Myanmar, Indonesia and Malaysia. There are 4084 observations in total. A number of observations for each country are provided below. In Thailand, there are 939 enterprises that are interviewed by the World Bank Group. There are 367, 373, 412, 673 and 1320 enterprises that are interviewed in Laos, Cambodia, Myanmar, Malaysia and Indonesia, respectively. The enterprises that have been interviewed are either in manufacturing or services sectors. Additionally, this study uses the definition of SMEs that is determined by the World Bank which is defined by the number of employees. Enterprises with the number of employments between 5 to 19, 20 to 99 and over 100 are defined as small-, medium- and large-sized enterprises, respectively. The *Firm size* variable in this study reports the scale of the enterprise size which takes the value of 1, 2 or 3 if the enterprise is small, medium or large

SME, respectively. Nevertheless, in general, the definition of SMEs varies across countries which depend on the number of employees, capital and/or firm's turnover (see appendix for table A1).

3.2 DATA DESCRIPTION

Table 1 presents the essential descriptive statistics of the data that is used in this study. *Firm size* reports the scale of the enterprise size which takes the value of 1, 2 or 3 if the enterprise is small, medium or large SME, respectively. *Domestic ownership* is the percentage of business ownership that is owned by domestic individuals or companies. *Manager's experience* is a number of years of the management experience of a top manager. *2-year annual growth* is the 2-year compound annual growth rate of the enterprise. *Financial access* is a dummy variable which equals to 1 if SMEs can access to loans and 0 otherwise. *Internal fund* presents the proportion of internal fund that is used by SMEs in their day-to-day operations. Mean, standard deviation, minimum and maximum values of the data are reported in the table.

The table reports mean, standard deviation and mean difference of the data. The outliers in the data have been adjusted by using Tukey Fences. The values that are above $Q_3 + 1.5(Q_3 - Q_1)$ and below $Q_1 - 1.5(Q_3 - Q_1)$ are the outliers and have been cut out of the dataset, where Q_1 and Q_3 are the first and third quartiles, respectively.

The researcher separates enterprises by the main culture of countries that the enterprises operate in. There are 449 enterprises that operate in countries with Buddhist culture and 607 enterprises that operate in countries with non-Buddhist culture. Enterprises in countries with non-Buddhist are in general bigger than enterprises that operate in Buddhist countries. Their business ownership is mainly owned by domestic individuals or organizations. The number of years of the manager's experience is relatively high for SMEs in Buddhist culture. The standard deviation of business performance, which is a 2-year annual growth rate, is relatively high which mean that the business performance of enterprises substantially varies. In general, SMEs in SEA have a low rate of access to finance. Moreover, SMEs in countries with non-Buddhist culture are less likely to access to finance than SMEs in Buddhist countries. This agrees with the studies by Donno (2006), Ongena and Popov (2016) and Gouda and Potrafke (2016) which find that SMEs in countries which may imply male-dominated culture are likely to face a different degree of discrimination when accessing to finance compared to SMEs in culture with no gender inequality, Nevertheless, SMEs in SEA employ a high proportion of internal fund in their daily operations which corresponds to the study by Wignaraja and Jinjark (2015) which finds that SMEs in developing countries in SEA face with difficulties in accessing to finance; thus, these enterprises are relying mainly on internal funds.

Table 1: Descriptive Statistics of SMEs in SEA: Separated by Culture

This table shows a summary of descriptive statistics of the data. The survey is conducted in 2015 in Indonesia and Malaysia. For Thailand, Laos, Myanmar and Cambodia, the survey has been done in 2016. *Firm size* reports the scale of the enterprise size which takes the value of 1, 2 or 3 if the enterprise is small, medium or large SME, respectively. *Domestic ownership* is the percentage of business ownership that is owned by domestic individuals or companies. *Manager's experience* is a number of years of the top manager experience. *2-year annual growth* is the 2-year compound annual growth rate of the enterprise. *Financial access* is a dummy variable which equals to 1 if SMEs can access to loans and 0 otherwise. *Internal fund* presents the proportion of internal fund that is used by SMEs in their day-to-day operations. Mean, standard deviation, minimum and maximum values of the data are reported in the table.

Independent Variables	All Enterprises			Buddhist Countries			Non-Buddhist Countries			Mean Difference
	Mean	Std. Dev.	Min Max	Mean	Std. Dev.	Min Max	Mean	Std. Dev.	Min Max	
Firm size (scale)	1.886	0.783	1 3	1.840	0.786	1 3	1.921	0.779	1 3	-1.668*
Domestic ownership (%)	90.536	25.242	0 100	94.011	21.355	0 100	87.965	27.506	0 100	4.020***
Manager's experience	17.296	9.545	1 50	19.886	10.454	1 50	15.381	8.317	2 47	7.537***
2-year annual growth (%)	-1.160	16.676	-55.279 63.299	-2.715	19.662	-50.000 63.299	-0.010	13.972	-55.279 61.245	-2.488**
Financial access (dummy)	0.230	0.421	0 1	0.272	0.445	0 1	0.199	0.400	0 1	2.726***
Internal fund (%)	71.110	29.577	0 100	76.459	30.841	0 100	67.153	27.980	0 100	5.041***

Table 2 shows descriptive statistics of all enterprises in the sample. The survey is conducted in 2015 in Indonesia and Malaysia. For Thailand, Laos, Myanmar and Cambodia, the survey has been done in 2016. The researcher separates enterprises by country. In panel A, there are 215, 67, 93, 74, 484 and 123 enterprises that are interviewed in Thailand, Myanmar, Laos, Cambodia, Indonesia and Malaysia, respectively. In 2016, Malaysia has the highest GDP per capita (\$9,508.2) among these six countries, followed by Thailand (\$5,910.6) and Indonesia (\$3,570.3), respectively (The World Bank, 2017). By ranking the size of a country's overall economy, Malaysia has the largest economy in this sample. For Malaysia, the data also presents a relatively low percentage of domestic ownership of the enterprise which implies a great proportion of the company ownership which is owned by foreign individuals or organizations. On average, firm size of SMEs in Malaysia is relatively large compared to other countries. The enterprises in Malaysia also depend less on their internal funds.

On the other hand, financial access and business performance, which is a 2-year annual growth of sales, of SMEs in Myanmar and Cambodia are relatively high compared to other countries. This corresponds to the study by Fowowe (2017) which shows that there is a positive relationship between access to finance and business performance of the enterprises. Moreover, in 2013, the financial sector in Myanmar has been reformed. There is an improvement in the opening process for private banks to become less complicated. The improvement includes wider the definition

of collateral to cover agricultural products for export (Findlay, Park and Verbiest, 2015). Thus, it is easier for SMEs in Myanmar to access to finance. However, in Thailand, a company usually sets a requirement for the minimum years of work experience when recruiting a top manager, and the best one would be chosen.

Panel B reports basic statistics information about male-owned SMEs. There are 45, 40, 61, 23, 362 and 50 enterprises that are interviewed in Thailand, Myanmar, Laos, Cambodia, Indonesia and Malaysia, respectively. Firm size of male-owned SMEs in Indonesia, Laos and Malaysia are relatively high compared to other countries. Additionally, size of the observations in Indonesia is approximately seven times of Malaysia. The smallest proportion of the domestic ownership of the company in Laos may correspond to an imposing of a policy to promote FDI in Laos, recently (Douangdara and Yanghang, 2017). The 2-year annual growth of sales for SMEs in Myanmar and Malaysia are relatively high. In addition, enterprises in these two countries depend less on their internal fund compared to SMEs in other countries. Nevertheless, there are a few male-owned SMEs in Myanmar and Cambodia and these enterprises are solely owned by domestic individuals or organizations.

Panel C provides the fundamental statistics for female-owned SMEs. There are 155, 12, 26, 21, 63 and 36 enterprises that are interviewed in Thailand, Myanmar, Laos, Cambodia, Indonesia and Malaysia, respectively. Female-owned SMEs in Malaysia has the largest business size on average. The data also suggests that enterprises that are owned by women in Malaysia mostly are large size companies

and have a great proportion of foreign ownership. There are a few female-owned SMEs in Myanmar, Laos and Cambodia. Female-owned SMEs in Myanmar and Laos are solely owned by domestic individuals or organizations. Moreover, financial access and the 2-year annual growth of sales of SMEs in Myanmar and Cambodia are relatively high compared to other countries. As previously mentioned, this agrees with the study by Fowowe (2017) which finds a positive relationship between access to finance and business performance of the enterprises.



