



Chapter 2

Literature Review

The objective of this chapter is to review the literature relevant to this study. Three underlying bodies of literature, i.e. the resource-based theory, social network, and export performance, will be reviewed to develop the hypotheses of the study. The three

2.1 Resource-based Theory

The emergence of the 'Resource-Based View' has been questioned of its merit as whether the concept provides much additional insight over traditional ones existing in the strategic management study (Peteraf, 1993: 179). As a matter of fact, the resource-based view shares the core, fundamental notion with other theories in the strategic management field: the notion that firms are fundamentally heterogeneous, in terms of their resources and internal capabilities. As one can sense, heterogeneity as the source of difference and superiority of one firm over another is rather vague.

The true spirit and merit of the resource-based theory is the attempt to shed the light on that black box of heterogeneity and spell out the inside details. The theory focuses on resources possessed by firms as a true source of heterogeneity, as the history of resource accumulation of each firm has its own uniqueness (Penrose 1995:22). Source of superiority, which is even a more focal concept of the theory, lies in the four dimensions of resource: (i) value, (ii) rarity, (iii) imperfect imitability, and (iv) imperfect substitutability (Barney, 1986).

Therefore, resource-based view takes a new turn in the strategic management study by emphasizing on resources of firms rather than their competitive environment (Miller and Shamsie, 1996: 59). It is obvious that the resource-based theorists turns their backs to Industrial Organization view, whose structure-conduct-performance paradigm overly stresses on external environment and ignores what embeds inside firms (Russo and Fouts, 1997: 536). The resource-based theory is built around the internal competencies of firms (Wernerfelt, 1984; Diericks and Cool, 1989; and Prahalad and Hamel, 1990).

One unquestionable fact is that the resource-based concept is still in its beginning stage (Peteraf, 1993; Maijor and Wittelosstuijn, 1996; Miller and Shamsie, 1996; Russo and Fouts, 1997). Some scholars are even reluctant to address it as 'theory' or 'view'. However, in recent years, there has been a great effort to move from a resource-based 'view' toward a 'theory' by progressing from mere description to testable prediction (Miller and Shamsie, 1996: 519).¹ Most of the applications of the resource-based theory center around the issue of corporate policy and the effect of different type of resource on economic performance of firms (e.g. Robins & Wiersema, 1995; Miller & Shmsie, 1996; Maijor & Wittleoostuijn, 1996; Markides

¹ Miller and Shamsie (1997) distinguish a view from theory as the former is a product of evocative description, but the latter demands the formulation of falsifiable propositions.

Types of resource have been classified in numerous ways: property-based and knowledge-based (Miller and Shamsie, 1996); customers assets, channel assets and process experience assets (Markides and Williamson, 1996); cooperative, strategic, competitive and financial. However, the most cited categorization of firms' strategic resources divides the resources into 5 groups: physical, human, organizational, financial, political, and technology (Russo and Faust, 1997; Fladmoe-Lindquist and Tallman, 1997).

Condition of strategic resources

As earlier mentioned, the focal point of the resource-based theory is the nature or condition of resources that guarantee firms a sustainable competitive advantage. Although the applications and interpretations of the resource-based theory lead to a diverse descriptions and terminology of strategic resource, a common understanding exists. According to the theory, resources can be a source of sustainable competitive advantage if they are (i) valuable, (ii) rare, (iii) imperfectly imitable, and (iv) imperfectly substitutable. Peteraf (1993) provides a coherent illustration of the rationale behind the four necessary conditions. As Peteraf summarizes, '[t]here are four such conditions, all of which must be met. The first of these is resource heterogeneity, from which come Ricardian or monopoly rents. Ex post limits to competition are necessary to sustain the rents. Imperfect resource mobility ensures that the rents are bound to the firm and shared by it. Ex ante limits to competition prevent costs from offsetting the rents'.

Heterogeneity:

A basic assumption of resource-based work is that the resource bundles and capabilities underlying production are heterogeneous across firms (Barney, 1991). One might describe productive factors in use as having intrinsically differential levels of 'efficiency.' Some are superior to others. Firms endowed with such resources are able to produce more economically and/or better satisfy customer wants (Peteraf, 1993: 180). Heterogeneity of resource is explained both by Ricardian model of economic rents and model of monopoly rents (market power). The two models are in congruence with respect to the nature of limited supply of the resource.

However, while Ricardian rents arise from inherent scarcity of the resource, monopoly rents result from deliberate restriction of output, through various kinds of barriers by firms. Ricardian argument holds that firms with superior resources have lower average costs than do other firms. These low cost firms have somewhat inelastic supply curves, in that they cannot expand output rapidly, regardless of how high the price may be. With this condition, firms with superior resources can demand supranormal profits in the form of rents to their scarce resources and produce at the point where price exceeds average cost ($P > AC$). This is because the superior resources remain limited in supply. Therefore, efficient firms can sustain this type of competitive advantage only if their resources cannot be expanded freely or imitated by other firms.

Ricardian model is often thought of with respect to resources, which are strictly fixed in supply. But it may be applied as well to quasi-fixed resources, which are of much greater importance. These are resources which, while limited in the short run, may be renewed and expanded incrementally within the firm that utilizes them (Nelson and

Winter, 1992; Wernerfelt, 1989). Utilization of such resources may in fact augment them, and in turn, keep firms growing. In monopoly models, heterogeneity may result from spatial competition or product differentiation. It may reflect uniqueness and localized monopoly. It may be due to the presence of intra-industry mobility barriers, which differentiate groups of firms from one another (Caves and Porter, 1977). It may entail size advantages and irreversible commitments or other first mover advantages. These firms then maximize profits by consciously restricting their output relative to competitive levels. These are models of market power. Unlike Ricardian models, many are 'strategic' in that firms take into account the behavior and relative position of their rivals. Homogeneous firms may also earn monopoly rents. Cournot behavior exhibited by identical rivals, for example, may yield prices in excess of marginal costs. So may collusive behavior, tacit or otherwise. But these kinds of behaviors are facilitated by fewness of numbers and therefore depend on barriers to entry.

Ex post limits to competition:

Superior resources of firms can be a source of sustainable competitiveness only if their heterogeneity is preserved and remains in the longrun. This will be the case only if there are in place ex post limits to competition. This means that subsequent to a firm's gaining a superior position and earning rents, there must be forces, which limit competition for those rents. Competition may dissipate rents by increasing the supply of scarce resources. Alternatively, it might undermine a monopolist (or oligopolist) attempt to restrict output.

Ex post competitions erodes monopoly rents as well, by increasing output or by making individual demand curves more elastic. Resource-based model suggests two critical factors, which limit ex post competition: imperfect imitability and imperfect substitutability. Substitutes reduce rents by making the demand curves of monopolists or oligopolists more elastic. This is one of Porter's (1980) classic 'five forces.' Imitability, on the other hand, undermines the rents in the same fashion. As a result, firms have to create 'isolating mechanisms' (Rumelt, 1984), to protect individual firms from imitation and preserve their rent streams. Isolating mechanisms include property rights to scarce resources and various quasi-rights in the form of lags, information asymmetries, and frictions which impede imitative competition (Rumelt, 1987). In addition, Lippman and Rumelt (1982) propose the notion of causal ambiguity also as an isolating mechanism.

Causal ambiguity prevents would-be-imitators from knowing exactly what to imitate or how to go about it. Couple with non-recoverable costs, such uncertainty may limit imitative activity, thus preserving the condition of heterogeneity. Other isolating mechanisms include producer training, buyer switching costs, reputation, buyer search costs, channel crowding, economies of scale (Rumelt, 1987), mobility barriers (Caves and Porter, 1977), production economies and sunk costs, transaction costs, imperfect information (Yao, 1988). Ghemawat (1986) argues that inimitable positions derive from size advantages, preferred access to either resources or customers, and/or restrictions on competitors' options. Dierickx and Cool (1989) maintain that how imitable an asset is depends upon the nature of the process by which it was accumulated. They identify the following characteristics as serving to impede imitation: time compression, interconnectedness of asset stocks, asset erosion, and causal ambiguity.