Table 2: Descriptive Statistics of SMEs in SEA: Separated by Country

This table shows a summary of descriptive statistics of the data. The survey is conducted in 2015 in Indonesia and Malaysia. For Thailand, Laos, Myanmar and Cambodia, the survey has been done in 2016. *Firm size* reports the scale of the enterprise size which takes the value of 1, 2 or 3 if the enterprise is small, medium or large SME, respectively. *Domestic ownership* is the percentage of business ownership that is owned by domestic individuals or companies. *Manager's experience* is a number of years of the top manager experience. *2-year annual growth* is the 2-year compound annual growth rate of the enterprise. *Financial access* is a dummy variable which equals to 1 if SMEs can access to loans and 0 otherwise. *Internal fund* presents the proportion of internal fund that is used by SMEs in their day-to-day operations. Mean, standard deviation, minimum and maximum values of the data are reported in the table.

Independent Variables	Thailand				Myanmar				Laos			
	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
Firm size (scale)	1.967	0.817	1	3	1.761	0.761	1	3	1.731	0.754	1	3
Domestic ownership (%)	97.819	9.662	30	100	100.000	0	100	100	81.505	36.947	0	100
Manager's experience	24.037	9.509	2	50	16.388	10.950	3	45	18.204	10.694	5	50
2-year annual growth (%)	-1.514	14.064	-39.541	33.661	9.434	20.135	-45.228	63.299	-18.861	21.233	-50.000	41.421
Financial access (dummy)	0.130	0.337	0	1	0.478	0.503	0	1	0.387	0.490	0	1
Internal fund (%)	78.233	32.836	0	100	61.716	32.515	0	100	82.204	26.142	0	100
					Indonesia				Malaysia			
					Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
Firm size (scale)	1.676	0.704	1	3	1.901	0.782	1	3	2.000	0.768	1	3
Domestic ownership (%)	93.243	23.001	0	100	91.829	23.086	0	100	72.764	36.821	0	100
Manager's experience	13.108	6.397	1	30	16.626	8.206	2	47	10.480	6.827	2	36
2-year annual growth (%)	3.090	18.760	-42.265	45.774	0.612	9.754	-23.304	30.384	-2.456	24.196	-55.279	61.245
Financial access (dummy)	0.351	0.481	0	1	0.167	0.374	0	1	0.325	0.470	0	1
Internal fund (%)	77.432	24.652	20	100	71.641	26.828	0	100	49.496	25.397	0	100

Table 2-Continued

Independent Variables	Thailand			Myanmar			Laos		
	Mean	Std. Dev.	Max	Mean	Std. Dev.	Max	Mean	Std. Dev.	Max
Firm size (scale)	1.711	0.843	1	1.625	0.774	1	1.852	0.749	3
Domestic ownership (%)	96.667	12.247	30	100.000	0	100	73.443	41.709	0
Manager's experience	23.778	9.730	5	18.625	11.723	4	18.148	10.451	5
2-year annual growth (%)	2.734	16.186	-28.844	7.929	20.534	-45.228	-21.800	20.753	-50.000
Financial access (dummy)	0.044	0.208	0	0.325	0.474	0	0.426	0.499	0
Internal fund (%)	79.111	28.028	10	65.750	32.808	0	82.213	27.242	0
Independent Variables	Cambodia			Indonesia			Malaysia		
	Mean	Std. Dev.	Max	Mean	Std. Dev.	Max	Mean	Std. Dev.	Max
Firm size (scale)	1.652	0.714	1	1.878	0.746	1	1.820	0.774	3
Domestic ownership (%)	100.000	0	100	93.215	21.096	0	81.400	35.914	0
Manager's experience	14.043	7.061	4	17.301	8.245	2	12.800	7.980	5
2-year annual growth (%)	-4.385	14.760	-33.191	0.624	9.212	-23.304	5.093	24.509	-42.265
Financial access (dummy)	0.217	0.422	0	0.141	0.348	0	0.200	0.404	0
Internal fund (%)	83.261	18.685	50	72.052	27.722	0	55.560	25.785	0

Note: Male owner is defined as the enterprise that has both male owner and top manager.

Table 2-Continued

Panel C: Female-owned SMEs		Thailand			Myanmar			Laos					
Independent Variables		Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
Firm size (scale)		2.013	0.798	1	3	1.833	0.718	1	3	1.423	0.703	1	3
Domestic ownership (%)		98.200	8.753	40	100	100	0	100	100	100	0	100	100
Manager's experience		24.245	9.780	2	50	9.083	4.795	3	22	18.308	11.387	5	49
2-year annual growth (%)		-2.843	13.619	-39.541	29.777	14.696	19.746	-8.234	63.299	-14.278	22.247	-42.265	41.421
Financial access (dummy)		0.142	0.350	0	1	0.750	0.452	0	1	0.269	0.452	0	1
Internal fund (%)		78.581	33.448	0	100	54.583	25.889	25	100	83.846	23.846	20	100
Independent Variables		Cambodia			Indonesia			Malaysia					
		Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
Firm size (scale)		1.429	0.598	1	3	1.698	0.835	1	3	2.194	0.786	1	3
Domestic ownership (%)		99.048	4.364	80	100	89.952	24.859	0	100	73.611	34.695	0	100
Manager's experience		12.524	6.226	2	25	14.238	6.608	5	37	9.222	5.378	2	25
2-year annual growth (%)		6.988	20.323	-42.265	45.774	-1.635	9.984	-22.540	25.000	-13.975	23.731	-55.279	58.114
Financial access (dummy)		0.476	0.512	0	1	0.238	0.429	0	1	0.333	0.478	0	1
Internal fund (%)		79.048	21.658	50	100	75.206	21.944	25	100	50.278	28.384	0	100

Note: Female owner is defined as the enterprise that has both female owner and top manager.

Table 3 reports the mean difference between the independent variables between male- and female-owned SMEs. The survey has been conducted in 2015 in Indonesia and Malaysia. The mean difference between the size of enterprises that are owned by male and female is statistically significant in three out of six countries: Thailand, Laos and Malaysia. Firm size of female-owned enterprises is on average larger than enterprises that are owned by their counterparts in Thailand and Malaysia. The number of manager years of experience is relatively high in male-owned SMEs in three countries: Myanmar, Indonesia and Malaysia. There is a difference between the business performance of male- and female-owned SMEs in Thailand and Indonesia. On average, men entrepreneurs in these countries generate higher sales than women entrepreneurs.

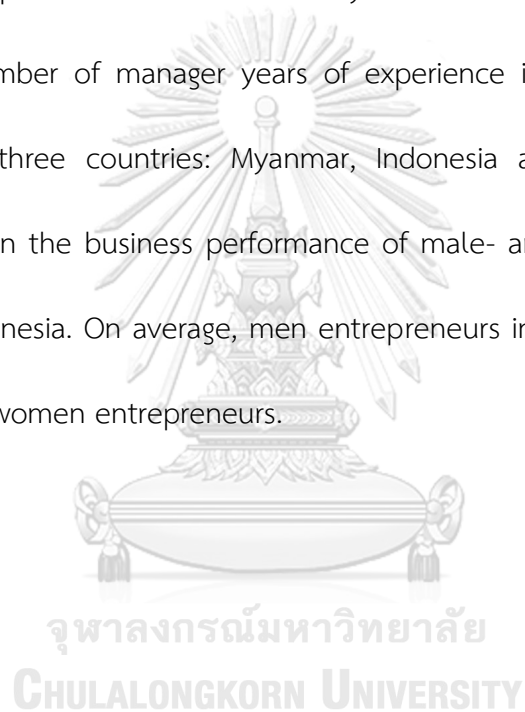


Table 3: Mean difference between male- and female-owned SMEs

This table shows the mean difference between male and female entrepreneurs. The survey is conducted in 2015 in Indonesia and Malaysia. For Thailand, Laos, Myanmar and Cambodia, the survey has been done in 2016. *Firm size* takes the value of 1 if the enterprise is small, takes the value of 2 if the enterprise is medium and takes the value of 3 if the enterprise is large. A higher number indicates a larger firm size. *Domestic ownership* is the percentage of business ownership that is owned by domestic individuals, companies or organizations. *Manager's experience* is a number of years of the top manager experience. *2-year growth* is the 2-year compound annual growth rate of the enterprise. *Financial access* is a dummy variable takes the value of 1 if the SME is able to access to finance and 0 otherwise. The *internal fund* is the percentage of internal funds or retained earnings that SMEs use in their day-to-day operations.