Dierickx and Cool's (1989) paper is a particularly important piece of work because it focuses precisely on those kinds of resources and capabilities which are of central concern to resource-based theory: nontradeable assets which develop and accumulate within the firm. Such assets tend to defy imitation because they have a strong tacit dimension and socially complex. They are born of organizational skill and corporate learning. Their development is 'path dependent' in the sense that it is contingent upon preceding levels of learning, investment, assets stocks, and development activity. For such assets, history matters. Would-be-imitators are thwarted by the difficulty of discovering and repeating the developmental process and by the considerable lag involved. Assets of this nature are also immobile and thus bound to the firm. Factor immobility or imperfect mobility is another key requirement for sustainable advantage.

Imperfect mobility:

Immobility or imperfect mobility of resources generates sustainable competitiveness for firms in that it allows only the use bounded in the firms. In other words, resources will be best utilized only if they remain in the owning firms. Resources are perfectly immobile if they cannot be traded (Peteraf, 1993: 183). Dierickx and Cool (1989) discuss several examples of this sort. Resources for which property rights are not well defined or with 'bookkeeping feasibility' problems fall into this category (Dierickx and Cool, 1989; Meade, 1952; Bator, 1958). So do resources which are idiosyncratic to the extent that they have no other use outside the firm. (See Williamson, 1979). For imperfectly mobile resources are those that can be traded but they are more valuable within the firm that currently employs them than they would be in other employ. Montgomery and Wernerfelt (1988) use the concept of switching costs to discuss how firm-specific investments may cement the trading relationship between a firm and the owners of factors employed by the firm.

These investments by the resource owners may be regarded as a sunk cost (nonrecoverable cost) which may inhibit the factor's exit from a firm. These costs give the firm a greater claim on the resource in question. Imperfect mobility of resource may also derive from the exceedingly high transactions costs associated with their transfer between firms (Williamson, 1975; Rumelt, 1987). In sum, immobile or imperfectly mobile resources are nontradeable or less valuable to other users, therefore cannot be bid away readily from their employer. They remain bound to the firm and available for use over the long run. Thus they can be a source of sustained advantage. In addition, the opportunity cost² of their use is significantly less than their value to the present employer (Peteraf, 1993: 184).

Ex ante limits to competition

The last necessary condition for a resource to generate a sustainable competitiveness to a firm is the ex ante limits to competition. This means that prior to any firm's establishing a superior resource position, there must be limited competition for that position. Suppose it is perceived, a priori, by equally endowed firms that by

² Peteraf (1993) uses a slightly different definition of opportunity cost from the original one. In his explanation, opportunity cost is referred to as the second-highest valuing potential-user, not the next best use of the resource as traditionally held.

occupying certain choice locations they can gain an inimitable resource position over their rivals. What will ensue is fierce competition for those locations to the point that the anticipated returns are, in essence, competed away.

A superior location could only be a source of above normal returns if some firm had the foresight or good fortune to acquire it in the absence of competition. This is the point brought out by Barney (1986) in arguing that the economic performance of firms depends not only on the returns from their strategies but also on the cost of implementing those strategies. With imperfections in strategic factor markets, where the resources necessary to implement strategies are acquired, firms can only hope for normal returns. Rument(1987) makes a similar point in noting that unless there is a difference between the ex post value of a venture and the ex ante cost of acquiring the necessary resources, the entrepreneurial rents are zero. Profits come from ex ante uncertainty. While only tradeable resources can be acquired in strategic factor markets, the argument can be extended to immobile and imperfectly mobile resources as well, as both Dierickx and Cool (1989) and Barney (1989) have noted. Ex ante competition to develop imperfectly mobile resources, such as the good will of clients, can also dissipate expected returns. While it is less likely that the full value of such resources will be anticipated or that firms will be equally efficient in accumulating such resources, it is important to recognize that imperfect resource mobility is not sufficient unto itself. There must be limits to ex ante competition as well.