Independent Variables	Thailand			Myanmar			Laos		
	Mean		Mean Difference	Mean		Mean Difference	Mean		Mean Difference
	Male	Female		Male	Female		Male	Female	
Firm size (scale)	1.711	2.013	-0.302**	1.625	1.833	-0.208	1.852	1.423	0.429**
Domestic ownership (%)	96.667	98.200	-1.533	100	100	N/A	73.443	100	-26.557***
Manager's experience	23.778	24.245	-0.467	18.625	9.083	9.542***	18.148	18.308	-0.160
2-year annual growth (%)	2.734	-2.843	5.576**	7.929	14.696	-6.766	-21.800	-14.278	-7.522
Financial access (dummy)	0.044	0.142	-0.097**	0.325	0.750	-0.425***	0.426	0.269	0.157
Internal fund (%)	79.111	78.581	0.530	65.750	54.583	11.167	82.213	83.846	-1.633
	Cambodia			Indonesia			Malaysia		
Independent Variables	Mean		Mean Difference	Mean		Mean Difference	Mean		Mean Difference
	Male	Female		Male	Female		Male	Female	
	Firm size (scale)	1.652	1.429	0.224	1.878	1.698	0.180	1.820	2.194
Domestic ownership (%)	100	99.048	0.952	93.215	89.952	3.263	81.400	73.611	7.789
Manager's experience	14.043	12.524	1.520	17.301	14.238	3.063***	12.800	9.222	3.578**
2-year annual growth (%)	-4.385	6.988	-11.373**	0.624	-1.635	2.259*	5.093	-13.975	19.069***
Financial access (dummy)	0.217	0.476	-0.259*	0.141	0.238	-0.097*	0.200	0.333	-0.133
Internal fund (%)	83.261	79.048	4.213	72.052	75.206	-3.154	55.560	50.278	5.282

CHAPTER 4

METHODOLOGY

This section shows the variables that are used in this study. There are three main groups of variables which are control variables, gender variables and dependent variables. The regression analysis will be covered as the next topic in this chapter. The hypothesis testing is also stated after the regressions.

4.1 VARIABLES

CONTROL VARIABLES

Several studies find that SMEs generally suffer with difficulties when accessing to finance. Firm size, firm age, foreign ownership, the legal status of the firm and years of manager's experience (Bellucci, Borisov and Zazzaro, 2010; Muravyev, Talavera, and Schäfer, 2009; Quartey, Turkson, Abor and Iddrisu, 2017) are factors that matter for SMEs financial access across the world. The control variables in this study are mainly from the World Bank which consist of firm size, foreign ownership, years of manager's experience, Buddhist, average unemployment rate and average inflation rate. Firm size variable will take a value of 1 if the enterprise is a small size firm and take a value of 2 and 3 if the enterprise is a medium size firm and a large size firm, respectively. Domestic ownership variable will contain the value of the percentage of domestic ownership in the firm. The manager's experience variable represents the number of years of the manager's experience. The Buddhist variable

is a dummy variable that takes a value of 1 if the enterprise is operated in Buddhist culture countries and 0 otherwise.

In addition, the macroeconomic factors could indirectly influence business performance, utilization of internal fund and financial access of SMEs. A study by Abreu-Ledón, Luján-García, Garrido-Vega, and Escobar-Pérez (2018) finds that the degree of economic development has strongly impacted the performance of businesses in countries with emerging market economies. A study by Czajor, Michalak and Waniak-Michalak (2013) reports that earnings quality of companies improves when national GDP growth is high which implies that the companies might not smoothen earnings during crises or normal periods. The study suggests that GDP growth and business performance may have a positive correlation. Nevertheless, in the long-run, while the nominal GDP growth rates of the European countries and the U.S.A. decline during the recession or crisis periods, the rates of earnings growth fluctuate along those periods (Economic and Monetary Developments, 2007). As previously mentioned, the relationship between GDP growth and business performance is inconclusive. However, this study uses an average real GDP growth as the variable that indicates about the economy of a nation. The data is from the Federal Reserve Bank of St. Louis. Moreover, a study by Duygan-Bump, Levkov and Montoriol-Garriga (2015) finds that during recessions and crises, a number of labors become unemployed and financial institutions also reduce the amount of loans for lending. However, there is a greater trade-off between unemployment and the

growth rate of output in the short-run than in the long-run which may imply that business performance of the firm is poorer when there is an increase in the unemployment rate (Schubert and Turnovsky, 2018). Inflation and interest rate are also the essential economic factors which impact demand as well as supply for goods and services within a nation (Olawale and Garwe, 2010). High-interest rate directly impacts the demand for loans by SMEs. Inflation provides benefits to borrowers as there is a reduction of the real value of money along with a rising in inflation. The real GDP growth, unemployment rate, and inflation rate represent a 2-year average real GDP growth, unemployment rate and inflation rate during the three years before the interview, respectively. Additionally, there is a negative relationship between interest rate and financial access as when the interest rate increases, the demand for loans decreases. This study uses the interest rate which is the mean of a 2-year interest rate of each country during the three years before the interview as one of the control variables. The interest rate that is used in this study is from World-Interest Rate (2018).

GENDER VARIABLES

The researcher defined women-owned SME as an enterprise that is led and owned by females. Thus, *female* variable accounts for an enterprise that owned and led by women, which is a binary variable that takes a value of 1 if the enterprise is a women-owned SME and 0 otherwise.

DEPENDENT VARIABLES

In order to examine financial constraints faced by SMEs, financial access will be used as a variable that represents the ability to access to finance by SMEs. Financial access is a binary variable which takes the value of 1 if the enterprise applies for a loan and its application was approved in full amount. The internal fund variable is used to examine the percentage of internal funds and retained earnings that the enterprise uses to finance its daily operations. The performance variable indicates the 2-year compound annual growth rate of the enterprise in percentage which calculates as the following equation.

$$Performance = \left\{ \left[\frac{S_{t-1}}{S_{t-3}} \right]^{\frac{1}{2}} \right\} - 1$$

where S_{t-1} is the total sales of the last fiscal year and S_{t-3} is the total annual sales three years ago

4.2 REGRESSION ANALYSIS

FINANCIAL ACCESS

This study uses both Probit and Logit models to test the first hypothesis and to confirm the results as well as do a robustness check for the models. Tobit model has been employed to analyze the difference in internal funds between enterprises that owned by different gender of owners.

For Probit regression, let $G(.)$ be a cumulative distribution function (CDF) of U , which

is an unobserved component, takes a value within the range [0,1]. In Probit model, U is assumed to be normally distributed $U \sim iid N(0,1)$:

$$P\{Y = 1|X_i\} = \Phi(XB)$$

and

$$P\{Y = 0|X_i\} = 1 - \Phi(XB)$$

where $Y = 1$ means that the SME can access to finance and 0 otherwise

As there are unknown parameters (β_i), by using Maximize Likelihood Estimation (MLE), it will estimate the value of β_i that is most probable for the given observations.

MLE for Probit estimator:

$$\hat{\beta} = \underset{\beta}{argmax} \sum_{i=1}^n \{Y \ln \Phi(X_i\beta) + (1 - Y) \ln(1 - \Phi(X_i\beta))\}$$

In Logit model, it assumes that the CDF of $G(.)$ is distributed as logistic function:

$$P\{Y = 1|X_i\} = \Lambda(XB) = \frac{e^{X\beta}}{1 + e^{X\beta}}$$

and

$$P\{Y = 0|X_i\} = 1 - \Lambda(XB) = 1 - \frac{e^{X\beta}}{1 + e^{X\beta}}$$

MLE for Logit estimator:

$$\hat{\beta} = \underset{\beta}{argmax} \sum_{i=1}^n \{Y \ln \Lambda(X_i\beta) + (1 - Y) \ln(1 - \Lambda(X_i\beta))\}$$

The following regression will be used to study the first hypothesis.

$$\begin{aligned} Pr \{ \text{Financial access} = 1|X \} = G \{ & \beta_0 + \beta_1 \text{Female} + \beta_2 \text{Firm size} + \beta_3 \text{Domestic ownership} \\ & + \beta_4 \text{Manager's experience} + \beta_5 \text{Performance} \\ & + \beta_6 \text{Interest rate} + \beta_7 \text{Unemployment} + \beta_8 \text{Inflation} \} \end{aligned}$$

In order to answer the first hypothesis: Female-owned SMEs are likely to face more constraints in access to finance than male-owned SMEs in SEA, the hypothesis testing must be done. This is the hypothesis for examining gender discrimination in financial access of SMEs in countries with Buddhist culture:

$$H_0: \beta_1 = 0 \text{ and } H_1: \beta_1 < 0$$

The researcher uses Tobit model to bring forth the answer for the next two hypotheses: H1b: Female-owned SMEs are likely to use more internal funds than male-owned SMEs.