2.2 Social Network

There have been efforts to make a claim that social network analysis is a specific body of theory, rather than just a set of method. Barnes and Harary (1983), for example, have argued that it is possible to advance from the use of formal concepts to the use of formal theory. They argue that the promise of social network analysis can be realized only if researchers move beyond the use of formal concepts for purely descriptive purposes. Mathematics consists of theorems, which specify the determinate logical links between formal concepts. Barnes and Harary argue that if the formal concepts prove to be useful ways of organizing relational data, then the theorems too should be applicable to relational data. The application of theorems drawn from formal mathematics, then, 'reveals real world implications of the model that might otherwise have not been noticed or utilized by the designer of the model' (Barnes and harary, 1983: 239.).

Some have suggested that developments in social network analysis already point the way to novel frameworks of sociological theory, or to the re-assertion of earlier theories. Particularly influential, for example, have been advocates of an exchange theoretical perspective on social network (Emperson, 1962, 1964; Cook, 1977, 1982), which is associated with wider 'transactionalist' approaches (Bailey, 1969; Bosissevain, 1974) and rational choice theories (Lin, 1982). However, Scott (1991) plays down that it is more appropriate to regard social network analysis as a particular set of methods.

It is undoubtedly the case that social network analysis embodies a particular theoretical orientation towards the structure of the social world and that it is,

therefore, linked with structural theories of action. But it seems unlikely that any one substantive theory should be regarded as embodying the essence of social network analysis.

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Social network analysis, in recent years, appears as a research tool in various fields including community elite decision making (Laumann & Pappi, 1973), social influence (Marsden & Friedkin, 1994), power (Brass & Burkhardt, 1993), and innovation diffusion (Burt, 1987).

Network Centrality, Network Proximity, and Network Types

Among many concepts in social network analysis, centrality was one of the earliest to be pursued (Scott, 1991: 85) by social network analyst. Centrality is a concept comparable to the previously mentioned ‘sociometric star’: the recipient of numerous and frequent choices from others and who, therefore, held a position of great popularity and leadership. The formal properties of centrality were initially investigated by Bavelas (1950), and, since his pioneering work a number of competition concepts of centrality have been proposed. The confusion increased as the number of different ways to measure centrality grew. However, the majority of the approaches to centrality is a concern for the relative centrality of the various point in the graph—the question of so-called ‘point centrality’ (Scott, 1991: 85).

It must be made clear at the outset that centrality and another concept belonging to the field, centralization, may cause serious confusion and misleading. Centralization of a graph refers not to the relative prominence of points, but to the overall cohesion or integration of the graph. Graphs may, for example, be more or less centralized around particular or sets of points. However the concept of centralization is not in the interest of this study and a further detail of the concept and measurement will not be pursued.

There are three types of centrality that are most discussed and examined: degree, closeness, and betweenness (Rowley, 1997). The *degree* centrality is simply the number of other points to which a point is adjacent (Scott, 1991: 86). A point is central, then, if it has a high degree; the corresponding agent is central in the sense of being ‘well-connected’ or ‘in the thick of things’. In short, degree centrality is a measure of an actor’s number of direct ties to other actors. *Closeness* centrality was proposed by Freeman (1979, 1980). The measure is expressed in terms of the *distances* among the various points. Two points are connected by a path if there is a sequence of distinct lines connecting them, and the length of a path is measured by the number of lines which make it up.

In graph theory, the length of the shortest path between two points on the surface of the earth lies along the geodesic, which connects them, and, by analogy, the shortest path between any particular pair of points in a graph is termed a ‘*geodesic*’. A point is globally central if it lies at short distances from many other points. Such a point is ‘close’ to many of the other points in the graph. In other words, closeness is a measure of an actor’s independent access to others. Freeman (1979) adds yet another concept of centrality, which he terms the *betweenness*. This concept measures the extent to which a particular point lies ‘between’ the various other points in the graph:

a point relatively low degree may play an important ‘intermediary’ role and so be very central to the network. The betweenness of a point measures the extent to which an agent can play the part of a ‘broker’ or ‘gatekeeper’ with a potential for control over others. Freeman’s approach to betweenness is built around the concept of ‘local dependency’. A point is dependent upon another if the paths, which connect it to the other points, pass through this point. Betweenness is, perhaps, the most complex of the measures of point centrality to calculate and has been least examined by researchers. However, the only aspect of centrality that will be applied in this study is degree of centrality.