$$\begin{aligned} Y_i &= Y^* \quad \text{if } 0 < Y_i \leq 100 \\ Y_i &= 0 \quad \text{if } Y^* < 0 \\ Y_i &= 100 \quad \text{if } Y^* > 100 \\ Y^* &= X_i\beta + \varepsilon_i \end{aligned}$$

where Y_i is the proportion of internal fund that SMEs use to finance their daily operations

$$\begin{aligned} \text{Internal fund} = & \beta_0 + \beta_1 \text{Female} + \beta_2 \text{Firm size} + \beta_3 \text{Domestic ownership} \\ & + \beta_4 \text{Manager's experience} + \beta_5 \text{Buddhist} + \beta_6 \text{Performance} \\ & + \beta_7 \text{Interest rate} + \beta_8 \text{Unemployment} + \beta_9 \text{Inflation} + \epsilon \end{aligned}$$

By analyzing the β_1 can lead to the conclusion of this hypothesis.

$$H_0: \beta_1 = 0 \text{ and } H_1: \beta_1 > 0$$

The following regression will be used in order to examine the next hypothesis: H1c: Female-owned SMEs in non-Buddhist culture are likely to employ a different proportion of internal funds from female-owned SMEs in Buddhist culture

to finance their daily operations.

$$\begin{aligned} \text{Internal fund} = & \beta_0 + \beta_1 \text{Female} + \beta_2 \text{Firm size} + \beta_3 \text{Domestic ownership} \\ & + \beta_4 \text{Manager's experience} + \beta_5 \text{Buddhist} + \beta_6 \text{Female} * \text{Buddhist} \\ & + \beta_7 \text{Performance} + \beta_8 \text{Interest rate} + \beta_9 \text{Unemployment} + \beta_{10} \text{Inflation} + \epsilon \end{aligned}$$

The hypothesis that uses for examining the impact of culture on the proportion of internal funds that is used by female-owned SMEs across culture is

$$H_0: \beta_5 + \beta_6 = 0 \text{ and } H_1: \beta_5 + \beta_6 \neq 0$$

BUSINESS PERFORMANCE

To investigate the difference in business performance, the researcher uses the OLS regression model. This regression is used in analyzing the second hypothesis: Business performance of female-owned firms is lower than male-owned firms.

$$\begin{aligned} \text{Performance} = & \beta_0 + \beta_1 \text{Female} + \beta_2 \text{Firm size} + \beta_3 \text{Domestic ownership} \\ & + \beta_4 \text{Manager's experience} + \beta_5 \text{Buddhist} + \beta_6 \text{GDP growth} \\ & + \beta_7 \text{Interest rate} + \beta_8 \text{Unemployment} + \beta_9 \text{Inflation} + U \end{aligned}$$

The hypothesis testing also needed to be used in order to test the second hypothesis: Business performance of female-owned firms is lower than male-owned firms. To observe the business performance of SMEs, the researcher investigates the regression outcome by analyzing β_1 .

CULTURAL DIFFERENCE

In order to bring forth the answer for the last hypothesis, Probit and Logit regressions are used in this analysis. The following regression is used for investigating the third hypothesis: SMEs in different culture are likely to face a different degree of financial access.

$$\begin{aligned}
 Pr \{ \text{Financial access} = 1 | X \} = G \{ & \beta_0 + \beta_1 \text{Female} + \beta_2 \text{Firm size} + \beta_3 \text{Domestic ownership} \\
 & + \beta_4 \text{Manager's experience} + \beta_5 \text{Buddhist} \\
 & + \beta_6 \text{Female} * \text{Buddhist} + \beta_7 \text{Performance} \\
 & + \beta_8 \text{Female} * \text{Performance} + \beta_9 \text{Buddhist} * \text{Performance} \\
 & + \beta_{10} \text{Female} * \text{Buddhist} * \text{Performance} + \beta_{11} \text{Interest rate} \\
 & + \beta_{12} \text{Unemployment} + \beta_{13} \text{Inflation} \}
 \end{aligned}$$

The hypothesis that is used in investigating the impact of culture on financial access of SMEs in countries with Buddhist culture is

$$H_0: \beta_1 + \beta_6 + \beta_{10} = 0 \text{ and } H_1: \beta_1 + \beta_6 + \beta_{10} \neq 0$$

The hypothesis that is used in analyzing the impact of culture on financial access of SMEs in countries with non-Buddhist culture is then:

$$H_0: \beta_1 = 0 \text{ and } H_1: \beta_1 \neq 0$$

The next session will present the empirical results of the study.

CHAPTER 5

EMPIRICAL RESULTS

In order to investigate gender and cultural differences in access to finance for SMEs in Thailand, Laos, Cambodia, Myanmar, Indonesia and Malaysia, many aspects of both gender and cultural differences in financial access of SMEs have been examined. The researcher also has examined business performance and compared the performance of female- and male-owned SMEs as well as female-owned SMEs in different culture.

5.1 FINANCIAL ACCESS

Do female-owned SMEs face more constraints in access to finance than male-owned SMEs in SEA?

The result shows that there is no significant difference between female- and male-owned SMEs in the probability of financial access as the model I and II of table 5 shows that female variable has no statistically significance which corresponds to the studies by Moro and Wisniewski, (2014) and Hansen and Rand, (2014) and Robb and Wolken, (2002). However, firm size has a significant impact on the financial access of the SMEs which means that the larger the size of the business, the higher the probability of financial access of SMEs. Manager years of experience also have a significant effect on the probability to access to finance by SMEs. As years of manager experience increases, the probability that the enterprises will access to loans is

lower. This may be due to the fact that a manager with more work experience could help to lead the enterprise to earn money that is sufficient for the business to run and grow without borrowing from external financing source. Unemployment variable in the model I and II of model 5 show the statistical significance at 1% level with negative value coefficients means that there is a negative relationship between unemployment rate and financial access of SMEs which corresponds to the study by Duygan-Bump, Levkov and Montoriol-Garriga (2015). As banks reduce the amount of loans available for lending when there is an increase in unemployment rate, when SMEs approach banks in order to apply for loans during these periods, the amount of loans that are offered by financial institutions might not satisfy SMEs. Inflation also has a significant impact on the financial access of the SMEs as inflation gives benefits to borrowers as the real value of money that they borrow would decrease.

Do female-owned SMEs use more internal funds than male-owned SMEs?

The researcher investigates the proportion of internal fund that is used by SMEs in their day-to-day operations. The result presents that there is no significant difference between the proportion of internal fund that is employed by the female- and male-owned enterprises in SEA in their daily operations as the female variable in the model I of table 6 shows that there is no statistical significance. However, firm size has a significant impact on the proportion of internal fund that is employed by SMEs and its coefficient has a negative value as shown in the models I of table 6.

This means that as the business gets larger, it depends less on its internal funds as well as retained earnings. Without controlling for macroeconomic factors, domestic ownership has a significant impact on the proportion of internal fund that is employed by SMEs in their daily operations as shown in the model I of table 6. The positive value of the coefficient of domestic ownership means that when there is an increase in the proportion of domestic ownership in a company ownership structure, SMEs are likely to depend more on their internal funds as well as retained earnings. This corresponds to the previous study that finds a positive relationship between foreign ownership and financial access of the SMEs (Quartey, Turkson, Abor and Iddrisu, 2017). This means there is a negative relationship between domestic ownership and financial access of SMEs. Additionally, table 6 shows that Buddhist variable in all models has both statistical and economic significance. The coefficient of Buddhist variable has a relatively high positive value which indicates that SMEs in countries with Buddhist culture are likely to use more proportion of internal funds in their day-to-day operations than SMEs in countries with non-Buddhist culture. This agrees with the study by Wignaraja and Jinjark (2015) which finds that SMEs in developing countries including Thailand, Philippines, Indonesia, Malaysia and Vietnam are facing difficulties in access to finance; thus, SMEs in SEA are relying mainly on internal funds. Furthermore, the interest rate in the model II and IV of table 6 have a negative effect on the utilization of internal funds by the SMEs as a rising in interest rate causes businesses to depend more on their internal funds or retained earnings.

This is a concept of the law of demand. Unemployment variable also has a positive impact on the proportion of internal that is used by the SMEs. As a high unemployment rate causes banks to reduce the lending amount, enterprises would have to depend more on their internal funds and retained earnings.

Do female-owned SMEs in non-Buddhist culture employ a different proportion of internal funds from female-owned SMEs in Buddhist culture to finance their daily operations?

In order to examine whether female-owned enterprises in different culture utilize different proportion of internal funds in their daily operations or not, the researcher investigates the proportion of internal fund that is employed by female-owned SMEs across culture. The hypothesis testing result finds that there is statistical significance at 1% level which means that there is a significant difference between the proportion of internal fund that is used by female-owned SMEs across culture. Moreover, *Buddhist* variable has both statistical and economic significance. The coefficient of *Buddhist* variable shows positive value. This means that there is a contribution of culture to the proportion of internal fund that is used by male-owned SMEs in different culture. This is corresponding to the descriptive statistics of the data which shows that male-owned SMEs in countries with Buddhist are likely to depend more on their internal funds than male-owned SMEs in countries with non-Buddhist. Furthermore, it means that enterprises in countries with Buddhist culture

are likely to use more proportion of internal fund in their day-to-day operations than enterprises in countries with non-Buddhist culture. This agrees with the findings by Wignaraja and Jinjark (2015). Additionally, the result indicates that *firm size* has a significant impact on the proportion of internal fund that is employed by SMEs. The coefficient of *firm size* has negative value in both models I and II of table 6 which means that as the business gets larger, it depends less on its internal funds as well as retained earnings. Without controlling for macroeconomic factors, the *domestic ownership* variable shows that there is a significant impact on the proportion of internal fund that is used by SMEs in their daily operations. Manager years of experience also have a significant effect on the proportion of internal fund that is used by SMEs. As years of manager experience increases, SMEs are likely to depend more on their internal funds. As previously mentioned, the manager with more work experience could help to lead the enterprise to earn sufficient revenue for running and growing its business without borrowing from external financing source.

5.2 BUSINESS PERFORMANCE

Is business performance of female-owned firms different from male-owned firms?

To examine whether there is a difference between the business performance of male- and female-owned SMEs or not, the researcher has to analyze an impact of gender on business performance. The empirical result shows that there is a

statistically significant in the effect of gender on the business performance of SMEs as the female variable in the model II and III of table 7 report a statistical significance at 1% and 5% levels, respectively, with a negative value of the coefficient. This means that the business performance of female-owned SMEs in SEA is poorer than their counterparts which corresponds to the studies by Fairlie and Robb (2009, Watson and Robinson (2003) and Danes, Stafford and Loy (2007). Moreover, there is a statistically significant difference between the business performance of SMEs in different culture as Buddhist variable has both statistical and economic significance in both models I and II. Its coefficient has a highly negative value which means that business performance of SMEs in countries with Buddhist culture is relatively lower than enterprises that are in non-Buddhist countries. The interest rate has a negative effect on the business performance as a rising in interest rate causes businesses to depend more on their internal funds and postpone investment project which impact the revenue of companies. The result reports that GDP growth has a negative relationship with the business performance which contrasts with the study by Czajor, Michalak and Waniak-Michalak (2013). However, this may correspond to the study by Neumeyer and Perri (2005) which finds that in emerging market economies, the national outputs (GDP) relatively fluctuate over time. Even in the long-run, while GDP growth changes slowly, the earnings growth of companies relatively fluctuate (Economic and Monetary Developments, 2007). GDP growth which is a macroeconomic variable might not be appropriate in explaining individual

companies. Additionally, inflation has a positive effect on business performance as the price of goods and services increase with the inflation. As a result, sales of the businesses increase along with the inflation.

5.3 CULTURAL DIFFERENCE

Do SMEs in different culture face a different degree of financial access?

To investigate an impact of gender on the probability of financial access of SMEs that depends on culture, the researcher examines whether culture influences the probability that SMEs are able to access to loans or not. The results show that there is no statistical significance between financial access of SMEs in difference culture. The empirical results indicate that there is no statistical significance between financial access of SMEs in Buddhist culture. In addition, the *female* variable in the model II and III of table 8 shows no statistical significance which means that there is no statistical significance between financial access of SMEs in non-Buddhist culture as well. The latter finding might be the outcome of a program that helps to promote gender equity By World Bank Group in Indonesia. In 2011, the World Bank reports an improvement of gender equality in Indonesia in the last two decades (World Development Report: Gender Equality in Indonesia Improving, 2011). Additionally, the government of Malaysia has set a goal to become a developed nation within 2020. As gender equality is one of the essential milestones that the nation has to achieve, the government promotes a better social and economic role for women in Malaysia

(Gender Equality Workshop, 2017). As a result of the improvement of gender equality, there is no difference between financial access of SMEs in countries with non-Buddhist culture.



Table 4: Correlation Matrix of Variables

This table presents the correlation matrix of variables. *Female* is a dummy variable takes the value of 1 if the SME is owned and led by females and 0 otherwise. *Firm size* takes the value of 1, 2 or 3 if the enterprise is small, medium or large SME, respectively. *Domestic ownership* is the percentage of business ownership that is owned by domestic individuals or companies. *Manager's experience* is a number of years of the top manager experience. *Buddhist* is a dummy variable takes the value of 1 if the SME operate in countries with Buddhist culture and 0 otherwise. *FemalexBuddhist* is a dummy variable takes the value of 1 if the enterprise is a female-owned SME in a country with Buddhist culture and 0 otherwise. *2-year growth* is the 2-year compound annual growth rate of the enterprise. *Femalex2-year growth* is a dummy variable which shows the performance of female-owned SMEs. *Buddhistx2-year growth* is a dummy variable which shows the performance of SMEs in Buddhist culture. *FemalexBuddhistx2-year growth* is a dummy variable presents the performance of female-owned SMEs in Buddhist culture. The real *GDP growth*, *interest rate*, *unemployment rate*, and *inflation rate* represent a 2-year average of the real GDP growth, interest rate, unemployment rate and inflation rate during three years before the interview, respectively.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
(1) Female	1													
(2) Firm size	-0.009	1												
(3) Domestic ownership	0.089	-0.244	1											
(4) Manager's experience	0.092	0.144	0.119	1										
(5) Buddhist	0.339	-0.051	0.119	0.234	1									
(6) Female x Buddhist	0.777	-0.008	0.161	0.223	0.586	1								
(7) 3-year growth	-0.091	-0.042	0.045	-0.068	-0.080	-0.034	1							
(8) Female x 3-year growth	-0.168	-0.075	0.043	-0.049	-0.005	-0.066	0.570	1						
(9) Buddhist x 3-year growth	-0.021	-0.031	0.052	-0.076	-0.104	-0.044	0.773	0.482	1					
(10) Female x Buddhist x 3-year growth	-0.092	-0.025	-0.026	-0.113	-0.069	-0.119	0.463	0.811	0.599	1				
(11) Real GDP growth	-0.384	-0.093	-0.105	-0.292	-0.144	-0.462	-0.035	0.063	-0.046	0.083	1			
(12) Interest rate	-0.382	-0.024	0.049	-0.102	-0.486	-0.473	0.109	0.104	0.107	0.086	0.531	1		
(13) Unemployment rate	-0.356	0.043	-0.065	-0.179	-0.974	-0.573	0.087	0.029	0.097	0.065	0.150	0.611	1	
(14) Inflation rate	-0.438	-0.039	0.033	-0.155	-0.547	-0.544	0.103	0.117	0.096	0.100	0.641	0.964	0.667	1

Table 5: Access to Finance

This table presents the financial access of SMEs. Financial access is a dependent variable which will equal to 1 if SMEs can access to loans and 0 otherwise. The model I and II report the results from Probit regressions and model III presents the results from Logit regression with financial access as the dependent variables. There are no macroeconomic factors in model I. Female is a dummy variable takes the value of 1 if the SME is owned and led by females and 0 otherwise. *Firm size* takes the value of 1, 2 or 3 if the enterprise is small, medium or large SME, respectively. *Domestic ownership* is the percentage of business ownership that is owned by domestic individuals or companies. *Manager's experience* is a number of years of the top manager experience. *2-year growth* is the 2-year compound annual growth rate of the enterprise. The *interest rate*, *unemployment rate*, and *inflation rate* represent a 2-year average of the interest rate, unemployment rate and inflation rate during three years before the interview, respectively. The standard errors are reported in parentheses. *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively.