Besides the concepts of centrality, *network proximity* and *network types* have also been central to research in social network area. **Proximity measures include such things as the number or frequency of contacts between individuals, the size of shareholding relations between enterprises, the number of members in common between organizations and so on** (Scott, 1991: 152; Pastor & Mayor 1995: 17). In one sense, proximity is a measure of ‘closeness’ of the network in aggregate. Proximity signifies the strength of relationship among actors. Granovetter (1974) explains that the greater level of information and support tend to be conveyed among people who have more frequent interactions.

Social Network theorists categorize **Network types** into *instrumental* and *expressive*. Each type has different impact on the level of information and support transmitted from one actor to another. Instrumental network links arise in the course of work-role performance, while expressive network relations primarily provide friendship and social support (Tichy, Tushman, and Fombrun, 1974; Lincoln and Miller, 1979; Fombrun, 1982). Friendship ties are more likely than instrumental ties to link people who are similar with respect to both personal characteristics and organizational affiliations and who are thus more likely to have consistent interests. In addition friendship ties also tend to be characterized by more frequent interaction than other types of ties (Granovetter, 1973; Krackhardt and Porter, 1986), providing greater repetition of information and increasing the opportunity for the transmission of social cues (Salancik and Pfeffer, 1978). Finally, due to their strength and concomitant pressures for conformity, expressive links carry greater potential for persuasion and influence (Rogers and Kincaid, 1981; Granovetter, 1982; Krackhardt, 1992). Information obtained from friends thus may be more credible or relevant, more easily or frequently available, and more persuasive or influential (Brass, 1992).

Despite the increasing use of social network analysis to understand many behavioral and social phenomena in recent years (Rawley, 1997), only a limited number of studies are in the business management area. Following are some prominent works that the concepts of network centrality and proximity are investigated.

Ibarra and Andrews (1993) conducted an empirical research to evaluate the effects of network centrality, proximity and network type on employees’ work attitudes. The study explores the relative contributions of individual attributes, formal organizational positions, network centrality, network proximity, and network types in explaining individual variation in perceptions of work-related conditions in an advertising firm. The argument is based on theories that emphasize the relationship between situational opportunities and constraints on the other (Salancik and Pfeffer, 1978). The structural context of network relationships, i.e., to which one is connected

via direct and indirect network links, determines access to valued resources. **Actors who are centrally located within organization-wide webs of interaction have greater control over relevant resources.**

In addition, specific network contacts provide opportunities for comparing and interpreting perceptions, which in turn influence information saliency and subsequent perceptions. Favorable perception, therefore are viewed as developed or reinforced in direct interaction with people who have favorable views; the greater individual's centrality, the more likely he or she is to be in contact with others who perceive workplace features in favorable terms, hence the **positive correlation between centrality and attitudes**. They therefore argue that network interaction affects individual's perceptions through two mechanisms: localized social influence based on network proximity and systemic power based on network centrality. In addition, Ibarra and Andrew hypothesize that expressive network proximity will be a stronger predictor of work-related perceptions than instrumental network proximity.

Following Krackhardt (1990) instrumental and expressive networks are measured with two sociometric questions. Respondents were asked to name the people in their firm (1) who are "important sources of professional advice, whom you approach if you have a work-related problem or when you want advice on a decision you have to make." and (2) "who are very good friends of yours, people who you see socially outside of work." Answers to these two questions provided the raw data used to derive centrality and proximity indicators. In an effort to limit measurement error (Holland and Leinhardt, 1973), respondents are not restricted to a fixed number of nominations. Ten blanks are provided after each question but respondents are instructed to employ as many spaces as needed, resulting in several individuals creating additional blanks.

As a recognition aid, respondents are also provided with the firm's one-page telephone directory, listing all members. Centrality is operationalized as an "aggregate prominence" (Knoke and Burt, 1983) measure, which indexes individual centrality as a function of the centrality of those to whom one is connected through direct and indirect links (Bonacich, 1987). Rather than allowing all relationships of equal proximity to contribute equally to an actor's centrality, as in Freeman's (1978) "closeness" measure, this formulation assumes that centrality is increased positively by connections to others who are highly central and assigns the highest level of centrality to the actors with the closest relations (that is, direct or short indirect links) with many central actors (Bonacich, 1987). A series of nested regression models are developed for data analysis. The two major hypotheses are statistically supported.

Rawley (1997) uses the concept of centrality in explaining the relationships between individual stakeholders and local organizations. In his study, centrality refers to an individual actor's position in the network relative to others. Centrality measure signifies an actor's prominence (Wasserman and Galaskiewicz, 1994) or power (Brass and Burkhardt, 1993). Rowley measures the focal organization's betweenness centrality and argues that since organizations with high centrality (high betweenness) facilitate exchanges between actors (Freeman, 1979; Scott, J. 1991), they are able to manipulate information. As a result, they are able to resist stakeholder pressures. Besides the concept of organizational centrality, Rowley applies the concept of 'density' of a network.

Density is a characteristic of the whole network; it measures the relative number of ties in the network that link actors together. Density is calculated as a ratio of the number of relationships that exist in the network (stakeholder environment), compared with the total number of possible ties if each network member were tied to every other member. As the density increases, they argue, communication across the network becomes more efficient and actors form patterns of exchange and produce shared behavioral expectations. These conditions tend to produce unified stakeholder pressures and to lead organizations toward conformity. Consequently, as network density increases the ability of a focal organization's stakeholders to constrain the organization's actions increases. Although hypotheses are set up, they are not tested and no statistical analysis is reported.

Pastor and Mayo (1995) applied the concept of social network analysis on a research investigating charismatic leadership. In this study, social network analysis is used as a framework to examine and understand the relationship between organizational variables and personal attributions. The important concepts of social network analysis used in the study are network types, organizational proximity, and centrality. Pastor and Mayo argue that proximity in each of the networks have different effects because of the information that is transmitted. Since workers are more likely to talk about job related duties than organizational goals, proximity in friendship networks (expressive type of network) should not be related to organizational commitment.

Similarly, information about the leader is more likely to be transmitted in the context of job-related interactions than in the context of friendship interactions. Therefore, network proximity will be a predictor of uniformity on attributions of charisma to the leader, and proximity in the task networks (instrumental type of network) is a stronger predictor of uniformity on attributions of charisma to the leader than that in friendship network. In addition, centrality can also determine the level of influence of a leader on follower. As they reasoned, the central members are more likely to draw other members' attitudes and behaviors toward their own opinions and actions. Also, central individuals will be exposed to a greater number of opinions from other members, and are more likely to develop attitudes that reflect the average of the group. They therefore expected that centrality in the social networks to be associated with members' deviation from the group mean on attributions of charisma. As Pastor and Mayo define 'centrality' as '[t]he average number of steps it takes for an individual to reach all members of the group, they are actually testing the 'closeness' dimension of centrality. Operationalization of network proximity is based on the frequency of interactions with other members of the organization. The Quadratic Assignment Procedure (QAP, Hubert & Schultz, 1976; Krackhardt, 1988) was used to assess the degree of association between data matrices. The findings of the study show that attributions of charisma to the leader can be, to a certain extent, explained by using structural variables of organization, such as network proximity and centrality.

2.3 Export performance Measurement

In recent years, the number of studies attempting to draw a conceptual model of export performance measure has been enlarging along the number of studies trying to identify factors determining export performance (Cavusgil and Zou, 1994). The large body of the literature on export suggests a number of export performance measure: export sales (e.g., Cavusgil 1984; Cooper and Kleinschmidt 1985; Czinkota and Johnston 1983; Madsen 1987; McGuinness and Little 1981), export sales growth (Cooper and Kleinschmidt 1985; Madsen 1989), export profit (Bilkey 1982; Johnson and Arunthanes 1995; Madsen 1989), export intensity (export/sales ratio) (Axinn 1988; McGuinness and Little 1981), increasing importance of export to the total business (U.K. Award, Cavusgil and Kimpalani, 1993), and attainment of export goal (Zou, Taylor and Osland, 1998).

The variety of export measure suggests inconsistency in the measurement of export performance. The inconsistency arises from two primary problems. First, as Cavusgil and Zou (1994) stated, '*there has been no uniformed definition of performance in export marketing studies*'. The lack of consensus in measurement of export performance is a major cause of controversy existing in the studies of export performance determinants (Zou, Taylor and Osland, 1993). Second, most studies in the literature have been conducted in a one-country or a one-region context, e.g. the United States (Ali and Swiercz, 1991;), Canada, the Netherlands (Bijmolt and Zwart, 1994), Europe (de Koning, and Snijders, 1992), Australia (Beamish, Karavis, Gerzen, and Lane, 1999), the United Kingdom (O Farrell, Wood and Zeng, 1998). Export performance was measured differently according to uniqueness of each country. The results, therefore, were incomparable across countries.

The most recent effort to establish a cross-country, uniformed export performance measurement was made by Zou, Taylor and Olsand (1998). Zou, Taylor and Osland developed a three-dimensional scale for measuring export performance exporting firms, called the EXPERF Scale. The scale was empirically tested with 1024 U.S. and 1189 Japanese exporting firms. The EXPERF Scale has factorial similarity and factorial equivalence and was concluded cross-nationally consistent for the U.S. and Japan. The cross-national quality of the EXPERF scale is the key usefulness of the scale that justify the application of the scale in this study.

The EXPERF scale captures three different ways of measuring export performance: financial outcome of exporting, strategic outcome of exporting and firm's satisfaction with the export venture. Financial performance of export has generally been measured by export sales (e.g., Cavusgil 1984; Cooper and Kleinschmidt 1985; Czinkota and Johnston 1983; Madsen 1989; McGuinness and Little 1981), export sales growth (Cooper and Kleinschmidt 1985; Madsen 1989), export profit (Bilkey 1982; Johnson and Arunthanes 1995; Madsen 1989), and export intensity (export/sales ratio) (Axinn 1988; McGuinness and Little 1981).

The strategic aspect of export performance is measured by market share, strategic presence in the export market, or competitive position (e.g., Cavusgil and Kirpalani 1993; Cavusgil and Zou 1994; Johnson and Arunthanes 1995).

Firm's satisfaction is captured either directly by perceived export success and satisfaction with the export venture (Cavusgil and Zou 1994; Christensen, da Rocha, and Gertner 1987), or indirectly by the firm's attitudinal changes toward exporting, such as propensity to export (Denis and Depelteau 1985), attitude toward exporting (Johnston and Czinkota 1982), and attitude toward overcoming barriers to exporting (Bauerschmidt, Sullivan, and Gillespie 1985).

As one can apparently see, these three components of the EXPERF scale reflect both objective and subjective, satisfaction-based measures (Shoham 1998).

The EXPERF Scale by Zou, Taylor and Olsand (1998).

Dimension	Measure	Supporting Scholars
Financial	export sales	Cavusgil 1984; Cooper and Kleinschmidt 1985; Czinkota and Johnston 1983; Madsen 1989; McGuinness and Little 1981
	export sales growth	Cooper and Kleinschmidt 1985; Madsen 1989
	export profits	(Bilkey 1982; Johnson and Arunthanes 1995; Madsen 1989)
	export intensity (export/sales ratio)	(Axinn 1988; McGuinness and Little 1981)
Strategic	market share	Cavusgil and Kirpalani 1993; Cavusgil and Zou 1994; Johnson and Arunthanes 1995).
	strategic presence in the export market	
	competitive position	
Satisfaction (directly measured)	perceived export success and satisfaction with the export venture	Cavusgil and Zou 1994; Christensen, da Rocha, and Gertner 1987
Satisfaction (indirectly measured)	propensity to export	Denis and Depelteau 1985
	attitude toward exporting	Johnston and Czinkota 1982
	and attitude toward overcoming barriers to exporting	Bauerschmidt, Sullivan, and Gillespie 1985

The review of the above literature suggests that export performance can be measured objectively and subjectively. Each has its advantage and disadvantage, depending on the nature and the purpose of the measurement. However, there exist no consistent measurement of export performance.