Independent Variables	Coefficients for Regression Models		
	I	II	III (Logit)
Female	0.070 (0.095)	0.101 (0.107)	0.185 (0.186)
Firm size	0.180*** (0.057)	0.215*** (0.058)	0.388*** (0.102)
Domestic ownership	-0.002 (0.002)	-0.003 (0.002)	-0.004 (0.003)
Manager's experience	-0.011** (0.005)	-0.013** (0.005)	-0.022** (0.009)
2-year growth	-0.001 (0.002)	-0.001 (0.003)	-0.001 (0.004)
Interest rate		-0.063 (0.062)	-0.108 (0.103)
Unemployment		-0.189*** (0.032)	-0.329*** (0.055)
Inflation		0.213** (0.089)	0.366** (0.151)
Constants	-0.778 (0.213)	-0.815 (0.247)	-1.411 (0.426)
Observations	1056	1056	1056

Table 6: Internal Funds

This table shows the proportion of internal fund that is employed by SMEs in their daily operations which is a dependent variable. This table shows the results from Tobit regression with internal funds as the dependent variable. Model III and IV includes interaction terms into the model. The model II and IV include macroeconomic factors. *Female* is a dummy variable takes the value of 1 if the SME is owned and led by females and 0 otherwise. *Firm size* takes the value of 1, 2 or 3 if the enterprise is small, medium or large SME, respectively. *Domestic ownership* is the percentage of business ownership that is owned by domestic individuals or companies. *Manager's experience* is a number of years of the top manager experience. *Buddhist* is a dummy variable takes the value of 1 if the SME operate in countries with Buddhist culture and 0 otherwise. *FemalexBuddhist* is a dummy variable takes the value of 1 if the enterprise is a female-owned SME in a country with Buddhist culture and 0 otherwise. *2-year growth* is the 2-year compound annual growth rate of the enterprise. The *interest rate*, *unemployment rate*, and *inflation rate* represent a 2-year average of the interest rate, unemployment rate and inflation rate during three years before the interview, respectively. The standard errors are reported in parentheses. *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively.

Independent Variables	Coefficients for Regression Models			
	I	II	III	IV
Female	0.554 (3.492)	0.304 (3.651)	-2.145 (5.213)	2.731 (5.129)
Firm size	-12.130*** (1.994)	-12.005*** (1.940)	-12.167*** (1.994)	-11.989*** (1.939)
Domestic Ownership	0.126** (0.060)	0.056 (0.060)	0.122** (0.061)	0.059 (0.060)
Manager's experience	0.644*** (0.166)	0.342** (0.171)	0.627*** (0.168)	0.347** (0.171)
Buddhist	13.311*** (3.323)	125.756*** (17.427)	11.886*** (3.896)	130.251*** (18.676)
Female*Buddhist			4.976 (7.144)	-4.946 (7.336)
2-year growth	-0.095 (0.090)	-0.083 (0.087)	-0.102 (0.090)	-0.075 (0.088)
Interest rate		-6.658*** (2.211)		-6.553*** (2.216)
Unemployment		34.485*** (5.386)		35.527*** (5.606)
Inflation		3.576 (3.211)		3.141 (3.275)
Constants	78.102 (7.483)	-27.331 (17.043)	79.237 (7.660)	-30.791 (17.802)
Observations	1056	1056	1056	1056

Table 7: Business Performance

This table presents the business performance of SMEs. Business performance is a dependent variable which presents the 2-year compound annual growth rate of the SME. This table shows the results from OLS regressions with the business performance as the dependent variable. The model II and III include macroeconomic factors. Model III is a robust version of model I. *Female* is a dummy variable takes the value of 1 if the SME is owned and led by females and 0 otherwise. *Firm size* takes the value of 1, 2 or 3 if the enterprise is small, medium or large SME, respectively. *Domestic ownership* is the percentage of business ownership that is owned by domestic individuals or companies. *Manager's experience* is a number of years of the top manager experience. *Buddhist* is a dummy variable takes the value of 1 if the SME operate in countries with Buddhist culture and 0 otherwise. The real *GDP growth*, *interest rate*, *unemployment rate*, and *inflation rate* represent a 2-year average of the real GDP growth, interest rate, unemployment rate and inflation rate during three years before the interview, respectively. The standard errors are reported in parentheses. *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively.

Independent Variables	Coefficients for Regression Models		
	I	II	III
Female	-2.713** (1.189)	-3.148*** (1.202)	-3.148** (1.328)
Firm size	-0.505 (0.685)	-1.057 (0.643)	-1.057 (0.655)
Domestic ownership	0.038* (0.021)	-0.014 (0.021)	-0.014 (0.026)
Manager's experience	-0.092 (0.056)	-0.095* (0.056)	-0.095* (0.054)
Buddhist	-1.712 (1.128)	-149.324*** (13.399)	-149.324*** (18.008)
Real GDP growth		-16.238*** (1.322)	-16.238*** (1.773)
Interest rate		-10.610*** (1.224)	-10.610*** (1.588)
Unemployment		-55.542*** (4.869)	-55.542*** (6.502)
Inflation		33.967*** (3.070)	33.967*** (4.056)
Constants	-0.537 (2.606)	209.332 (18.141)	209.332 (24.371)
Observations	1056	1056	1056

Table 8: Cultural Difference in Financial Access

This table presents the financial access of SMEs in different culture. Financial access is a dependent variable which will equal to 1 if SMEs can access to loans and 0 otherwise. The model I and II report the results from Probit regressions with financial access as the dependent variables. The model II and III include macroeconomic factors. Female is a dummy variable takes the value of 1 if the SME is owned and led by females and 0 otherwise. Firm size takes the value of 1, 2 or 3 if the enterprise is small, medium or large SME, respectively. Domestic ownership is the percentage of business ownership that is owned by domestic individuals or companies. Manager's experience is a number of years of the top manager experience. Buddhist is a dummy variable takes the value of 1 if the SME operate in countries with Buddhist culture and 0 otherwise. FemalexBuddhist is a dummy variable takes the value of 1 if the enterprise is a female-owned SME in a country with Buddhist culture and 0 otherwise. 2-year growth is the 2-year compound annual growth rate of the enterprise. Femalex2-year growth is a dummy variable which shows the performance of female-owned SMEs. Buddhistx2-year growth is a dummy variable which shows the performance of SMEs in Buddhist culture. Femalex Buddhistx2-year growth is a dummy variable presents the performance of female-owned SMEs in Buddhist culture. The interest rate, unemployment rate, and inflation rate represent a 2-year average of the interest rate, unemployment rate and inflation rate during three years before the interview, respectively. The standard errors are reported in parentheses. *, ** and *** indicate significance at 10%, 5% and 1% levels, respectively.

Independent Variables	Coefficients for Regression Models		
	I	II	III (Logit)
Female	0.279 (0.158)	0.262 (0.161)	0.429 (0.277)
Firm size	0.201*** (0.058)	0.233*** (0.060)	0.411*** (0.105)
Domestic ownership	-0.002 (0.002)	-0.001 (0.002)	-0.001 (0.003)
Manager's experience	-0.013** (0.005)	-0.003 (0.005)	-0.005 (0.009)
Buddhist	0.466** (0.110)	-3.013*** (0.574)	-5.132*** (0.994)
Female*Buddhist	-0.504** (0.207)	-0.042 (0.225)	-0.045 (0.386)
2-year growth	0.001 (0.005)	0.001 (0.005)	0.002 (0.008)
Female*2-year growth	0.002 (0.009)	0.006 (0.009)	0.009 (0.015)
Buddhist*2-year growth	-0.004 (0.006)	-0.006 (0.006)	-0.012 (0.011)
Female*Buddhist*2-year growth	0.005 (0.011)	0.000 (0.012)	0.002 (0.019)
Interest rate		-0.051 (0.062)	-0.091 (0.104)
Unemployment		-1.093*** (0.171)	-1.858*** (0.296)
Inflation		0.343*** (0.096)	0.587*** (0.165)
Constants	-0.956 (0.221)	1.764 (0.539)	2.997 (0.921)
Observations	1056	1056	1056

CHAPTER 6

CONCLUSION

Most of the papers that study about gender discrimination and financial access of the enterprises focus on factors that are relevant to companies' revenue, which is performance-based, and the majority of them are based on African, South Asian and U.S. data. As there are many different conditions that may be specific only to these countries, for example, main religion, culture, market conditions and institution, evidence that has been found in these nations might not be applicable for other countries. Moreover, there are cultural differences across countries which may affect the level of accessing to finance of SMEs in SEA. As a number of studies find that there is a low level of financial access of female-owned SMEs in countries with male-dominated culture as well as countries with Islamic legislation (Ongena and Popov, 2016; Potrafke, 2016; Donno, 2006; Demirguc Kunt et al., 2015), women-owned SMEs in countries with high-gender bias might face more significant difficulties in accessing to finance compared to female-owned SMEs in low-gender bias culture.

To the best of my knowledge, there are a few studies that examine gender as well as cultural differences in financial access of SMEs in SEA. Thus, this study aims to examine gender and cultural differences in financial access of SMEs in six nations in SEA including Thailand, Laos, Cambodia, Myanmar, Indonesia and Malaysia. This study uses cross-sectional data from the World Bank Group, covering 2015 and 2016.

Investigating whether women-owned SMEs in SEA are facing more constraints when accessing to finance than men-owned SMEs or not. This study also aims to compare the business performance of enterprises that owned by males and females as business performance may influence the financial access of SMEs. This research also examines financial access of SMEs in different cultures and investigates the proportion of internal fund that is used by female- and male-owned SMEs in their daily operations.

The result shows that there is no significant difference between financial access of female- and male-owned SMEs. This may imply that there is no gender gap in financial access of SMEs which corresponds to the studies by Moro and Wisniewski, (2014) and Hansen and Rand, (2014). Additionally, the empirical result shows that there is no significant difference between the proportion of internal fund that is employed by the female- and male-owned enterprises in their daily operations and no statistical significance between financial access of SMEs across culture.

Nevertheless, the result shows that there is a significant difference between the business performance of female- and male-owned SMEs. The business performance of female-owned SMEs in SEA are poorer than their counterparts. The result also indicates that there is a difference between the proportion of internal fund that is used by female-owned SMEs across culture. SMEs in Buddhist culture are likely to use more proportion of internal fund to finance their day-to-day operations than SMEs in countries with non-Buddhist countries.

As the finding shows that female-owned SMEs in SEA have lower business performance than counterparts, the policy which helps to develop essential entrepreneurial skills for women entrepreneurs should be considered by the government in order to improve the business execution of female-owned SMEs. For example, business workshop and business training program. In addition, raising the education level of women could also help to improve the business performance of female-owned firms as well as the survivability of their company.

However, there are some limitations in this study. As this research uses the dataset from the World Bank Enterprises Survey, the data which might be necessary for the study are limited. Thus, it is not possible to examine factors that may influence the financial access of SMEs, apart from the data that is given in the survey. On the other hand, the cross-sectional data, which the World Bank has collected, is a 1-year survey in each country which might be considered as a short time frame. By using the dataset with a more extended time period for each data point, could help to improve the research quality. Additionally, as the survey has been done in a different period of time on SMEs in Buddhist and non-Buddhist countries, hence, the economic situation might be different across countries, controlling macroeconomic factors is required. Lastly, the research observation might not adequately explain the enterprise population as there is a number of SMEs in each nation; however, only some enterprises are being interviewed by the World Bank. As a consequence, there is a relatively small sample size available to study.

For further study, essential factors which may impact the level of financial access of SMEs should be explored in more detail. For example, education levels of owner, owners' age, reasons to become entrepreneurs, family sizes, etc. Furthermore, the observation should be large enough with an appropriate time frame to represent the population of SMEs in each country.



REFERENCES

- Abreu-Ledón, R., Luján-García, D. E., Garrido-Vega, P., & Escobar-Pérez, B. (2018). A meta-analytic study of the impact of Lean Production on business performance. *International Journal of Production Economics*, 200, 83-102.
- Aggarwal, R., & Goodell, J. W. (2014). Cross-national differences in access to finance: Influence of culture and institutional environments. *Research in International Business and Finance*, 31, 193-211.
- Aterido, R., Beck, T., & Iacovone, L. (2013). Access to Finance in Sub-Saharan Africa: Is There a Gender Gap? *World Development*, 47, 102-120.
- Alibhai, S., Bell, S., & Conner, G. (Eds.). (2017). What's Happening in the Missing Middle? Lessons from Financing SMEs. Retrieved January 17, 2018, from <http://www.worldbank.org/en/topic/financialsector/publication/whats-happening-in-the-missing-middle-lessons-from-financing-smes>
- Becker, G. S. (1995). *The economics of discrimination*. Chicago, Ill.: Univ. of Chicago Press.
- Bell, C., & Clemenz, G. (1998). Credit markets with moral hazard and heterogeneous valuations of collateral. *Research in Economics*, 52(3), 285-309.
- Bellucci, A., Borisov, A., & Zazzaro, A. (2010). Does Gender Matter in Bank-Firm Relationships? Evidence from Small Business Lending. *Journal of Banking &*

Finance, 34, 2968-2984.

Bennouri, M., Chtioui, T., Nagati, H., & Nekhili, M. (2018). Female board directorship and firm performance: What really matters? *Journal of Banking & Finance*, 88, 267-291.

Brixiová, Z., & Kangoye, T. (2016). Gender and constraints to entrepreneurship in Africa: New evidence from Swaziland. *Journal of Business Venturing Insights*, 5, 1-8.

Brush, C. G., Carter, N. M., Gatewood, E. J., Greene, P. G., & Hart, M. (2004). Gatekeepers of Venture Growth: A Diana Project Report on the Role and Participation of Women in the Venture Capital Industry.

Buttner, E., & Rosen, B. (1988). Bank loan officers' perceptions of the characteristics of men, women, and successful entrepreneurs. *Journal of Business Venturing*, 3(3), 249-258.

Cavalluzzo, K. S., & Cavalluzzo, L. C. (1998). Market Structure and Discrimination: The Case of Small Businesses. *Journal of Money, Credit and Banking*, 30(4), 771-792.

Cavalluzzo, K. S., Cavalluzzo, L. C., & Wolken, J. D. (2002). Competition, Small Business Financing, and Discrimination: Evidence from a New Survey. *The Journal of Business*, 75(4), 641-679.

Central Department of Small and Medium Enterprises Development. (2012). SME Definition. Retrieved June 9, 2018, from <https://bit.ly/2L0TNn4>

Chaganti, R., DeCarolis, D., and Deeds, D. (1995), 'Predictors of capital structure in

- small ventures', *Entrepreneurship Theory and Practice* (winter), pp 1042–2587
- Cole, R., & Sokolyk, T. (2016). Who needs credit and who gets credit? Evidence from the surveys of small business finances. *Journal of Financial Stability*, 24, 40-60.
- Cole, R. A., & Sokolyk, T. (2018). Debt Financing, Survival, and Growth of Start-Up Firms. *Journal of Corporate Finance*, 50, 609-625.
- Czajor, P., Michalak, J., & Waniak-Michalak, H. (2013). Influence of Economy Growth on Earnings Quality of Listed Companies in Poland. *Social Sciences*, 82(4).
- Danes, S. M., Stafford, K., & Loy, J. T. (2007). Family business performance: The effects of gender and management. *Journal of Business Research*, 60(10), 1058-1069.
- Demirguc-Kunt, A., Klapper, L., Singer, D., & Oudheusden, P. V. (2015). The Global Findex Database 2014: Measuring Financial Inclusion around the World. *Policy Research Working Papers*.
- D'Espallier, B., Guérin, I., & Merland, R. (2011). Women and Repayment in Microfinance: A Global Analysis. *World Development*, 39(5), 758-772.
- Donno, D. (2006). Islam, Authoritarianism, and Female Empowerment: What Are the Linkages? *Purpose and Policy in the Global Community*, 115-133.
- Douangdara, V., & Yanghang, Y. (2017). Overview of the Policies for Attracting Foreign Direct Investment Inflows into Lao PDR. *Public Policy and Administration Research*, 7(10).
- Duygan-Bump, B., Levkov, A., & Montoriol-Garriga, J. (2015). Financing Constraints and Unemployment: Evidence from the Great Recession. *Journal of Monetary*

Economics,75, 89-105.

Economic and Monetary Developments. (2007). Retrieved July 2, 2018, from <https://bit.ly/2tSweC8>

Fabowale, L., Orser, B., & Riding, A. (1995). Credit Rationing in Markets with Imperfect Information. *Entrepreneurship Theory and Practice*, 19(4), 41-65.

Fairlie, R. W., & Robb, A. M. (2008). Gender Differences in Business Performance: Evidence from the Characteristics of Business Owners Survey. *Small Business Economics*.

Findlay, R., Park, C., & Verbiest, J. A. (2015). Myanmar: Unlocking the Potential. A Strategy for High, Sustained, and Inclusive Growth. *Asian Development Bank Economics Working Paper Series*.

Fowowe, B. (2017). Access to finance and firm performance: Evidence from African countries. *Review of Development Finance*,7(1), 6-17.

Gender Equality Workshop. (2017). Retrieved May 9, 2018, from <http://www.my.undp.org/content/malaysia/en/home/presscenter/speeches/2017/08/30/gender-equality-workshop.html>

Gouda, M., & Potrafke, N. (2016). Gender equality in Muslim-majority countries. *Economic Systems*, 40(4), 683-698.

Green, C. P., & Homroy, S. (2018). Female Directors, Board Committees and Firm Performance. *European Economic Review*,102, 19-38.

Hansen, H., & Rand, J. (2014). Estimates of gender differences in firm's access to

credit in Sub-Saharan Africa. *Economics Letters*, 123(3), 374-377.

Hayase, K. (2008). Small & Medium Enterprises Development Policies in Malaysia.

Field Survey, Interview and Report

Khalife, D., & Chalouhi, A. (2013). Gender and business performance. *International*

Strategic Management Review,1(1-2), 1-10.

Klapper, L. F., & Parker, S. C. (2010). Gender and the Business Environment for New

Firm Creation. *The World Bank Research Observer*, 26(2), 237-257.

Kim, J., Lee, J., & Shin, K. (2016). Impact of Gender Inequality on the Republic of

Koreas Long-Term Economic Growth: An Application of the Theoretical Model

of Gender Inequality and Economic Growth. *ADB Economics Working Paper*

Series, 475.

Leitner, Y. (2006). Using Collateral to Secure Loans. Retrieved July 4, 2018, from

<https://bit.ly/2MJHpol>

Mayoux, L. (2007). *Microfinance and gender: New contributions to an old issue*.

Luxembourg: Appui au Développement Autonome.

Mehrotra, M., Tan, A., & Ng, J. (2015). Digital banking for small and medium-sized

enterprises. Retrieved December 25, 2017, from <https://bit.ly/2pMadW7>

Moreira, D. F. (2016). The Microeconomic Impact on Growth of SMEs When the Access

to Finance Widens: Evidence from Internet & High-tech Industry. *Procedia -*

Social and Behavioral Sciences,220, 278-287.

Moro, A., & Wisniewski, T. P. (2014). Does a Managers Gender Matter When Accessing

- Credit? Evidence from European Data. *Journal of Banking & Finance*.
- Muravyev, A., Talavera, O., & Schäfer, D. (2009). Entrepreneurs' gender and financial constraints: Evidence from international data. *Journal of Comparative Economics*, 37, 270–286.
- Nagai, K. (2007). Small & Medium Enterprise Development Policies in Thailand. *Field Survey, Interview and Report*
- Neumeyer, P., & Perri, F. (2005). Business Cycles in Emerging Economies: The Role of Interest Rates. *Journal of Monetary Economics*, 52(2), 345-380.
- Olawale, F., & Garwe, D. (2010). Obstacles to the growth of new SMEs in South Africa: A principal component analysis approach. *African Journal of Business Management*, 4(5), 729-738.
- Omura, K. (2008). Small & Medium Enterprises Development Policies in Indonesia. *Field Survey, Interview and Report*
- Ongea, S., & Popov, A. (2016). Gender Bias and Credit Access. *Journal of Money, Credit and Banking*, 48(8), 1691-1724.
- Orser, B. J., Riding, A. L., & Manley, K. (2006). Women Entrepreneurs and Financial Capital. *Entrepreneurship Theory and Practice*, 30(5), 643-665.
- Quartey, P., Turkson, E., Abor, J. Y., & Iddrisu, A. M. (2017). Financing the growth of SMEs in Africa: What are the constraints to SME financing within ECOWAS? *Review of Development Finance*, 7(1), 18-28.
- Ram, M., & Deakins, D. (1995). *African-Caribbean entrepreneurship in Britain*.

Birmingham: University of Central England Business School.

Real Gross Domestic Product. (2016). Retrieved July 9, 2018, from <https://fred.stlouisfed.org/series/GDPC1>

Robb, A. M., & Wolken, J. (2002). *Firm, owner, and financing characteristics: Differences between female- and male-owned small businesses*. Federal Reserve Working Paper Series: 2002-18. Federal Reserve Board of Governors: Washington D.C.

Roomi, M. A., & Parrott, G. (2008). Barriers to Development and Progression of Women Entrepreneurs in Pakistan. *The Journal of Entrepreneurship*, 17(1), 59-72.

Royal Government of Cambodia Sub-committee on Small and Medium Enterprises SME Secretariat. (2005). *Small and Medium Enterprise Development Framework*.

Schnabel, L. (2018). More Religious, Less Dogmatic: Toward a General Framework for Gender Differences in Religion. *Social Science Research*.

Schubert, S. F., & Turnovsky, S. J. (2018). Growth and unemployment: Short-run and long-run tradeoffs. *Journal of Economic Dynamics and Control*, 91, 172-189.

Smallbone, D., Welter, F., Isakova, N., & Slonimski, A. (2001). The Contribution of Small and Medium Enterprises to Economic Development in Ukraine and Belarus: Some Policy Perspectives. *Economic Policy in Transitional Economies*, 11(3), 253-273.

Srinivasan, R. (1994). *Performance determinants for male and female entrepreneurs*.

West Lafayette, IN: Krannert Graduate School of Management, Institute for Research in the Behavioral, Economic, and Management Sciences.

Stiglitz, J. E., & Weiss, A. (1981). Credit Rationing in Markets with Imperfect Information. *The American Economic Review*, 71(3), 393-410.

Storey, D. J. (2004). Racial and Gender Discrimination in the Micro Firms Credit Market?: Evidence from Trinidad and Tobago. *Small Business Economics*, 23(5), 401-422.

Tachasermsukkul, L. (2010.). Small & Medium Enterprises Development Policies in Laos. *Field Survey, Interview and Report*

Tambunan, T. T. (2009). Development Constraints. *SMEs in Asian Developing Countries*, 159-184.

Vandenberg, Paul, et al., editors. *SMEs in developing Asia: new approaches to overcoming market failures*. Asian Development Bank Institute, 2016.

Watson, J., & Robinson, S. (2003). Adjusting for risk in comparing the performances of male- and female-controlled SMEs. *Journal of Business Venturing*, 18(6), 773-788.

Wignaraja, G., & Jinjara, Y. (2015). Why Do SMEs Not Borrow More from Banks? Evidence from the Peoples Republic of China and Southeast Asia. *Asian Development Bank Institute*. Retrieved July 4, 2018, from <https://goo.gl/s3vKgQ>

The World Bank. (2017). Retrieved January 3, 2018, from <http://www.enterprisesurveys.org>

The World Bank. (2017). Retrieved April 27, 2018, from
<https://data.worldbank.org/indicator/NY.GDP.PCAP.CD>

The World Bank. (2017). Retrieved July 2, 2018, from
<https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG>

The World Bank. (2017). Retrieved July 2, 2018, from
<https://data.worldbank.org/indicator/SL.UEM.TOTL.ZS>

The World Bank. (2017). Retrieved July 2, 2018, from
<https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG>

World Development Report: Gender Equality in Indonesia Improving. (2011).
Retrieved May 8, 2018, from <https://goo.gl/FApcQQ>

World - Interest Rate. (2018). Retrieved July 2, 2018, from
<https://ieconomics.com/interest-rate>

Zbierowski, P. (2015). Well-Being Of Entrepreneurs - International Comparison Based
On Gem Data. *Journal of Positive Management*, 5(4), 89-100.



APPENDIX

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

Table A1: Definition of SMEs

Country	Size of Enterprise	Number of Employment	Capital (million)	Turnover (million)
Thailand	Small	≤ 50	≤ 50 THB	
	Medium	51-200	51-200 THB	
Laos	Small	≤ 19	< 250 Kip	< 400 Kip
	Medium	≤ 99	< 1200 Kip	< 1000 Kip
Cambodia	Micro	≤ 10	USD 0.05	
	Small	11-50	USD 0.05 – USD 0.25	
	Medium	51-100	USD 0.25 – USD 0.5	
Myanmar	Small and Medium (Manufacturing)	10-150	< 1000 Kyat	
	Small and Medium (Service)	10-150	< 500 Kyat	
Malaysia	Micro	< 5		< RM 0.25 (Manufacturing) < RM 0.2 (Services and Other Sectors)
	Small	5-74 (Manufacturing) 5-29 (Services and Other Sectors)		RM0.3 - RM15 RM0.3 - RM3
	Medium	75-200 (Manufacturing) 30-75 (Services and Other Sectors)		RM15 – RM50 RM3 – RM20
Indonesia	Micro		< Rp 50	< Rp 300
	Small		Rp 50 - 500	Rp 300 - 2500
	Medium		> Rp 500-10000	> Rp 2500-50000

Source: Nagai (2007), Tachasermsukkul (2010), Hayase (2008), Omura (2008), Royal Government of Cambodia Sub-committee on Small and Medium Enterprises SME Secretariat (2005), Central Department of Small and Medium Enterprises Development (2012).

VITA

Wannaporn Phongapai was born in Ratchaburi, Thailand, in January 1995. She decided to study her bachelor's degree in Economics at Chiang Mai University. She received first honor with gold medal along with her degree. She decided to enhance her knowledge about finance and banking, so she chose Master of Science in Finance at Chulalongkorn University as the place to sharpen her skills and become an outstanding individual to contribute to the society. For further inquiries, please contact the author via email at w.phongapai@gmail.com





จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY