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LETTER FROM THE EDITOR

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E-MARKET AND ENTREPRENEURSHIP

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ABSTRACT

The increasing growth of the e-market in last several years has attracted much attention from academicians and practitioners. However, most studies have mainly focused on discussing the case of existing companies with a number of years in business. Very little attention has been paid to how newly established businesses can benefit from using the e-market or how they may face its accompanying challenges. The purpose of this research is to shed light on how new businesses predict and perceive about e-market usage. The empirical results of this research help bridge the gap in the existing literature and provide practitioners with valuable insights about the use of e-market for new businesses.

Keywords: e-market, entrepreneurship, potential benefits, likely challenges, new businesses

INTRODUCTION

Research has shown that the e-market, a virtual space where sellers and buyers can communicate, initiate and complete business transactions, can help businesses increase their efficiency and effectiveness and enhance the company's performance (Malone et al., 1987; Bakos, 1998; Brunn et al., 2002). The increasing growth of the e-market in last several years has attracted much attention from academicians and practitioners, but the number of studies on the association of e-markets and entrepreneurship is very limited. Many studies have analyzed numerous benefits and likely challenges of the e-market. However, these studies have mainly focused on discussing the case of existing companies with a number of years in business. Very little attention has been paid to how newly established businesses can benefit from using the e-market and what sort of risks they may face in the process of operating an e-market based transaction.

The fact of matter is that the e-market can enable companies to enhance their performance in different ways depending on several factors such as the company size, the company's e-readiness, the industry sectors, and the years in business. As for the last factor, newly established businesses have some distinctive characteristics over old businesses. Empirical evidences indicated that in order to succeed in using the e-market, companies are required to integrate their internal process to the e-market platform (Brunn et al., 2002; Bloch and Catfolis, 2001). Upon this requirement, older businesses have to cope with difficulties in changing or adjusting their existing and stable business process; many of them still use out-of-date information systems that need substantial upgrade to be compatible with the e-market platform. As for new businesses, their process is more versatile, more adaptable, and the burden will be much less. In addition, being equipped with the up-to-date Internet-based technology their internal systems can be conveniently compatible with the most of current e-market platforms at a lower start-up and routine costs. On the other hand, new businesses are newer to the market and lack of a strong relationship with business partners as well as experiences in online-based transactions (Bates, 2005). For them, the collaboration with business partners provides more opportunities, a critical factor to the success (Bates, 2005). The last issue is what types of e-market are preferable for new businesses. Studies stated that the e-market is not homogenous to every business and different e-market types have different characteristics, advantages and disadvantages (UNCTAD, 2001; Le, 2002). It is important to identify which type of e-market gives new businesses the best benefits and which one may create most troublesome concerns to the ones who are new in the market.

The purpose of this research is to shed the light on the association of e-market and entrepreneurship, with a focus on the expectation and perception of new businesses toward the e-market usage. This research will help answer following research questions: 1) What is the extent of e-market usage by new businesses? 2) What are the differences between old businesses and new businesses in exploiting e-market's benefits and coping with its challenges? 3) What factors that drive new businesses for e-market usage? The empirical results of this research will help bridge the gap in the existing literature and provide practitioners with invaluable insights about the use of e-market for new businesses. The research will be constructed as follows. First, a comprehensive literature on the e-market is conducted to provide the definition, classification, benefits and challenges. Second, research hypotheses will be developed with the emphasis on how new businesses can benefits from using an e-market, what challenges they have to cope with, and the differences between new businesses and old businesses in regard to the use of e-market. Third, these hypotheses will be tested statistically using an empirical data in America. Finally, the results will be discussed with theoretical as well as practical implications.

E-MARKET: DEFINITION AND CLASSIFICATION

E-market Definition

E-market can be defined from different perspectives. Table 1 lists the definitions of e-market into key categories: electronic applications, inter-organizational information systems (IOIS), virtual spaces, and Internet-based e-commerce platforms.

As electronic applications (or digital intermediaries), the e-market functions as an information system or a coordinating mechanism that bring buyers and sellers together, facilitate their transactions (exchange of information, goods, services, and payments), and provides institutional infrastructure (Bichler, 2001; Dai and Kauffman, 2000; Gottschalk and Abrahamsen, 2002; Lindermann and Schmid, 1999; Merz, 1997; Mueller, 2000; Sarkar *et al.*, 1998; Schmid, 1993, 1995). Additionally, the e-market is essentially an inter-organizational information system (IOIS) that facilitates information exchange process, partner searching and transaction execution between market participants (Bakos, 1997; Choudhury, 2000). As a virtual space, the e-market electronically connects multiple buyers and sellers (Malone *et al.*, 1987, 1989; Segev *et al.*, 1999). Finally, the e-market constitutes an Internet-based e-commerce platform that supports both transactions and interactions between suppliers and buyers (Ariba, 2000; Holzmüller and Schlüchter, 2002; Kaplan and Sawhney, 2000; Lipis *et al.*, 2000).

Table 1: Definitions of E-market

Categories	Definition	References
Electronic application	E-markets bring buyers and sellers together to facilitate commercial exchanges (intermediation)	Sarkar et al. (1998)
	E-markets function as digital intermediaries that focus on industry verticals or specific business functions. They set up marketplaces where firms participate in buying and selling activities after they obtain membership	Dai & Kauffman (2000)
	E-markets leverage information technology to perform three main functions: matching buyers to sellers; facilitating the exchange of information, goods, services, and payments; and providing an institutional infrastructure	Bichler (2001)
	E-markets are information systems that link together buyers and sellers to exchange information, products, service, and payments. Through computers and networks these systems function like electronic middlemen, with potentially lowered costs for typical marketplace transactions such as selecting suppliers, establishing prices, ordering goods, and paying bills.	Gottschalk & Abrahamsen (2002)
	E-markets are coordinating mechanisms for the market exchange of goods and services, and represent the total – or a certain quantity – of the exchange relationships between potential market partners having equal rights	Lindermann & Schmid (1999)
	E-markets are defined as information systems that electronically support market transactions	Schmid (1993, 1995)
	E-markets map the abstract co-ordination mechanism of the microeconomic market model onto a distributed computing system to the Internet	Merz (1997)
	E-markets allow buyers and sellers to exchange information about product offerings and prices bid and asked	Mueller (2000)

Table 1: Definitions of E-market

Categories	Definition	References
Inter-organizational information systems (IOIS)	E-markets are inter-organizational information systems that allows the participating buyers and sellers in some market to exchange information about prices and product offerings	Bakos (1991, 1997)
	E-markets are inter-organizational information systems through which multiple buyers and sellers interact to accomplish one or more of the following market-making activities: identifying potential trading partners, selecting a specific partner, and executing the transaction	Choudhury et al. (1998)
	An e-marketplace is a virtual bazaar which refers to a mass-information systems for the business-to-consumer area	Brandtweiner &Scharl (1999)
Virtual spaces	E-markets provide cross-company electronic connections and occupy a virtual space on an electronic networks	Malone et al. (1987, 1989)
	Compared to many other electronic procurement solutions, E-markets represent a relatively neutral position between buyer and seller, providing services to both sides of a transaction. E-markets represent a virtual place where buyers and sellers meet to exchange goods and services	Segev et al. (1999)
	E-markets separate the negotiating function from the physical transfer of the product or commodity in which the market trades. It can manage buyers' and sellers' offers and bids, as well as moving products directly from sellers to buyers. The system is open to all buyers and sellers, regardless of their location and can provide instant market information to all traders.	McCoy & Sarhan (1988)
	E-markets can be viewed as a public listing of products and their attributes from all suppliers in an industry segment, and available to all potential buyers.	Bradley & Peters (1997)
Internet based e-commerce platforms	E-markets are electronic hubs that bring together a large number of buyers and sellers, facilitate the exchange of information and automate their transactions.	Kaplan & Sawhney (2000)
	E-markets are commerce sites on the public Internet that allow large communities of buyers and suppliers to meet and trade with each other. They present ideal structures for commercial exchange, achieving new levels of market efficiency by tightening and automating the relationship between supplier and buyer.	Ariba (2000)
	E-markets are an Internet-based solution that links businesses interested in buying and selling related goods or services from one another. It can be distinguished from a procurement or distribution system insofar as it must be neutral, taking into account the interest of both buyers and sellers in its governance	Lipis et al. (2000)

Table 1: Definitions of E-market		
Categories	Definition	References
	E-markets are Internet based business system that support all activities related to transactions and interactions (planning the transformation of goods) between various companies	Holzmüller & Schlüchter (2002)

E-market Classification

The most common e-marketplace classification framework divides the e-marketplace into three distinct market types: independent trading exchanges (ITXs), private trading exchanges (PTXs), and consortia trading exchanges (CTXs) and is often used in industry reports on e-marketplace (CAPS Research, 2002; UNCTAD, 2001).

ITX is a many-to-many e-market which is implemented by a neutral third party. ITXs support a website to facilitate buyers and sellers to trade online (e.g., FreeMarkets, MRO.com, eWork Exchange) (Daniel et al., 2004; Le, 2005). In ITX type, it is easy to use and implement. The technical requirements are not so high compared to PTX and CTX. On the other hand, the security and trust level is not so high and ITX is unable to provide a high level of collaboration to market participants.

The second type of e-market, CTX, is considered to be a some-to-many e-market which is formed by a consortium (a group of powerful companies) and their channel partners (E.G., covisint.com in the automotive industry). It is usually a vertical marketplace. Compare to ITXs, CTXs are more powerful in security and collaboration. Besides that, CTXs also support opportunities for other companies to share a supply chain. On the other hand, CTXs require a high level of trust and integration (Le, 2005). In fact, there are many boundaries to restrict the successful CTX construction, such as competition, government and business secrets. The technology level is much higher than before, because all the members of consortium need to have standard processes and e-language which will increase the start-up costs.

The last type, PTX, refers to private exchange which can be considered as buy-side or sell-side exchange. There usually a single dominant company in the market requires channel partners to trade online (e.g., Wal-Mart's RetailLink and Cisco). PTXs provide five key services: identity management, content management, integration, process management and analytics. Compared to other e-markets, using a PTX is good for the value and brand image of products. PTXs are also good for the special processing, such as customization. PTXs have more enhanced security and privacy as well as a higher level of integration and collaboration based on closer relationship of channel partners. Because of the high level of collaboration, PTXs play an important role through the supply chain, such as inventory management and product design with reducing inventory costs. Despite its attractiveness, a PTX is not a realistic option for all but the largest firms who have large trading volumes and strong financial as well as technical resources

E-MARKET: POTENTIAL BENEFITS AND LIKELY CHALLENGES

Potential Benefits of the E-market

Research shows several ways to explore the value propositions of the e-market. Focusing on e-business values, Amit and Zott (2001) identified four sets of benefits being created by e-business: efficiency, complementarities, lock-in, and novelty. Efficiency creates value by lowering costs, expanding product selection range, and raising scale economies. Complementarities are present whenever having a bundle of goods together provides more value than the total value of having each of the goods separately. Lock-in refers to the extent to which customers are motivated to engage in repeat transactions and strategic partners have incentives to maintain and improve their associations. Finally, novelty involves innovativeness in the structuring of transaction. Although this framework has been discussed in the context of e-business it can be adapted to explore the expected benefits of the e-market.

In the context of the e-market, Bakos (1991) posited a similar list of factors explaining the strategic potential of the e-market including reduced search cost, network externalities, and economies of scale and scope. However, this and subsequent studies by this author (Bakos, 1997, 1998) focus only on the economic dimension of the e-market, namely benefit creation through great market efficiency, and overlooked the inter-firm business process efficiency.

Addressing this shortcoming, Bloch and Catfolis (2001) categorized potential benefits of the e-market into two dimensions: market intelligence and supply chain integration. The authors argued that the main advantage of the e-market is not lower prices, but the capability to give all participants access to a broader overview of available products and services. Through transaction automation and increased process transparency, e-markets also facilitate supply chain integration. There are two other studies that share similar arguments on e-market's benefits. The first one, by Brunn *et al.* (2002), categorized e-market's benefits into three fundamental elements: increased market efficiency, improved supply chain efficiency, and creation of new values. Increased market efficiency is attributable to greater market transparency that allows prospective buyers and sellers identify each other and to match their needs at much lower costs than before. Improved supply chain efficiency is attained through inter-firm interactions and collaborations, and synchronized business process. New values can also be created by enabling buyers and sellers to access to new information based services. On the second one, Le (2002) argued that the e-market can create benefits along two dimensions: aggregations and collaboration. Aggregation overcomes market fragmentation, affording suppliers with market access, buyer with more choices, and both with price transparency. Collaboration enables market participants to build and deepen their business relationships for the purposes of improving individual business processes and overall supply chain performance.

Given the above studies, we propose that the e-market can potentially benefit participants from two major perspectives: market efficiency and supply chain efficiency (Table 2). Market efficiency enables companies to access a larger database of business partners and product availability, reduce the search cost and transactional costs. Supply chain efficiency enables companies to build a strong business relationship, increase the level of collaboration across the supply chain, and increase the process efficiency.

Table 2: Potential Benefits and Expected Challenges of the E-Market

	Items	Definition	References
Potential Benefits	Market efficiency	Usefulness of the e-market that enables market participants to access broader product availability, price transparency, and lower transaction costs.	Barratt and Rosdahl (2002); Bloch and Catfolis (2001); Brunn et al. (2002); Bakos (1991, 1997, 1998); Chircu and Kauffman (1999); Evan and Wurster (1999); Kauffman and Walden (2001); Le (2002); Mahadevan (2000); Malone et al. (1987); Strader and Shaw (1997, 1999);
	Supply chain efficiency	Usefulness of the e-market that enables market participants to build and deepen their business relationships for the purposes of improving individual business processes and overall supply chain performance	Barratt and Rosdahl (2002); Bloch and Catfolis (2001); Brunn et al. (2002); Le (2002); Narasimhan and Jayaram (1998); Narasimhan and Kim (2001)
Likely Challenges	Financial risks	Costs including initial development investments and recurring operating expenses	Brunn et al. (2002); Davila et al. (2003); Kheng and Al-Hawamdeh (2002); Purao and Capbell (1998); Walczuch et al. (2000)
	Uncertainty challenges	Constraints due to the uncertainties in safeguarding sensitive business information and in dealing with unknown business partners	Abell and Lim (1996); Davila et al. (2003); Zhu (2002); Golsby and Eckert (2003); Kheng and Al-Hawamdeh (2002)

Likely Challenges of the E-Market

Functioning based upon the Internet platform, the e-market also creates some challenges. The likelihood of e-market challenges is a key factor that affects a company's decision to use the e-market (Davila *et al.*, 2003). The number of studies investigating the likely challenge of the e-market is somewhat limited and less consistent compare to the number of studies on its benefits. From the Internet adoption perspective, Purao and Capbell (1998) postulated that primary barriers to Internet adoption include start-up costs, unfamiliarity with the web, lack of guidance about how to start the process, and security hazards. Abell and Lim (1996) studied the Internet users and came to the conclusion that fruitful use is being hampered by concerns over the security (Abell and Lim, 1996). Focusing on small businesses, Walczuch *et al.* (2000) observed that the main barriers to Internet adoption are simply the concern that the Internet would not lead to more efficiency or lower costs and the feeling that the Internet or a website is not suitable for a particular business.

More systematically, Kheng and Al-Hawamdeh (2002) identified four major challenges for the e-procurement, a simpler form of e-market. Most serious one is the concern about the security of the Internet. The second stumbling block is the significant investments in hardware, software, staffing and training required by e-procurement. Another issue is the laws and regulations governing e-commerce. At present, they are just being written. The fourth inhibiting factor is the inefficiency in locating information. In another study about the e-procurement usage, Davila *et al.* (2003) also addressed four perceived risks. *Internal business risks* refer to the requirement to invest in internal information infrastructure. *External business risks* are related to the communication with suppliers. *Technology risks* refer to the lack of a widely accepted standard and a clear understanding of which e-procurement technologies best suit the needs of each company. *E-procurement process risks* refer to the security and control of the e-procurement process itself. In the e-market context, Goldsby and Eckert (2003) and Zoo (2000) addressed information sensitivity and weak capabilities in verifying information about processes and partners as likely challenges of the e-market that participants have to encounter.

Taken together, these studies suggest that companies may perceive two general types of challenges when dealing with the e-market: financial risk and uncertainty challenges (Table 2). Financial risks represent the initial development costs and routine expenses associated with the e-market usage. Uncertainty challenges refer to the constraints created by the uncertainties in safeguarding sensitive business information and in dealing with unknown business partners. The lack of Internet security may lead to the leakage of sensitive business information to competitors. Additionally, working with unknown companies limits the capability of companies to participate in the transactional process and may cause the incompatibility between processes of suppliers and buyers. This could be very risky for buyers since it may lead to misunderstanding or ineffectiveness in their transactions.

E-MARKET AND ENTREPRENEURSHIP – AN IMPORTANT RESEARCH ISSUE

The e-market has evolved and become an important element in the Internet-age economy, and it attracts many attentions from academy and industry. At first, many e-market studies were conducted from the marketing perspective with the emphasis on e-market's ability to reduce transactional costs and increase efficiency. Since then, e-market research has moved toward the management perspective in which the role e-market in supply chain management is examined with more interests. While the number of e-market research in those areas is continuously growing and most likely will be saturated soon, the role of the e-market in entrepreneurship areas has not been adequately examined.

There is an apparent fact that existing studies on e-market focus mainly on companies with many years in business, and very little attention has been paid to the impact of the e-market on newly established businesses. Research has indicated that the impact of the e-market is not homogenous (Rao et al.) and it is important to make distinction of e-market usage in order to exploit its influence on the economy. The purpose of this research is to bridge this gap in the existing e-market literature by examining the difference between new businesses and old businesses in using e-market, expectation of e-market benefits, and perception of its likely challenges. The process of making decision to use the e-market is also analyzed to identify how benefits and challenges influence the e-market usage in each case: new businesses vs. old businesses. This research has significant contributions to the e-market and entrepreneurship studies since its results will shed the light on the expectation and perception of new businesses toward the e-market usage. To answer research questions, four hypotheses are proposed.

Due to distinctive characteristics new businesses may not have the same interest in the e-market as the older ones. The main goal of new businesses is to survive in the market whereas old businesses aim at increasing the business efficiency. New businesses look for more opportunities to succeed rather than just saving costs (Bates, 2005); therefore, their decision in using the e-market will be different. Thus, we can hypothesize that:

Research Hypothesis 1: *There are differences of the extent of e-market usage between new businesses and old businesses*

Due to their distinctive goals, new businesses have different expectation from the e-market. Since they are new and inexperienced, they lack of a strong relationship with business partners. Accordingly, they may expect to use the e-market to increase the collaboration with other companies across the supply chain, thereby increasing their chance of success. On the other hand, old businesses have already built their business relationship and their expectation may more toward saving transactional costs through using the e-market. This discussion leads us to the following hypothesis.

Research Hypothesis 2: *There is a distinction in the expectation of e-market's potential benefits between new businesses and old businesses*

New businesses and old businesses have different strengths and weaknesses; therefore, their perception of e-market's challenges is also dissimilar. For instance, the e-market requires participants to integrate their internal process to the e-market platform (Brunn et al., 2002; Bloch and Catfolis, 2001). Older businesses usually find this requirement troublesome since many of them still use out-of-date information systems that need substantial upgrade to be compatible with the e-market platform. As for new businesses, their process is more versatile, more adaptable, and the burden will be much less. In addition, being equipped with the up-to-date Internet-based technology their internal systems can be conveniently compatible with the most of current e-market platforms at a lower start-up and routine costs. Thus, financial risks may not be their main concern. On the other side, the uncertainty in dealing with unknown business partners will make them more worried since this challenge may reduce their opportunity of success. They are new in the market and need to develop a strong business relationship. These discussions lead to the third hypothesis as follows

Research Hypothesis 3: *There is a distinction in the perception of e-market's likely challenges between new businesses and old businesses*

In the decision making process with uncertainty in the e-commerce context, benefits and challenges have been proved to influence the extent of e-market usage (Rao et al., 2007). Nevertheless, this impact is not the same between new businesses and old businesses. Due to the distinction in expectation and perception of e-market's benefits and challenges, their decision to use the e-market is determined by above factors at different levels. In other words, the major drivers for e-market usage are not the same. Thus, we have the fourth hypothesis as follows

Research Hypothesis 4: *The impact of e-market's benefits and challenges on the e-market usage is different between new businesses and old businesses*

As mentioned before, the e-market is not homogenous and can be classified into three major types: ITX, CTX, and PTX. These e-market types have distinctive advantages and disadvantages and their attractiveness may be different to different companies. Given that fact, we will test the above hypotheses with an extensive comparison among three types of e-market in order to provide more contributive results.

RESEARCH METHODOLOGIES

Data Collection: Web-Based Survey

In order to answer the research questions, a large-scale survey was conducted. A large-scale survey collects a large empirical data from a number of companies with various demographic characteristics (size, business type, revenue, and years in business) over many industries. The large-scale empirical data will help generalize and strengthen the research results. It and also helps analyze the whole picture of e-market usage from different companies' perspective. Item-classification for e-market benefits and challenges were generated through the literature on the Internet adoption, e-procurement, and e-market. These proposed measurement scales were then used in the large-scale survey instrument. The data for this study was collected through a Web-based survey in the United States. The survey was sent to respondents in eight industries that represent different levels of penetration for B2B e-business in general, and e-markets in particular (Forrester Research, 2000; Goldman Sachs, 2000). The sectors were electronic and other electrical products, and communication industries at the higher end, and food and kinked products, and printing and publishing industries at the lower end. A mailing list was provided by The Institute for Supply Management, and the survey received 359 responses.

Profile of Respondents

Survey respondents include vice presidents for materials (6 per cent), directors of procurement (13 per cent), purchasing managers (74 per cent) and "others" (7 per cent). It is apparent from their job titles that they are qualified to answer the survey questions. Their organizations range widely in size, as measured by their annual sales, number of employees or purchasing budget. However, respondents from larger organizations are proportionally better represented: 37 per cent from organizations with $1 billion or more in annual sales versus 6 per cent with less than $10 million, 20 per cent from those with more than ten thousand employees compared to 11 per cent with fewer than 100, and 43 per cent from organizations with over $100 million in purchasing budget versus 5 per cent below $1 million (Table 3).

Table 3: Profile of respondents

1. Job Title	Percentage	2. Annual Sales	Percentage
Vice president of materials	6%	Under $10 million	6%
Director of procurement	13%	$10 million to $ 100 million	26%
Purchasing manager	74%	$100 million to < $1 billion	31%
Others	7%	Over $1 billion	37%

Table 3: Profile of respondents			
3. Number of Employees	Percentage	4. Purchasing Budget	Percentage
Up to 100	11%	Under $1 million	5%
101 to 250	12%	$1 million to < $10 million	12%
251 to 1,000	29%	$10 million to <$25 million	17%
1,001 to 10,000	28%	$25 million to <$100 million	23%
Over 10,000	20%	Over $100 million	43%

Exploratory Factor Analysis

Exploratory Factor Analysis (EFA) was conducted using SPSS 16.0. Table 4 shows the factor loadings (with the cutoff score of 0.50) together with reliability results, mean and standard deviation of measurement items. Principle component analysis was used as the extraction method and Varimax was used as the rotation method. Total variance explained for this analysis is 62.77%. EFA results indicated four different factors with most of loading higher than 0.60. It is clear that the first factor is marked by high loadings on market efficiency, the second factor is marked by high loadings on supply chain efficiency, the third factor is marked by high loadings on financial risks, and the fourth factor is marked by high loadings on uncertainty challenges. We would thus conclude that potential benefits, as measured by our questionnaire, are composed of two aspects: market efficiency and supply chain efficiency; and likely challenges are composed of two aspects: financial risks and uncertainty challenges. Cronbach's alpha coefficients for these factors, the lowest being 0.896, indicate high reliability.

Table 4: Exploratory factor analysis results							
Items	Factor 1	Factor 2	Factor 3	Factor 4	Cronbach's Alpha	Mean	Standard Deviation
MI1	0.638				0.903	3.095	0.963
MI2	0.723					3.376	0.971
MI3	0.736					3.272	0.971
MI4	0.584					3.274	0.979
MI5	0.832					3.538	0.976
MI6	0.812					3.573	0.98
MI7	0.574					3.107	1.006
MI8	0.724					3.197	1.018
SI1		0.687			0.919	2.963	0.986

Table 4: Exploratory factor analysis results							
Items	Factor 1	Factor 2	Factor 3	Factor 4	Cronbach's Alpha	Mean	Standard Deviation
SI2		0.734				2.7	0.939
SI3		0.787				2.914	0.908
SI4		0.682				3.08	0.918
SI5		0.788				2.913	0.912
SI6		0.808				2.633	1.014
SI7		0.73				2.987	1.019
SI8		0.771				2.735	0.993
FR1			0.885		0.902	3.377	1.009
FR2			0.87			3.365	0.952
FR3			0.876			3.471	0.965
UC1				0.559	0.896	3.574	1.0167
UC2				0.785		3.436	1.0347
UC3				0.856		3.483	1.095
UC4				0.607		3.476	0.919
UC5				0.824		3.259	1.03
UC6				0.866		3.591	1.012
UC7				0.864		3.421	1.022
Extraction Method: Principal Component Analysis. Rotation Method: Varimax Total variance explained: 62.77%							

RESEARCH FINDINGS AND DISCUSSIONS

Distinction of the E-Market Usage

The e-market usage was compared between new and old businesses using t-tests, and was conducted for each of three e-market type: ITX, CTX, and PTX. The test used the three year cut-off between new and old businesses. The results of t-test, significance level, and the mean difference are listed in Table 5. These results showed a significant difference (at the 0.1 level) between new and old businesses in using ITXs; more specifically, old businesses use the e-market at a greater extent than new businesses. As for CTX and PTX usage, although the t-test showed no significant difference between new and old businesses, a note should be made to a slight distinction: new businesses use CTXs at a little great extent whereas PTXs are used a little more by old businesses. Thus, it can be seen that new businesses prefer CTXs to others due to their focus on vertical market segments, while it still remains many-to-many relationship. On the other hand, a group of old businesses use more ITXs, an independent e-market, with high level of ease-to-use and low start-up cost. Another group of old businesses prefer PTXs, a private e-market, to dominate the market. The rationales for these differences can be provided with the results of following hypotheses regarding the impact of benefits and challenges.

Table 5: Distinction of E-Market Usage (New Businesses vs. Old Businesses)

Items	t	Sig. level	Mean difference
ITX Usage	-1.607	0.1*	-0.256
CTX Usage	0.158	0.87	0.02
PTX Usage	-0.339	0.73	-0.071
* Significant at 0.1 level			

Distinction of Potential Benefits of the E-Market

The distinction of potential benefits of the e-market was also tested using t-test. The t-test results, significance level, and mean difference are listed in Table 6 for each of three types of e-market: ITX, CTX, and PTX. The results indicated that for all types of e-market, there is a significant difference between new and old businesses in regard to market efficiency; and compared to old businesses new businesses expect less market efficiency from e-market. Thus, regardless of e-market type market efficiency seems to be less potential to new businesses than to old businesses. In other words, when deciding to use the e-market old businesses, who have stayed for a while in the business and have established strong relationship with business partners, expect to increase the market efficiency more than new businesses.

The same situation can be observed for supply chain efficiency. Although the difference is not significant we can note a slight distinction between new and old businesses. More specifically, new businesses expect and less supply chain efficiency from CTXs and PTXs (the expectation for supply chain efficiency in case of ITX is almost the same). There is one explanation for this behavior: new businesses are somehow in doubt of e-market's potential benefits. Being new to the market, they do not see the e-market as a highly potential means of efficiency. On the other hand, older businesses use the e-market with higher hope of exploiting e-market's benefits both in increasing the market efficiency and supply chain efficiency. These results help us explain the fact that new businesses use the e-market at a smaller extent than old businesses.

Table 6: Distinction of Potential Benefits of the E-Market (New Businesses vs. Old Businesses)				
	Items	t	Sig. level	Mean difference
ITX	Market Efficiency	-2.181	0.03**	-0.308
	Supply Chain Efficiency	0.286	0.77	0.054
CTX	Market Efficiency	-1.609	0.1*	-0.209
	Supply Chain Efficiency	-0.598	0.55	-0.097
PTX	Market Efficiency	-1.556	0.1*	-0.197
	Supply Chain Efficiency	-1.042	0.3	-0.174
** Significant at 0.05 level * Significant at 0.1 level				

Distinction of Likely Challenges of the E-Market

Table 7 shows the t-test results, significance level, and mean difference between new and old businesses in regard to likely challenges for each of three types of e-market: ITX, CTX, and PTX. As the results indicated, for all types of e-market there is a significant difference between new and old businesses in regard to financial risks; new businesses perceive less financial risks from e-market compared to old businesses. As for uncertainty challenges the difference is also consistent for all types of e-market (although the difference is not significant in case of PTXs) where new businesses perceive more uncertainty challenges than old businesses.

Thus, financial risks such as high start-up cost and routine expenses are less likely to challenge new businesses than old ones. In other words, compared to old businesses new businesses are worried more about dealing with unknown business partners when using the e-market. It can be seen that increasing the certainty in the business relationship is a crucial factor to the success of new businesses. This argument makes sense since they are new in the market with sufficient capital but what they lack is a strong association with business partners. More insights about the impact of benefits and challenges on the usage level of each e-market type will be discussed in the next section.

Impact of Benefits and Challenges on E-Market Usage

The impact of potential benefits and uncertainty challenges on e-market usage was tested using the regression analysis. Table 8 shows the regression results for new businesses and Table 9 shows the regression results for old businesses. For all regression models, potential benefits (market efficiency and supply chain efficiency) have a positive impact on the e-market usage whereas likely challenges (financial risks and uncertainty challenges) have a negative impact on the e-market usage. The detailed results are analyzed per each type of e-market.

Table 7: Distinction of Likely Challenges of the E-Market (New Businesses vs. Old Businesses)				
	Items	t	Sig. level	Mean difference
ITX	Financial Risks	-2.105	0.03**	-0.451
	Uncertainty Challenges	1.587	0.1*	0.27
CTX	Financial Risks	-1.734	0.08*	-0.374
	Uncertainty Challenges	1.592	0.1*	0.26
PTX	Financial Risks	-1.548	0.1*	-0.294
	Uncertainty Challenges	0.893	0.37	0.161

** Significant at 0.05 level
* Significant at 0.1 level

As for ITXs, the e-market usage by new businesses is determined mainly by market efficiency (significant impact). Other factors also have influences but at a smaller extent. For the same type of e-market, market efficiency and financial risks are main factors that determine the e-market usage of old businesses. Thus, it can be concluded that new businesses realize the importance of ITXs in creating the market efficiency. These results fit to the argument that the main advantage of ITXs compared to other types is market efficiency. In the other case, financial risks become the major determinant for old businesses' ITX usage. Although it is cheaper to start with ITXs the routine expenses and the inefficiency of this e-market may inhibit old businesses from using it.

The results are different for CTX usage. For new businesses, supply chain efficiency is the main driver for CTX usage (significant impact) with the highest impact level. Thus, new businesses perceive CTXs' main benefit being supply chain efficiency which fits to the current literature. Being a vertical e-market with the formation of leading companies, CTXs enable companies to strengthen the collaboration across the supply chain and the business process efficiency. As discussed before, this benefit is an important factor to the success of new businesses. In other case, the extent of CTX usage by old businesses is mainly driven by the financial risks. Financial risks seem to be a critical factor to businesses with many years in the market and CTXs usually require a higher start-up cost and the upgrade of the Internet platform.

Finally, as for PTX usage financial risks and uncertainty challenges are main factors that determine the PTX usage by new businesses whereas old businesses' decision relies mainly on the supply chain efficiency and financial risks. PTXs, a private e-market, require very high start-up cost and a strong relationship with business partners since it uses one-to-many relationship. For new businesses, when uncertainty level is high they will less likely to use PTXs since the usage may have a negative impact on their success. On the other hand, old businesses will decide to use PTXs more if they see the hope to increasing the efficiency across the supply chain. Additionally, financial risks are important factor for both new and old businesses due to their impact on the profitability.

Table 8: Regression Results for New Businesses

Independent Variables	Dependent Variables		
	ITX Usage	CTX Usage	PTX Usage
Market Efficiency	0.319**	0.118	0.12
Supply Chain Efficiency	0.075	0.329**	0.164
Financial Risks	-0.154	-0.142	-0.376**
Uncertainty Challenges	-0.194	-0.06	-0.362**
	F = 5.78**	F = 6.2**	F = 13.76**
	R^2 = 0.102	R^2 = 0.108	R^2 = 0.334

** Significant at 0.05 level

Table 9: Regression Results for Old Businesses

Independent Variables	Dependent Variables		
	ITX Usage	CTX Usage	PTX Usage
Market Efficiency	0.240*	0.056	0.001
Supply Chain Efficiency	0.141	0.063	0.199*
Financial Risks	-0.424**	-0.330**	-0.441**
Uncertainty Challenges	-0.13	-0.03	-0.08
	F = 10.76**	F = 6.49**	F = 10.84**
	R^2 = 0.189	R^2 = 0.11	R^2 = 0.178

** Significant at 0.05 level
* Significant at 0.1 level

RESEARCH IMPLICATIONS

Theoretical Implications

This study addresses some key issues in the e-market usage by new businesses vs. old businesses. More specifically, the extent of e-market usage was compared between new and old businesses; similar comparison was conducted for potential benefits and likely challenges; and finally, the impact of benefits and challenges on the e-market usage. This research fills the gap in the current literature of e-market and entrepreneurship. The results indicated a slight difference of e-market usage between new and old businesses in which old businesses have a tendency to use ITXs and PTXs more than new businesses.

The distinction can be explained by the behavior of new businesses toward the e-market. The empirical evidence of this research also confirmed the difference between new and old businesses in expectation of e-market's potential benefits and perception of e-market's likely challenges. Unlike old businesses, new businesses have more hope in supply chain efficiency when using the e-market, but they expect less market efficiency. Thus, the collaboration across the supply chain seems to be a critical factor to businesses that are new in the market. This research also showed empirical evidence on the distinction in regard to the likely challenges of the e-market. While old businesses perceive the challenges being financial risks, new businesses seem to worry more about the uncertainty in dealing with unknown business partners when using the e-market. Being new in the market, the relationship with business partners is critical to their success.

Finally, the regression analysis indicated main drivers for new businesses' e-market usage. Understanding the distinctive advantages and disadvantages of e-market types, new businesses decide to use more ITXs when they expected a greater extent of market efficiency. Similarly, supply chain efficiency becomes the major driver for their CTX usage. In the last case, they will use more PTXs when they perceive less financial risks and uncertainty challenges.

Practical Implications

This study also has some practical implications. By providing insights into new businesses' perceptions, our findings can help managers focus their promotional efforts aimed at potential firms that would like to use e-markets for procurement by emphasizing specific benefits or addressing specific risk perceptions. This implication is very important given the fact of low percentage of companies currently using the e-market. More specifically, our findings indicated that new businesses are attracted to an e-market mainly due to its supply chain collaboration capability. On the other hand, when it comes to the barriers, uncertainty seems to be a bigger challenge for new businesses compared to financial risks. Accordingly, managers should put more emphasis on enhancing the supply chain collaboration capability and have to address the trust related issues to gain more participants. Additionally, the analysis of each of three e-market types (ITX, CTX, and PTX) provides managers useful information about the type of e-market they manage and how to make necessary changes. Apparently, ITX managers should focus on its market efficiency capability, while CTX managers need to emphasize its ability in supply chain collaboration. Finally, PTX managers need to make necessary changes to reduce the financial risks and uncertainty of PTXs.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

Several limitations of this research should be mentioned, which call for future research. First, the number of new businesses participating in this survey is limited, which creates an imbalance of the sample. In addition, this research is limited to the e-market usage in general; it did not account for the purposes of e-market usage by new businesses. Furthermore, e-markets are still in an early phase of development with a relatively low number of firms currently using e-markets for business transactions. Their e-market expectation of benefits and perception of risks are yet to be firmly set. The findings from this study should therefore be taken with a note of caution that they provide only a snapshot picture of e-market usage that is unlikely to remain constant as the e-market phenomenon continues to evolve.

Future research should collect more observations of new businesses; this will allow researchers to break the comparison to more extent such as: very new and relatively new to the market. In this case, the results will provide a deeper and richer understanding of the e-market usage from the new business perspective. In addition, more studies need to be conducted to examine why and what new businesses use the e-market for. Given this information, the comparison to old businesses will provide more implications to both academy and industry.

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APPENDIX
MEASUREMENT ITEMS

MI1: The e-market is useful for finding new suppliers
MI2: The e-market is useful for reaching a larger number of suppliers
MI3: The e-market is useful for increasing price transparency
MI4: The e-market is useful for seeking information about product availability
MI5: The e-market is useful for performing price comparisons
MI6: The e-market is useful for seeking lower materials/products cost
MI7: The e-market is useful for seeking lower transactional commission and related fees
MI8: The e-market is useful for eliminating intermediaries
SI1: The e-market is useful for increasing supply chain-wide inventory visibility
SI2: The e-market is useful for shortening concept-to-commercialization cycle time
SI3: The e-market is useful for shortening order-to-delivery lead time
SI4: The e-market is useful for streamlining purchasing processes
SI5: The e-market is useful for improving logistics management
SI6: The e-market is useful for collaborating with suppliers on product design and development
SI7: The e-market is useful for collaborating with suppliers on the process of procurement
SI8: The e-market is useful for sharing operational information with suppliers
FR1: High cost of e-market platform development inhibits our organization from procuring materials/products through e-market
FR2: High business process coordination cost inhibits our organization from procuring materials/products through e-market
FR3: High cost for IS integration inhibits our organization from procuring materials/products through e-market
UC1: Potential leakage of sensitive business information to competitors inhibits our organization from procuring materials/products through e-market
UC2: Uncertainties related to the settlement of disputes inhibit our organization from procuring materials/products through e-market
UC3: Limited participation by suppliers inhibits our organization from procuring materials/products through e-market
UC4: Uncertainties related to the identity of the suppliers inhibit our organization from procuring materials/products through e-market
UC5: Incompatible inter-firm business processes inhibit our organization from procuring materials/products through e-market
UC6: Uncertainties related to verification of the terms and conditions of the contract inhibit our organization from procuring materials/products through e-market
UC7: Uncertainties related to supplier's fulfillment capability inhibit our organization from procuring materials/products through e-market

TWO DECADES OF INTERNATIONAL ENTREPRENEURSHIP RESEARCH: WHAT HAVE WE LEARNED- WHERE DO WE GO FROM HERE?

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ABSTRACT

This paper is a review and critique of the promising area of international entrepreneurship based on twenty years of academic research covering 150 empirical and conceptual studies. The studies are examined on the basis of six specific dimensions: key issues, theoretical perspectives, sample, research method, data analysis and dependent variable. Suggestions and directions for future research are discussed.

Key Words: International, Entrepreneurship, Literature Review, New Ventures, Internationalization

INTRODUCTION

At the convergence of entrepreneurship research and literature on international management, scholarly investigations of international entrepreneurial firms hold the promise of enriching and broadening both fields by bridging a gap that has long been overlooked. A renewed interest in entrepreneurial thinking and activity by government policy makers and industry leaders worldwide has added legitimacy to the field of international entrepreneurship (Fernandez & Nieto, 2006., Fletcher, 2004., Thomas & Mueller, 2000).

Additional evidence of the importance of global markets to small and new firms comes from scholars and business experts who have enthusiastically recommended that all businesses, small and large, compete in international markets (Reich, 1991). Furthermore, government agencies have added to the chorus of calls for increased international competition by small firms:

> *"Almost every panel identified globalization as a major force that will modify and mold the environment for small business and entrepreneurship over the next decade and beyond".* (U.S. Small Business Administration, p.5, 1995).

Although a growing body of literature has attempted to explain the inception, characteristics and performance of new ventures operating across national borders, research in this area has either been less than rigorous (Baker, Gedajlovic & Lubatkin, 2005; McDougall & Oviatt, 1997) when compared with the development of entrepreneurship research in general (Aldrich, 1992; Aldrich & Baker, 1997; Carsrud, Olm & Eddy, 1986; Paulin, Coffey & Spaulding, 1982; Wortman, 1986) or “lacking” in a unifying direction (McDougall & Oviatt, 2000 in Jones & Coviello, 2005: p. 285). Indeed, as is the case for most exploratory research, the disparate contributions made by various authors have yet to be integrated into a broad picture of international new ventures. As a field of study develops, it is useful to pause and assess the current state of the field and identify new directions and challenges for future work. This is a useful and necessary step designed to derive the maximum benefit from future research (Low & MacMillan, 1988) and is especially important in the early stage of a field's development to focus research in such a way that knowledge in the field can move forward.

This article summarizes and assesses the status of academic research in international entrepreneurship for the past twenty years. It is also meant to build on the work done by McDougall and Oviatt (1997) and broaden the review of international entrepreneurship offered by them by examining a significantly longer time frame thus developing a fuller understanding of how this area of inquiry developed and how it has progressed. To maintain continuity and to aid comparability, this paper summarizes the same five key dimensions addressed in McDougall and Oviatt’s (1997) review of international entrepreneurship literature (key issues, sample, research method, data analysis, dependent variable) and adds two more, *theoretical perspectives* and *organizing themes*. However, keeping in mind the need to add value to this study while being aware of space limitations, past research on the following three dimensions will be considered in greater detail. These three dimensions are: **Theoretical Perspectives**-what theory or theories are adopted? **Organizing Themes**-what is the key delineator of entrepreneurial firms? **Methodological Approaches**-how is causality determined and how are associations tested? We believe that these dimensions hold the opportunity for significantly advancing knowledge in international entrepreneurship.

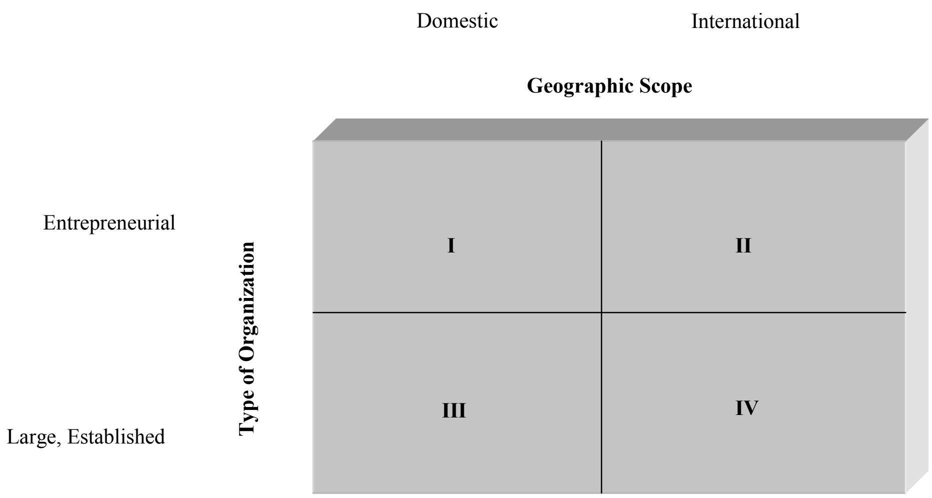
THE DOMAIN AND DEFINITION OF INTERNATIONAL ENTREPRENEURSHIP

As a field of study, international entrepreneurship can be viewed as a subset of entrepreneurship literature rather than a subset of international business literature (Figure 1).

Firms in quadrants I, III and IV (Fig.1) have been studied by a myriad of researchers using numerous theoretical perspectives and methodological techniques. However, firms in quadrant II have not been studied nearly as closely and it is only recently that an organized attempt has been made to study, describe and investigate these firms with what Kuhn (1970) describes as the use of “normal science”. Additional work is needed that builds upon this foundation. This will allow researchers to better judge the analyses and results within the field (Cannella & Paetzold, 1994).

However, it is not to say that a broad range of theories should not be used. Rather, the explanatory power of different theories needs to be tested to more clearly understand the field of international entrepreneurship given its early phase of development (Feyerabend, 1980). To better conceptualize the field, a number of definitions for international entrepreneurship have been developed.

Figure 1: The Domain of Academic Literature on Organizations



Source: Adapted from McDougall and Oviatt, 1997; McDougall, Oviatt and Brush (1991)

McDougall (1989) offered a definition that excluded all established firms and included those firms that were international from inception. A second study (McDougall & Oviatt, 1997) broadened the definition to include businesses organized across national borders, involved in new and innovative activities and having the goals of growth and value creation. Clearly, the "international" portion of this definition is straightforward. A firm must operate across national borders and be focused on its relationship with the international environment. Further, international business includes the comparison of domestic businesses in more than one country (McDougall & Oviatt, 1997; Wright & Ricks, 1994).

There is much less agreement as to the definition or domain of entrepreneurship (Gartner, 1988; McDougall & Oviatt, 1997; Venkataraman, 1997). According to Venkataraman (1997), the field of entrepreneurship "seeks to understand how opportunities to bring into existence 'future' goods and services are discovered, created, and exploited, by whom, and with what consequences" (p. 120). Combining this explanation with the requirement of international orientation, international entrepreneurship may be defined as the process by which international markets are used in the discovery, creation and/or exploitation of future goods or services.

LITERATURE REVIEW - METHODOLOGY

Lists of leading entrepreneurship (MacMillan, 1993) and international business (Chandy & Williams, 1994) journals were combined to create a master list for review. The more mainstream field of international business seemed to be slow to publish entrepreneurship research while entrepreneurship journals include several articles describing and investigating these firms (see Table 1). *The Journal of International Marketing* which was not included in either of the two target publication lists was added to the list as it began publication in 1993. Articles from Babson College's *Frontiers of Entrepreneurship Research* (edited collection of articles) were also included because much of the current research in entrepreneurship is presented here. However, when articles were later published in a journal that is reviewed here, only the journal article was included as it represents the most current version of the article (McDougall & Oviatt, 1997). The journals considered for this article and the number of studies from each journal is presented in Table 1.

Table 1: List of Journals with International Entrepreneurship Content

Journals Used in 1982-2002 Literature Search	Number of Articles Found in Each Journal	Percentage of Articles From Each Journal
Academy of Management Journal	8	5.55
Academy of Management Review	0	0
Administrative Science Quarterly	0	0
American Economic Review	0	0
American Journal of Sociology	0	0
American Sociological Review	0	0
California Management Review	0	0
Columbia Journal of World Business	0	0
Entrepreneurship and Regional Development	1	.49
Entrepreneurship Theory and Practice	19	13.19
Frontiers of Entrepreneurship Research	29	20.14
Harvard Business Review	2	1.38
IEEE Transactions	0	0
International Marketing Review	2	1.38
International Small Business Journal	4	2.77

Table 1: List of Journals with International Entrepreneurship Content

Journals Used in 1982-2002 Literature Search	Number of Articles Found in Each Journal	Percentage of Articles From Each Journal
Journal of Applied Psychology	0	0
Journal of Business Venturing	34	22.70
Journal of Finance	0	0
Journal of High Technology Management Research	0	0
Journal of International Business Studies	9	5.66
Journal of International Marketing	1	0.69
Journal of Management	0	0
Journal of Management Studies	0	0
Journal of Marketing	0	0
Journal of Marketing Research	0	0
Journal of Small Business Management	23	15.75
Journal of Technology Transfer	0	0
Management International Review	7	4.86
Management Science	0	0
Organization Dynamics	0	0
Organization Science	0	0
Organization Studies	0	0
Sloan Management Review	0	0
Small Business Economics	10	5.70
Strategic Management Journal	3	2.08

The next section (section I) provides a description and analysis of the theoretical perspectives used in international entrepreneurship research. Section II presents a discussion of organizing themes. Section III examines methodological approaches taken by researchers and section IV offers a summary and suggestions for future research.

SECTION I: THEORETICAL PERSPECTIVES

As is the case with other exploratory areas of research, the link between international entrepreneurship literature and existing theories is tenuous. Indeed, the investigation of international entrepreneurship developed initially as a scholarly response to the emergence of a phenomenon that did not fit into traditional conceptual frameworks. International business theories, in particular, have been unable to explain the creation of international new ventures or even the cross-border business involvement of small firms.

International Business Theories

International business as a field of inquiry developed largely in response to the rise of the multinational corporation as a main actor in the post-World War II business era. It is therefore to be expected that theories spawned by this stream of research reflect their contextual origins. The growth of large, more often American companies and their subsequent forays and eventual deep entrenchment into world markets inspired theories that emphasize the sequential nature of internationalization (Aharoni, 1966; Bilkey & Tesar, 1977; Buckley & Casson, 1976; Johanson & Vahlne, 1977, 1990) and the cost benefits derived from a home-grown advantage in international markets (Hymer, 1976) or from the internalization of operations (Hennart, 1982; Magee, 1977). McDougall et al. (1994) argued that rational and deterministic theories prescribing a step-by-step approach to internationalization were woefully inadequate in explaining the emergence of international new ventures. Based on McDougall et al. (1994) a brief summary of each international business theory and its limitations follow.

Monopolistic advantage theory

The basic tenet of monopolistic advantage theory is that having unique sources of superiority that cannot be acquired by foreign firms allows multinational enterprises to compete in these foreign markets (Hymer, 1976). McDougall et al. (1994) argue that this explanation is too simplistic. They point out that monopolistic theory cannot explain why entrepreneurs perceive opportunities to use their monopolistic advantage in foreign markets while others do not.

Product cycle theory

Product cycle theory holds that firms make foreign direct investments only after competition becomes cost-based and the firm can no longer serve the market efficiently through exports. By producing in foreign countries firms are able to compete with entrepreneurs who enjoy low production costs (Vernon, 1966). McDougall et al. (1994) suggest two shortcomings of this theory. First, new firms may make foreign investments to sell products before competition has become standardized and cost-based. Second, entrepreneurs sometimes make foreign investments prior to exporting to the market.

Stages theory of internationalization

The stages theory of internationalization is based on the premise that progress in identifiable stages from exporting to multinational enterprise as they gain international experience (Johanson & Vahlne, 1977). However, a number of researchers have found contradictory evidence suggesting that firms may skip important stages (Welch & Loustarinen, 1988), may serve foreign markets from inception (Ganitsky, 1989), and may internationalize far sooner than the stages theory would suggest (Brush, 1992).

Oligopolistic reaction theory

Oligopolistic reaction theory is based on the premise that firms imitate the actions of competitors to reduce the risk of being different from other members of an oligopoly (Knickerbocker (1973). However, Oligopolistic reaction theory is not quite applicable to international new ventures first because the new venture is quite often the first firm to internationalize in a given industry, and second the theory fails to explain the initial foreign investment decision (McDougall, et al., 1994).

Internalization theory

The concept that multinational firms exist due to their ability to generate higher economic rents by internalizing the transfer of goods and services across national boundaries, thus reducing costs, is the basis of internalization theory (Buckley & Casson, 1976; Hennart, 1982; Magee, 1977). Some international new ventures internationalize for other reasons than reducing costs such as being close to the customer, being aware of technology trends, or to ensure survival (McDougall, et al., 1994). Although useful for large, multinational corporations each of these international business theories omit a crucial element that is central to international entrepreneurship, namely entrepreneurial insight. Another promising line of international research that has generated a growing interest among entrepreneurship scholars is focused on cultural differences and their effect on entrepreneurship.

National culture

Research on the management effects of national culture can be traced back to the pioneering work of Hofstede (1980). The application of this work to entrepreneurship has helped in explaining entrepreneurial phenomena such as the national rates of innovation and invention (Shane, 1992, 1993) entrepreneurs' beliefs about themselves (McGrath & MacMillan, 1992; McGrath, MacMillan & Scheinberg, 1992), and the impact of cultural values on entrepreneurial behavior (Takyi-Asiedu, 1993).

Entrepreneurship Literature

In their efforts to explain the rise of international new ventures, McDougall et al. (1994) call for a reorientation of research focus away from the firm and towards entrepreneurs and their networks. For instance, Kamm, Shuman, Seeger and Nurick (1990) have specifically addressed the role of entrepreneurial teams in new venture creation and Fischer and Reuber (1996) studied the effect of international experience within the TMT on the degree of internationalization in small and medium sized firms. Lu & Beamish (2001) found evidence to support alliances with local partners significantly enhances chances of SME performance in international markets. These authors explicitly extended the focus of inquiry beyond the founders to of entrepreneurial firms to include other members of top management. While this perspective has its merits, it merely compliments more narrowly defined studies, including those that focus on psychological traits of individual entrepreneurs (Begley & Boyd, 1986; Brockhaus & Horowitz, 1986). Although the latter suffer from severe methodological limitations that make interpretation difficult (Low & MacMillan, 1988), the exploratory nature of the international entrepreneurship literature mandates an inclusionary and broad conceptual perspective.

At the micro level, individual and group based theories contribute to provide a theoretical basis to the numerous reports, descriptions and case studies that vividly portray the creation of globally oriented ventures. At the firm level of analysis, research on international entrepreneurship has borrowed from other theoretical sources. The choice of entry mode literature which suggests that selection of the mode of entry and operation in foreign markets by firm are a matter of strategy that significantly impacts firm performance. Burgel and Murray (2000) used a sample of technology based start-up firms to study the antecedents of their modal choice in foreign markets. Similarly Erramilli & D'Souza (1993) examined the foreign market entry strategy of small firms based in the service sector. International expansion by firms as reflected in the "scope" of their operations and measured by the diversity pursued the international firm in the areas of product, market, culture and technology has been the focus of studies by Preece et.al (1999) and Zahra et.al.(2000).

Strategic Choice Theory and the Resource-Based Perspective

Strategic choice theorists argue that organizational executives have the ability to take purposeful action in adapting their firms to the external environment (Andrews, 1971; Child, 1972). A major assumption in this literature is that top management has a critical role in determining both the actions and outcomes of their organizations (Chandler, 1962, Child, 1972; Hambrick & Mason, 1984). The strategic choice perspective is primarily concerned with the determinants of business venture success. In the context of international entrepreneurship, the focus is on the relationship between firm characteristics and resources (including managerial resources) and strategy (internationalization) on the one hand, and strategy and performance on the other.

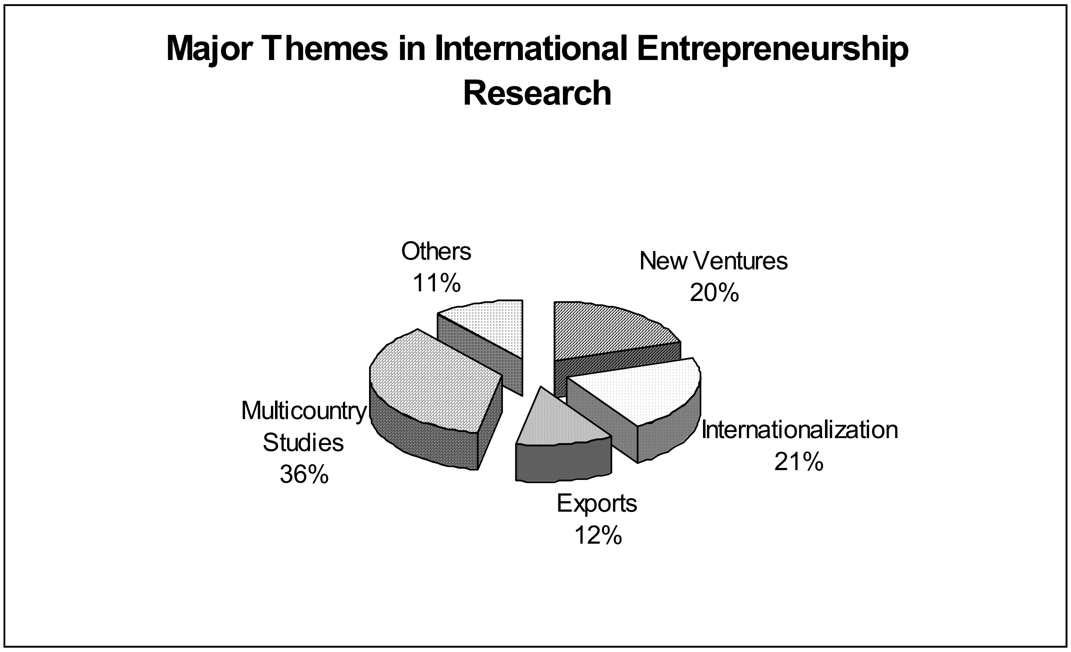
As Low and MacMillan (1988) note, this theoretical orientation is often implicit in entrepreneurial research. Indeed, a considerable number of firm level analysts limit themselves to the exploration of the relationship between firm characteristics and internationalization (Ali & Swiercz, 1991; Bilkey & Tesar, 1977; Bonaccorsi, 1992; Calof, 1993; Cavusgil, 1984). The contribution of this literature lies in its invalidation of the traditional view of small firms being unable or unwilling to export. Although constrained in its perspective and tenuous in its theoretical links, the export marketing literature has played an important role in ushering in more ambitious and theoretically solid investigations.

In disproving the notion that firm resources are solely reflected in size which in turn determines the ability to internationalize, Bonaccorsi (1992) has prompted research into specific firm level resources that constitute the source of competitive advantage in international markets. One such resource, managerial experience (especially international experience), has been noted earlier (Bloodgood et al., 1996; Reuber & Fischer, 1997; Reid 1981, 1983). Other tangible and intangible resources that are unique to the firm (Barney 1986, 1991; Dierickx & Cool, 1989) constitute the basis for the competitive advantage that allows new ventures to successfully compete in international markets (Bloodgood et al., 1996). However, small firms, and especially new firms, are ill equipped to protect essential knowledge based assets. Indeed, the limited financial resources that entrepreneurs can muster may preclude or restrict direct ownership of assets and internationalization of operations (Oviatt & McDougall, 1994). Instead, new international ventures tend to rely on alternative governance structures (licensing, franchising) to capitalize on their unique resource configurations and abilities (Oviatt & McDougall, 1994). The dangers associated with network relationships are, however, mitigated by the imperfect imitability of knowledge based resources, as well as legal and procedural means (Oviatt & McDougall, 1994).

In sum, the benefits derived from the internationalization of knowledge intensive products outweigh the possible risks. Knowledge is a highly mobile resource, which when combined with location specific assets, provides the basis for profitable global operations (Oviatt & McDougall, 1994). Thriving operations may not be, however, solely dependent on managerial and firm resources as broader environmental factors may intervene in the selection of successful firms.

For this review of the theoretical foundations of international entrepreneurship, theoretical paucity summarizes the present state of research. Disparate elements have been borrowed from the major schools of thought in management, according to the needs of the authors, without much effort to integrate these insights into a coherent basis for the study of international entrepreneurship Thomas & Mueller, 2000). A notable exception in this regard is the work of McDougall and her associates (McDougall, 1989; McDougall et al., 1994; McDougall et al., 1996; Oviatt & McDougall, 1994). These researchers emphasize the weaknesses of theories that seem unable to accommodate the international new venture phenomenon and sketch out the broad lines of the domain of international entrepreneurship. Figure 2 represents the major themes of international entrepreneurship research.

Figure 2: Major Themes in International Entrepreneurship research



SECTION II: ORGANIZING THEMES

Two major streams of research can be distinguished in the international entrepreneurship literature. The first considers *firm size* as the key delineator of entrepreneurial firms. The scholarly focus here is on small and medium sized firms, especially the export behavior of these firms (Ali & Swiercz, 1991; Bilkey & Tesar, 1977; Ogbueli & Longfellow, 1994). A second group of researchers considers *firm age* as the key variable in delineating their area of study (Bloodgood et al, 1996; Jolly et al., 1992; McDougall, 1989; McDougall & Oviatt, 1996; Oviatt, McDougall, Simon & Shrader, 1993). The interest of these authors is centered on new ventures, specifically those that have been created by individual groups of entrepreneurs as opposed to corporate spin-offs. It must be noted that these new ventures are overwhelmingly small, thus creating a high degree of overlap between the two groups of researchers. As a result, this paper cannot ignore the insights provided by researchers of small firms even though some small firms may have long ago shed their entrepreneurial characteristics. A third variable, whether the firm is international or not, offers a perspective from which to analyze previous scholarly work. The present discussion on definition and delineation is thus constructed around these three elements: size, age and international orientation.

Firm Size

A basic premise of the literature on small firms is that "smaller businesses are not smaller versions of big businesses" (Shuman & Seeger, 1986). It is argued that small firms have unique characteristics that determine their strategic options and the conditions for their success (D'Souza & McDougall, 1989; Baird et al., 1994). Since this alleged distinctiveness hinges on size, the question that emerges naturally is: what is a small firm? The answer to this question varies by author. Most researchers provide a brief definition (Ali & Swiercz, 1991; Erramilli & D'Souza, 1993; Ogbueli & Longfellow, 1994), offer an imprecise description (Bilkey & Tesar,) or remain silent on the subject (Yaprak, 1985).

Apart from definition, different variables have been used as measures of size. Researchers have focused on the number of employees (Namiki, 1988; Walters & Saimee, 1990) or sales (Ali & Swiercz, 1991; Calof, 1993) or both (Baird et al., 1994; Erramilli & D'Souza, 1993). There is no consensus as to the number of employees or the sales figures that define small firms. The former range from 100 or less (Walters & Saimee, 1990) to 500 or less (Baird et al., 1994; Namiki, 1988). The latter vary from a few million dollars (Erramilli & D'Souza, 1993) to one hundred million dollars (Ogbueli & Longfellow, 1994). More importantly, size could be a relative concept depending on the industry (Erramilli & D'Souza, 1993). Most other researchers, however, have relied on a specific cutoff limit in sales across industries.

Baird et al. (1994) considers all firms that have less than 500 employees but exclude those that have sales of less than $500,000. This approach denotes a concern to focus on meaningful small firms to the exclusion of "mom and pop" businesses. What constitutes "meaningful", however, is itself subject to debate. In Bloodgood et al.'s (1996) attempt to study "high potential" ventures, venture capital backed firms with an initial public offering (IPO) of stock were solely relied upon. This study, however, is anchored firmly in the entrepreneurship literature where firm age is of actual importance. Another important variable in entrepreneurship literature is firm age.

Firm Age

In their review of entrepreneurship literature, Low and MacMillan (1988) note entrepreneurship's many definitions across both disciplines and authors. From Schumpeter (1934) to Stevenson, Roberts & Grousback (1985), however, a dominant theme in the definition of entrepreneurship is the concept of a <u>new</u> undertaking. For example, Low & MacMillan (1988) define entrepreneurship as the "creation of new enterprise" (p. 141). International entrepreneurship could therefore be conceived as simply an extension of the above definition, namely the "creation of new international enterprises". Prior to addressing the question of what constitutes an international enterprise, however, it is necessary to elucidate the role of age ("newness") in the delineation of this domain of study.

According to a number of authors (Biggadike, 1979; McDougall & Oviatt, 1996; Miller & Camp, 1985), new ventures are firms that are eight years old or less. Other researchers have implicitly or explicitly adopted different cutoff limits ranging from three (Shane et al., 1991) to seven years (Jolly et al., 1992). The sole unifying element among these studies is the arbitrary character of the selection. It may be that what constitutes a new venture will depend on industry conditions and characteristics, paralleling the argument for industry mediation of firm size. Many researchers have circumvented this obstacle by choosing a single industry to study (Coviello & Munro, 1992; Oviatt et al., 1993) or closely related businesses (McDougall & Oviatt, 1996). The variation in international environmental conditions is also a major factor in the internationalization of new ventures.

In sum, international firms are those engaged in cross border activities whether as exporters or in other forms. McDougall (1989) has identified international new ventures as those ventures deriving more than 5% of their total sales from international sales. Whether this single criterion captures effectively the concept of internationalization is debatable (see Sullivan, 1994).

Although the three variables reviewed above provide a convenient way to classify firms, these categories are not mutually exclusive. Young firms are likely to be small and entrepreneurial. Small firms may or may not be entrepreneurial and both small and young firms may or may not have an international presence. As this section has highlighted, there is no agreement on what exactly is a small, young or international firm.

SECTION III: METHODOLOGICAL APPROACHES

The incremental accumulation of knowledge necessitates the investigation of causality relationships through systematic hypothesis building based on a sound conceptual framework. Research in the broader area of entrepreneurship has been hampered by the exploratory nature of most studies and their weak theoretical support (Low & MacMillan, 1988). The dual parenthood of international entrepreneurship has not prevented it from floundering on the same grounds. Under these circumstances, it is not surprising that this new field has proved to be a fertile terrain for case studies.

The Case Study Method: A Conduit for Tentative Exploration

Although the thick description of non-randomly selected firms replete with idiosyncratic and anecdotal evidence leaves much to be desired in terms of scientific rigor, it is not entirely devoid of merit. Through the detailed analysis of a newly identified phenomenon, it can potentially lead to theory building (Eisenhardt, 1989). As pioneers in the field of international entrepreneurship, McDougall and her colleagues have compiled a rich inventory of case studies (McDougall et al., 1993, 1994; Oviatt et al., 1993). These examples are used to systematically falsify the generalizability of existing theories and emphasize the need for more comprehensive theoretical outlooks. Similarly, other authors have endeavored to bring to light the existence of firms that were international at inception (Jolly, et al., 1992; Ray, 1989).

Statistical Studies and Issue-Oriented Prescriptive Approaches

Along with case studies, a number of authors have been concerned with the exploration of specific issues through demographic analyses or have produced practitioner-oriented essays ending in recommendations based on casual observations. Although squarely inscribed in the tradition of the export marketing literature, an early study by Wiedersheim-Paul et al. (1978) is noteworthy for emphasizing the decision-maker's "alertness" that precedes internationalization. Other studies rely on survey methods to sketch a profile of small exporting firms (Namiki, 1988; Ogbuehi & Longfellow, 1994; Yaprak, 1985) or investigate exporting firms characteristics (Ali & Swiercz, 1991; Calof, 1993; Cavusgil 1984). Analyses of variance permit researchers to classify firms into distinct groups according to responses to survey items. The contribution of these articles to theory building in international entrepreneurship is tenuous: their merit resides primarily in emphasizing the complexity of the relationship between size and internationalization (Bonaccorsi, 1992). Moreover, the export literature's narrow focus fails to accommodate other forms of international involvement and does not address explicitly the entrepreneurial aspects of small, globally-active firms. Analysis of variance has also been used to analyze the results of a cross-sectional survey of venture initiators across countries. This research resulted in issue-oriented articles (Kolvereid et al. 1993; Shane et al. 1991) as well as theoretically-grounded investigation (Shane & Kolvereid, 1995).

Finally, a study may rely solely on a review of relevant literature to identify and describeconditions for success. For example, D'Souza and McDougall (1989) list strategic fit factors that are instrumental in ensuring the success of joint ventures between small, developed country firms and third world organizations. This type of article is primarily directed at practitioners who occasionally share their industry-based insights (Patricof, 1989).

The Search for Causality Linkages

Although the area of international entrepreneurship still needs clear theoretical and methodological direction, the efforts of a few major contributors bode well for its future. The field is indebted primarily to McDougall, Oviatt and other researchers who have collaborated with them in defining the new venture phenomenon and developing this knowledge base in international entrepreneurship (McDougall, 1989; McDougall & Oviatt. 1991, 1992, 1996; McDougall & Robinson, 1990; McDougall et al. 1994; Oviatt & McDougall, 1994). Taking a step beyond the *a priori* identification of international new ventures based on case studies and expert observation, McDougall (1989) addresses the necessity to statistically differentiate between domestic and international new ventures. Based on responses to a survey of new ventures, she identified a number of strategy and industry structure variables that were used in a discriminant analysis to establish the existence of two distinct groups (domestic and international). This important study constitutes the foundation upon which rests McDougall and Oviatt's (1996) follow-up investigation of the relationship between internationalization, performance and the role of strategic change in internationalization. The hypotheses are firmly anchored in the accumulated theoretical advances in the field and are tested through regression analysis. Moreover, this study incorporated the key element of time in measuring dependent and independent variables, although the two year lag may be insufficient for gauging change or capturing performance effects.

Regression analysis is also adopted as a method of analysis by another group of researchers (Almeida & Bloodgood, 1996; Bloodgood et al., 1996). Using secondary data from a sample of venture capital-backed firms, Bloodgood et al. (1996) investigated several relationships linking firm-level and managerial characteristics variables to the firm's level of international. Additionally, they analyzed the link between these same variables, as well as the extent of internationalization with a lagged measure of performance. Based on the same data, Almeida and Bloodgood (1996) investigated the determinants of the internationalization of specific value chain activities. The analysis uncovers associations and relationships without elucidating the causality between variables. Nevertheless, these studies contribute greatly to the incremental effort of knowledge-based expansion rooted in theoretically sound empirical investigations. Although regression analysis permits researchers to link venture capital firm characteristics and industry and geographical preferences, the generalizability of these results beyond the domestic market is far from established, although industry-specific characteristics may carry across borders.

Since international new ventures appear to dominate in technologically-intensive industries, the industry effect and its implications need to be addressed. Among the industrial sectors that have been prominent in international entrepreneurship research are the computer and communication equipment manufacturers (McDougall, 1989; McDougall & Oviatt, 1996) and software producers (Reuber & Fischer, 1997). The latter group has been surveyed for an investigation of the relationship between management team characteristics and internationalization. The resulting responses provided the data for a multivariate regression analysis which yielded rather weak results (Reuber & Fischer, 1997). Whether small and medium sized firms can be assumed to be equivalent to entrepreneurial firms, as is implicit in this study, is open to debate. The degree of correspondence between the two groups may depend on contextual factors such as the industry environment. International entrepreneurship research stands to benefit, however, in drawing from the small business literature without loosing sight of the caveats that are needed for prudent interpretation. Some researchers have relied on survey methods and regression analysis to examine the export behavior (Bilkey & Tesar, 1977) or foreign investment decisions (Erramilli & D'Souza, 1993) of small firms while others have used a similar statistical approach to address the determinants of small firm performance (Baird et al., 1994; Walters & Samiee, 1990). The study conducted by Baird and his associates is noteworthy for proposing a conceptual framework linking firm characteristics and industry-specific determinants to the choice of international strategy and, subsequently, performance. The tentative associations between variables established in this and other previously discussed articles call for additional investigations based on different data collection procedures and methods. Although the importance of cross-sectional analyses is not to be underestimated, the need for longitudinal studies is particularly glaring. The value of increased methodological rigor and sophistication depends, however, on the clarity and cohesion of the research agenda. This condition, in turn, can only be fulfilled through incremental progress that builds on previous research.

Table 2 contains a summary of previous research on the dimensions discussed above.

Table 2: Review of Previous Research

Study	Key Issues	Theoretical Perspective	Organizing Themes	Methodological Approaches
Coviello, 2006	Network dynamics of New Ventures	Network Theory and Entrepreneurship Literature	N/A	Multi-site Case Research
Fernandez & Nieto, 2006	Impact of Ownership on Internationalization Strategy	International Management and Entrepreneurship Literature	Ownership Type	Panel Data Modeling
James & Coviello, 2005	Entrepreneurial Process and Internationalization	International Management and Entrepreneurship literature	Time	Conceptual Development
DeClercq, Sapienza & Crijns, 2005	Extent of International activities by SMEs	Organizational Learning Theory and Entrepreneurial Orientation	N/A	Multiple Regression
Fletcher, 2004	Internationalization of small firms	International Management and Entrepreneurship Literature	Size and Time	Case Study
Coviello & Jones, 2004	Methodological Issues in International Entrepreneurship research	International Management and Entrepreneurship Literature	N/A	Synthesis of research methodologies
Etemad &Lee, 2003	International Entrepreneurship Knowledge network	Knowledge Based Theory	N/A	Epistemological Bibliometric research
Nakos & Brouthers., 2002	Choice of foreign market entry mode in SMEs	International Management Literature	Size	Logistic Regression
Lu & Beamish, 2001	Internationalization and performance of SMEs	International Management and Entrepreneurship Literature	Firm Size and Firm Growth	Pooled Time Series regression
Steensma, et.al.,2000	Effect of national culture on technology alliances	International management Literature	Size (small firms)	Hierarchical and Moderated logistic

Table 2: Review of Previous Research				
Study	Key Issues	Theoretical Perspective	Organizing Themes	Methodological Approaches
	by SMEs			regression
Burgel & Murray., 2000	Choice of entry mode in technology start ups	International management Literature	Age and Size	Probit Regression
Autio, et.al.,2000	Drivers of international growth in entrepreneurial firms	Knowledge based theory	Age	Panel Data Analysis
Zahra, et.al.,2000	Effects of internationalization on learning of the firm	Entrepreneurship literature	New Ventures	Moderated Regression
Autio, et.al.., 1997	Factors influencing entrepreneurial intent among students	Planned behavior	N/A	Multiple Regression
Begley, et.al.,1997	Socio-cultural dimensions and interest in business start-up	Nationality and cultural values	N/A	Factor Aalysis, Regression Analysis
Birkinshaw, 1997	Corporate entrepreneurship in multinational subsidiaries	International management literature	N/A	Kruskall-Wallis test
Holt, 1997	Entrepreneurial values in China	Nationality and cultural values	N/A	ANOVA, pair-wise Scheffe test
Leleux & Muzyka, 1997	European IPO markets	Entrepreneurship literature	N/A	Event Study, Regression Analysis
Levie, 1997	Firm growth and performance	Entrepreneurship literature	Age	Chi-square, Mann-Whitney test
Manigart, et.al., 1997	Venture capitalist investment appraisal	Entrepreneurship literature	N/A	T-test
Mascarenhas, 1997	Market entry and performance	International management literature	Size	Regression, Logit Analysis
Oviatt & McDougall, 1997	Challenge of INVs to existing internationalization process theory	Entrepreneurship and international business literatures	Age	N/A
Reuber & Fischer, 1997	International experience and firm internationalization	Strategic management and international business literature	Size	Descriptive statistics, Regression Analysis
Tiessen, 1997	National culture and entrepreneurship	National culture literature	N/A	N/A

Table 2: Review of Previous Research

Study	Key Issues	Theoretical Perspective	Organizing Themes	Methodological Approaches
Wichmann, 1997	Private and public trading firms	Export literature	N/A	N/A
Zacharakis, 1997	Foreign market entry	Transaction cost theory	Age, size	N/A
Zahra, Neubaum & Huse, 1997	Environmental effects on export performance	Export, strategic management literature	Age, size	Hierarchical Regression
Almeida & Bloodgood, 1996	Internationalization of value chain activities	Resource-based theory	Age	T-test, Logit Analysis, Descriptive Statistics
Bloodgood, Sapienza & Almeida, 1996	Determinants and outcomes of internationalization	International management literature	Age	Multiple Regression
Boter & Holmquist, 1996	Internationalization in traditional vs. innovative companies	International management literature	N/A	N/A
Busenitz & Lau, 1996	Cognitive factors associated with new venture creation	Managerial cognition literature	N/A	N/A
Fladmoe-Lindquist, 1996	Franchisors' capabilities	Resource-based theory	N/A	N/A
Kirby, et.al., 1996	Technical consultancy in Europe	Entrepreneurship literature	Size	N/A
Lado & Vozikis, 1996	Technology transfer to developing countries	Entrepreneurship literature	N/A	N/A
Matthews, Qin, Franklin, 1996	Entrepreneurial ventures in China and Russia	Entrepreneurship literature	Age	N/A
McDougall & Oviatt, 1996	Impact of internationalization	Strategic choice	Age	Regression Analysis
Murray, 1996	Successful, VC backed, new technology-based firms	Entrepreneurship literature	N/A	N/A
Muzyka, Birley & Leleux, 1996	Decision trade-offs by European venture capitalists	Entrepreneurship literature	N/A	Conjoint Analysis, Cluster Analysis
Sapienza, Manigart & Vermeir, 1996	Venture capitalist governance	Entrepreneurship literature	N/A	Factor Analysis, Regression Analysis
Shane, 1996	International franchising	Entrepreneurship literature	N/A	Logistic Regression Analysis

Table 2: Review of Previous Research

Study	Key Issues	Theoretical Perspective	Organizing Themes	Methodological Approaches
Wright, Filatotchev & Buck, 1996	Entrepreneurship in Russia and Ukraine	Entrepreneurship literature	N/A	Significance Tests
Berra, Piatti & Vitali, 1995	Evaluate production and internationalization strategies	Entrepreneurship literature	Size	Chi-square
Cafferata & Mensi, 1995	Internationalization strategies and information services	International management literature	Size	N/A
Deakins & Philpott, 1995	Networking between external support agencies and financial institutions	Entrepreneurship literature	N/A	N/A
Donckels & Lambrecht, 1995	Alliance among SMEs from developed and developing nations	International management literature	Size	Non-linear principle component analysis
Fujita, 1995	SME FDI patterns	International management literature	Size	Descriptive statistics
Mulhern, 1995	Development of the SME sector in Europe	Entrepreneurship literature	Age	N/A
Preble, 1995	International franchising	Entrepreneurship literature	N/A	Descriptive statistics
Shane & Kolvereid, 1995	Environment, strategy, and new venture performance	Population ecology, contingency theory	Age	Cluster analysis, LISREL, significance tests
Wagner, 1995	Firm size and exports	Export literature	Size	TOBIT analysis
Yusuf, 1995	Small business critical success factors	Entrepreneurship literature	Size	T-test
Baird, Lyles & Orris, 1994	Small firms' strategic and organizational responses to global competition	Entrepreneurship literature	Age and size	T-test, factor analysis, step-wise multiple regression
Blanchflower & Meyer, 1994	Self employment trends in Australia and the U.S.	Entrepreneurship literature	N/A	Probit analysis
Hara & Kanai, 1994	Strategic alliances between U.S. and Japanese firms	International management literature	Size	N/A
Jaffe & Pasternak, 1994	Intention to export by SMEs	Export literature	Size	Factor analysis, linear regression

Table 2: Review of Previous Research				
Study	Key Issues	Theoretical Perspective	Organizing Themes	Methodological Approaches
Levie, 1994	Government policies and early corporate growth	Evolutionary, bureaucracy, and decision making theories	Age	N/A
Lyles, Carter & Baird, 1994	Advantages of partnerships	Upper echelons literature	Age	ANOVA
Manigart, 1994	Creation of venture capital firms	Population ecology	N/A	Event history, event count, and maximum likelihood analysis
Matsuda, VanderWerf & Scarbrough, 1994	U.S. and Japanese IPOs	Entrepreneurship literature	N/A	Chi-square, Kolmogorov-Smirnov test
McCubbins, 1994	International legal system	Entrepreneurship literature	N/A	N/A
McDougall, Shane & Oviatt, 1994	Formation of international new ventures	Resource based theory	Age	N/A
Muzyka & Hay, 1994	MBO investors' assessment of opportunity	MBO literature	N/A	Descriptive statistics
Ogbuechi & Longfellow, 1994	Export experience and export perceptions	Export literature	Size	Factor analysis, MANOVA
Oviatt & McDougall, 1994	Theory of international new ventures (INVs)	Entrepreneurship, international business, and strategic management literature	Age	N/A
Oviatt, McDougall, Simon & Shrader, 1994	Formation of INVs	Entrepreneurship literature	Age	N/A
Reynolds, Storey, & Westhead, 1994	Processes affecting firm birth rates	Entrepreneurship literature	Age	Regression analysis
Schwalbach, 1994	European firm size change	Entrepreneurship literature	Size	Ordinary least squares regression
Shane, 1994	Cultural values and innovation championing	National culture literature	N/A	Factor analysis, Spearman Rank correlations
Tyson, Petrin & Rogers, 1994	Market transformation in Eastern Europe	Entrepreneurship literature	N/A	N/A

Table 2: Review of Previous Research

Study	Key Issues	Theoretical Perspective	Organizing Themes	Methodological Approaches
Vesper, Vesper & Cho, 1994	Difficulties of the international start-up process	Entrepreneurship literature	Age	N/A
Baum, et.al., 1993	Comparative characteristics of entrepreneurs and managers	Nationality and cultural values	ANOVA	N/A
Beamish, Craig & McLellan, 1993	Export performance	Export literature	Size	Pearson correlations
Bonaccorsi, 1993	Survey of empirical research- Italian SMEs (exporting)	Export literature	Size	N/A
Calof, 1993	Firm size and internationalization	International management literature	Size	Chi-square, Pearson correlation
Erramilli & D'Souza, 1993	Foreign market entry behavior	International management literature	Size	Multiple and logistic regression analysis
Giamartino, McDougall & Bird, 1993	Internationalization of the field of entrepreneurship	Entrepreneurship literature	N/A	Descriptive statistics
Gibb, 1993	Business development assistance in Central/Eastern Europe	Entrepreneurship literature	Size	N/A
Kolvereid, Shane & Westhead, 1993	Female entrepreneurs and business start-ups	Entrepreneurship literature	Age	Factor analysis, MANOVA, ANOVA
Kuratko, 1993	Family business succession	Entrepreneurship literature	N/A	N/A
Landstrom, 1993	Informal risk capital	Entrepreneurship literature	N/A	Descriptive statistics
Lee & Ackelsberg, 1993	Impact of EC integration	Entrepreneurship literature	Size	Chi-square
Lerner & Hendeles, 1993	Entrepreneurial aspirations among immigrants to Israel	Entrepreneurship literature	N/A	T-test, multivariate regression
Levie, 1993	Governmental support of new ventures	Bureaucracy theory	Age	Descriptive statistics
Muzyka, et.al.,	Entreprenuers'	Entrepreneurship literature	Size	Descriptive statistics

Table 2: Review of Previous Research				
Study	Key Issues	Theoretical Perspective	Organizing Themes	Methodological Approaches
1993	perceptions of value realization			
Regnier, 1993	Role of small firms in the industrialization process	Entrepreneurship literature	Size	Descriptive statistics
Seringhaus, 1993	Marketing behavior of high technology exporters	Marketing literature	Size	Discriminant analysis, correlation analysis, t-test
Shane, 1993	Cultural values and society innovativeness	National culture literature	N/A	Least squares multiple regression
Takyi-Asiedu, 1993	Socio-cultural effects on entrepreneurship	National culture literature	N/A	N/A
Wright, et.al., 1993	MBO and buy-ins	Leveraged buy-out literature	N/A	Significance tests
Abetti, O'Such & Porowski, 1992	Technological entrepreneurship in Eastern Europe	Entrepreneurship literature	N/A	N/A
Abetti, O'Such & Porowski, 1992	Locational strategies of firms	Geographic location literature	Age	Chi-square, descriptive statistics
Bonaccorsi, 1992	Relationship between firm size and export intensity	Export literature	Size	ANOVA, Kruskall-Wallis test
Chan & Justis, 1992	Franchising in the EC	Franchising literature	N/A	N/A
Coviello & Munro, 1992	Role of linkages in the internationalization process	International management literature	Size	N/A
Harrison & Mason, 1992	Venture capital market in UK	Entrepreneurship literature	N/A	Chi-square
Hurry, Miller & Bowman, 1992	Japanese venture capital investments in the U.S.	Entrepreneurship literature	N/A	Del method
Kolvereid, 1992	Founder characteristics and firm growth	Founder characteristics	Age	Chi-square, factor analysis
Kotabe & Czinkota, 1992	Assistance needs of export firms	Export literature	N/A	Descriptive statistics, factor analysis, ANOVA

Table 2: Review of Previous Research				
Study	Key Issues	Theoretical Perspective	Organizing Themes	Methodological Approaches
Manigart, Joos & Vos, 1992	Venture capital company performance	Entrepreneurship literature	N/A	Wilcoxon rank sum test
McGrath & MacMillan, 1992	Entrepreneur perceptions about themselves	Nationality and cultural values	Age	Stepwise discriminant analysis, significance tests
McGrath, MacMillan & Scheinberg, 1992	Cultural differences between entrepreneurs and non-entrepreneurs	Nationality and cultural values	Age	Stepwise discriminant analysis
Morris, Pitt, Davis & Allen, 1992	Corporate culture impact on entrepreneurship in established firms	Nationality and cultural values	N/A	MANOVA, curvilinear, and multiple curvilinear regression, trend analysis
Rondinelli & Kasarda, 1992	The capacity for trade in developing countries	Entrepreneurship literature	N/A	Descriptive statistics
Roure, Keeley & Keller, 1992	Venture capital strategies	Entrepreneurship literature	N/A	Regression analysis
Shane, 1992	Cultural values and society innovativeness	National culture literature	N/A	Correlation analysis
Welfens, 1992	Foreign investment in Eastern Europe	International business literature	N/A	N/A
Wright, Thompson & Robbie, 1992	Venture and development capital led buyouts in Europe	Leveraged buy-out literature	N/A	Descriptive statistics
Ali & Swiercz, 1991	International competitiveness of SMEs	Export literature	Size	MANOVA
Brockhaus, 1991	Entrepreneurship programs outside of the U.S., Canada, and Western Europe	N/A	N/A	N/A
Carsrud, 1991	Academic entrepreneurship in Europe	N/A	N/A	N/A
Dyson, 1991	Computer entrepreneurs in Eastern Europe and the Soviet Union	Entrepreneurship literature	N/A	N/A
Giamartino, 1991	Entrepreneurship in	Entrepreneurship literature	N/A	N/A

Table 2: Review of Previous Research				
Study	Key Issues	Theoretical Perspective	Organizing Themes	Methodological Approaches
	developing economies			
Harper, 1991	Promotion of enterprise development in poorer nations	Entrepreneurship literature	N/A	N/A
Holzmuller & Kasper, 1991	Export performance	Export literature	Size	Regression analysis, factor analysis, structural equation modeling
Muzyka, Kets de Vries & Ullmann, 1991	Cultural aspects of entrepreneurship	Nationality and cultural values	N/A	Qualitative analysis of questionnaire data
Ohe, et.al., 1991	Differences between Japanese and Silicon Valley entrepreneurs	Entrepreneurship literature	N/A	Correlation analysis
Ooghe, Manigart & Fassin, 1991	European venture capital industry development	Entrepreneurship literature	N/A	Cluster analysis
Oviatt, et.al., 1991	Formation of INVs	Entrepreneurship literature	Age	N/A
Ray, 1991	New venture international opportunity recognition	Export literature	Size	Descriptive statistics
Shane, Kolvereid & Westhead, 1991	New firm formation	Entrepreneurship literature	Age	Factor analysis, significance tests
Yang, et.al., 1991	Entrepreneurs' values	National culture literature	N/A	Discriminant analysis, t-tests
Abetti & Wheeler, 1990	Technology-based regional economic development	Entrepreneurship literature	Age	N/A
Choy, 1990	Comparison of financing between U.S. and Asian countries	Entrepreneurship literature	Size	N/A
Dichtl, Koeglmayr & Muellar, 1990	SME export success factors	Export literature	Size	Regression analysis
Doimonde, 1990	Approaches used in resource-starved environments	Entrepreneurship literature	Age	N/A

Table 2: Review of Previous Research				
Study	Key Issues	Theoretical Perspective	Organizing Themes	Methodological Approaches
Galbraith, DeNoble & Estavillo, 1990	Location decisions of High tech firms	Location choice literature	Size	Mann-Whitney non-parametric test, linear regression analysis
Howard, 1990	Small business networks and public entrepreneurship	Entrepreneurship literature	Size	N/A
Keeley, et.al., 1990	Venture creation across countries	Entrepreneurship literature	Age	Regression analysis, descriptive statistics
Shan, 1990	High tech firms' strategies	Strategic management, international business literature	Size	Logistic regression
Sharma, Miller & Reeder, 1990	Growth of micro-enterprise	Entrepreneurship literature	Size	N/A
Tallman & Shenkar, 1990	International cooperative venture strategies	Transaction cost theory, organization learning literature	Size	Chi-square analysis
Tybejee, 1990	Internationalization of High tech ventures	Export, international business literature	Age	Regression analysis, significance tests
Walters & Samiee, 1990	Small exporting firm performance	Export literature	Size	Factor analysis, multiple regression
D'Souza & McDougall, 1989	Factors affecting Third World joint venture success	International management literature	Size	N/A
McDougall, 1989	Identify globally oriented firms	Entrepreneurship literature	Age	Discriminant analysis, ANOVA
Ooghe, Bekaert & van den Bossche, 1989	Important characteristics of venture capital	Entrepreneurship literature	N/A	Descriptive statistics
Patricof, 1989	Internationalization of venture capital	Entrepreneurship literature	N/A	N/A
Miesenbock, 1988	Compare empirical studies of small firm exporting	Export literature	Age	N/A
Namiki, 1988	Small business export strategy	Export literature	Size	Factor analysis, cluster analysis, ANOVA
Peterson, 1988	Encouraging entrepreneurship	Entrepreneurship literature	N/A	N/A

Table 2: Review of Previous Research

Study	Key Issues	Theoretical Perspective	Organizing Themes	Methodological Approaches
	internationally			
Scheinberg & MacMillan, 1988	Motivation to start a business	Entrepreneurship literature	Age	Factor analysis
Tybejee & Vickery, 1988	Venture capital in Europe	Entrepreneurship literature	N/A	Descriptive statistics
Dana, 1987	Government intervention in venture creation	Entrepreneurship literature	N/A	N/A
Edmunds & Khoury, 1986	Small business exports	International management literature	Size	N/A
Holden, 1986	U.S. exporters' opportunities in Europe	Export literature	Size	Descriptive statistics
Yaprak, 1985	Difference between exporting and non-exporting firms	Export literature	Size	Cross-classification analysis
Leonard-Barton, 1983	Personal communication networks	Entrepreneurship literature	N/A	Descriptive statistics
Utterback,et.al., 1983	High technology firm formation	Entrepreneurship literature	Age	N/A

SUMMARY OF FINDINGS AND DIRECTIONS FOR FUTURE RESEARCH

We believe that international entrepreneurship's present rudimentary development is temporary and that it will grow and mature as scholarly research follows the expansion of cross-border activities by small, entrepreneurial firms. Although these ventures are unique and distinct from traditional small firms, some findings may be transferable from one type of organization to the other. It has been shown, in particular, that lack of size does not impede internationalization (Calof, 1993) although the relationship between size and internationalization remains ambiguous and uncertain (Aaby & Slater, 1989; Bilkey, 1978; Gemunden, 1991; Miesenbock, 1988; Reid, 1983). While the literature on export marketing focuses on small firms, the newly emerging literature on international new ventures is centered on young firms (McDougall et al., 1994). The relationship between these two variables (age and size) in connection with internationalization needs to be explored in future research. The distinction between small firms and entrepreneurial firms is often a matter of emphasis. Future research should focus on definitional rigor which will permit useful comparisons between studies.

The discussion of the underlying components of the internationalization construct and the best way to capture its multiple dimensions is beyond the scope of this paper. The interested reader is refereed to Sullivan (1994, 1995) and Ramaswamy, Kroeck and Renforth (1995).

The profile of the board of directors and/or top management team may provide clues to understanding internationalization. It has been shown that the international work experience of the board of directors is positively associated with internationalization (Bloodgood et al., 1996). Among top management groups, the diversity of global professional exposure seems to favor internationalization although a number of moderating variables such as the presence of foreign partners, systematic data collection on foreign markets and length of international involvement influence this relationship (Reuber & Fischer, 1997).

Strategy orientations have also been associated with level of internationalization. For example, Porter's (1980) strategy categorization is tapped by Bloodgood and his associates for possible links with internationalization. It appears that product diversification is positively associated with internationalization (Bloodgood et al., forthcoming). Among small firms studied by Baird and his associates, those that were internationally-oriented were likely to base their strategy on a patent or manufacturing capability and process changes (Baird et al., 1994). Strategy variables contribute to discriminate between international new ventures and domestic ones: the former tend to seek broader market coverage and more customers, and pursue aggressive entry strategies, while the former tend to follow production expansion and customer specialization strategies (McDougall, 1989). Future research needs to go beyond the strategy-internationalization dynamic and examine changes in the firm's structure and control systems as possible determinants of internationalization or modifiers in the strategy-internationalization dynamic.

Industry factors are controlled in some studies (Almeida & Bloodgood, 1996; Bloodgood et al., 1996) although they may also be analyzed in search of elements discriminating between international new ventures and others. For example, it has been noted that international new ventures are prevalent in industries characterized by a higher intensity of international competition and higher perceived restrictiveness of government policies (McDougall, 1989). Several caveats must be formulated when interpreting these results. First, the heterogeneity of definitions and measurements precludes direct comparisons between articles that are testing similar variables. Second, the causality link between the variables is not specified. For example, the disclosure that international new ventures tend to compete in industries with higher levels of competition does not make clear "whether the new venture selects an industry with a high degree of international competition and therefore responds with an international orientation, or, because the new venture has an international orientation it perceives or recognizes a higher degree of international competition" (McDougall, 1989, p. 388). In other words, the relationships described provide only a rough understanding of associations between concepts: they are unable to uncover the underlying cause-effect dynamics. Future research aimed at clarifying this cause-effect dynamic would be valuable.

Preliminary results, based on different definitions of internationalization, seem to point to a positive relationship between internationalization and most dimensions of performance (Baird et al., 1995; Bloodgood et al., 1996; McDougall & Oviatt, 1996). Should these fragmentary findings be confirmed by other investigations, there remains the more fundamental task of explaining the link between strategy and performance and the role of internationalization in this relationship. The importance of addressing this issue cannot be overstated: the strategy-performance paradigm being at the core of the management literature, the exploration of this relationship in the context of international new ventures is essential for the field to the gain legitimacy and recognition it deserves within the realm of management. This constitutes the real challenge facing scholars in international entrepreneurship today and it cannot be met through empirical investigation alone. Although the work of pioneers such as McDougall and Oviatt, Bloodgood and others need to be replicated and broadened, the real difficulty resides in translating empirical results into generalizations that are in turn incorporated into theoretical conceptualizations. For it is in the theoretical arena that the field's vulnerabilities are the most glaring: the most common reference point remains the sole article published over ten years ago by Oviatt and McDougall (1994). Oviatt and McDougall's (1994) work is important because for the first time a framework that incorporates international new ventures within the more general precepts of organizational theory is proposed. It is perhaps not surprising that the typology has not generated empirical investigations. It appears to these authors that a number of countries where a new venture is involved is a relatively minor criterion, especially when compared to the type of commitment (degree of commitment, mode of operations).

While there seems to be increased interest in the role of entrepreneurship in the area of economic development (Zapalska& Edwards, 2001 and Schaper, 2002), the nature of the constraints facing international entrepreneurs (internal and external) and their relationship with strategy and performance represent another area in need of investigation. The relationship between established firms and new ventures has also not been explored sufficiently. The emphasis on these questions does not preclude the role of continued research on peripheral issues such as environmental conditions (Gupta & Sapienza, 1992; Harrison & Mason, 1992) or cross-country comparisons (Kolvereid et al., 1993; Shane et al., 1991), however. These are parallel tracks that merit pursuit alongside the search for a theoretical rationale for the existence of international new ventures.

Two somewhat related research areas hold promise for an increased understanding of international entrepreneurship. First, longitudinal studies examining the development over time of international new ventures are needed. According to Low and MacMillan (1988) only through the use of cross-sectional and longitudinal studies can researchers provide the evidence concerning causality needed for theoretical model building. The study by Lu & Beamish (2001) is a good start in this regard. Another potentially fruitful area of research is in the examination of how quickly firms internationalize. If not "born international", what drives young firms to internationalize and what are the outcomes of this internationalization?

The central premise of the field is that internationalization is not the result of a strategic decision reached at an undetermined point in time, but rather a necessary condition for the very existence of the venture. This claim, if and when verified, will establish the separate nature of international new ventures as a new form of organization. However, this validation necessitates empirical support as well as theoretical backing. In this paper we argued that future empirical and conceptual contributions will be effective if they are anchored around the axis linking firm characteristics, strategy and performance.

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AN ARTIFICIAL INTELLIGENCE FOREIGN MARKET SCREENING METHOD FOR SMALL BUSINESSES

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ABSTRACT

Many small businesses would like to grow their sales via exporting, but may not have the wherewithal to begin. One imposing task is finding the right global market for a product or service. There are over two hundred potential foreign markets, how does an entrepreneur decide which six to eight markets to seriously explore? When faced with such a difficult question to answer, many entrepreneurs shy away from international efforts. The purpose of this research is to present an artificial intelligence (AI) based methodology of foreign market screening referred to as a self-organizing map that will assist small businesses in locating which foreign markets they should explore. A small wood veneer business serves as an example of how this method is used.

INTRODUCTION

Since small businesses employ more than half of the U.S. private work force it is necessary for small businesses to be successful in their exporting efforts. According to Donald A. Manzullo, U.S. House Representative from the 16th congressional district of Illinois and chair of the Committee on Small Business, nearly 250,000 small businesses now export (2003). In addition many more small businesses are involved in exporting through subcontracting and supplying larger companies. Operationally defined, the Small Business Act states that a small business concern is "one that is independently owned and operated and which is not dominant in its field of operation (United States Small Business Administration, 2006)." Much of the related research focuses on Small and Medium Sized Enterprises (SMEs) which are commonly defined as businesses having fewer than 500 employees. The United States International Trade Commission (2006) reported that in 2004 exports of merchandise grew to $727.2 billion dollars.

Unfortunately small businesses seeking international markets face a number of impediments. Although they may be interested in growing their sales via exporting, they seldom know where or how to begin. Additionally, they don't have much time or money to devote to the effort. Consequently, they often either never seriously pursue foreign markets or they abandon any exploration efforts prematurely. The idea of finding the right global market for a product or service is, for a small business, a daunting task. There are slightly over two hundred potential foreign markets on earth, how, with limited time and budget, is an entrepreneurial endeavor supposed to decide which six to eight markets it should be seriously exploring?

The purpose of this research is to present an artificial intelligence (AI) based methodology of foreign market screening that is appropriate and available for small businesses. Previous research in this area has demonstrated how Self-Organizing Maps or SOMs can be applied to market screening (Fish, 2006). This research furthers the field in a number of significant ways. First, previous studies have been for hypothetical large or medium sized firms, but this study employs data and experiences from an actual, small business. In this study, a small business case study was employed thus changing the nature of the methodology from that of large, well capitalized firms to an approach usable by smaller capitalized firms. Secondly, previous research demonstrated the concept using a limited number of potential markets (fifty-three) (Fish, 2006). This research used data from relatively inexpensive (thus accessible to small businesses) databases to screen all the markets on earth. Thirdly, quite often in this area of market screening, macro-indicators of general economic conditions, as well as, macro-proxies for the product are used as the screening variables. Small marketers face the additional challenge of locating a market where they can establish a toe-hold without being able to bring significant assets to the effort. Their success lies in being “a big fish in a little pond,” because they don’t have the capital to compete in the large ponds (that is, markets). This research developed an indicator of U.S. *export gaps* that should be of interest to a small business attempting to find a niche market. A U.S. export gap is defined here as a gap between the amount any particular country is importing of a certain product and how much of that import is coming from the U.S. Countries with large U.S. export gaps represent potential opportunities for U.S. exporters because the foreign market is receptive to imports but for some reason are not importing U.S. products. The ability of small businesses to be able to locate these gaps in small, but growing markets would be critical to the market screening process.

In this study we will use trade data over a five year period across five variables to build a data table that will be submitted to the SOM program. The program then will organize over two-hundred countries into a two dimensional map. We will examine the results of the mapping process and use them to screen out countries in an effort to arrive at just a handful of markets that can then be studied in detail. This research is aimed at the screening process, not the final international market selection.

LITERATURE REVIEW

Background

The ability of an international firm to correctly select markets for its portfolio of products is paramount to its success. During the process of international market selection (IMS) firms must find markets that offer prospects to grow sales, yet also fit strategically with the firm. Finding these markets is not easy and academic researchers have studied this issue at length (see Cavusgil & Li, 1992 for an annotated bibliography on this area of research). A number of systematic approaches to IMS have been developed over the years. Upon review of these efforts, one could conclude that the IMS process has three stages: 1) market screening, 2) market identification and 3) market selection (Kumar, Stam, & Joachimsthaler, 1993; Anderson & Strandskov, 1998).

With the market screening phase the firm is simply attempting to generate a short list of markets for further study, this stage most often involves using macro variables with secondary data. In the market identification stage, information more specific to the product or service is used to reduce the markets under consideration even further. Here micro level data, secondary or primary is employed. In the market selection stage, detailed analysis of the remaining markets occurs; quite often primary data is used to predict consumer response to the market offer, specific competitors are identified and gauged and, the home firm's strategy is considered. It is at the conclusion of this stage that the final foreign market decision is made.

The two most widespread mistakes of market screening are ignoring or missing markets that offer good potential for a firm's products and spending too much time researching markets that are poor prospects for the firm (Root, 1997).

IMS Screening Process

Brewer (2001, p. 155) defines IMS as the "complete decision process by a firm which ultimately results in the application of marketing resources to the market(s) concerned." The model used by Brewer (2001) is 1) establish a country market set; 2) identify a country; 3) evaluate the country based on attractiveness and competitive position; 4) select market based on "informing" decisions. The "informants" include allies, enquiries, exhibitions, experience, government programs, networks, previous customers, primary research, published reports, quantitative models, seminars, representatives, and visits to markets. An assessment of international marketing opportunities usually begins with a screening process that involves gathering relevant information on each country and removing the less desirable countries from consideration (Jeannet & Hennessey, 2001; Koch, 2001; Robertson & Wood, 2001). During the first stages of this process, macro variables are often used to discriminate between countries that represent potential markets and those with little opportunity. General market indicators include economic, political and cultural measures. Economic measures may include GNP per capita, cars per capita, or income per capita. While political measures may include a political risk index that may be used to exclude countries with political instability, cultural measures such as Hofstede's Cultural Dimensions can be used to screen out countries that may be considered risky due to large cultural differences between the marketer's home country and potential foreign markets (Hofstede, 1980). The exact process and criteria chosen are up to each individual company and can vary greatly among global firms. The purpose of the screening process is not to select foreign markets, but to allow the international firm to quickly focus efforts on the most promising markets by developing a group of markets that merit further research. Preliminary screening criteria may include 1) market size and growth potential, 2) competition, 3) risk associated with operating in a given national or product market, 4) factors relating to the costs of operating in the country, and 5) access and availability of channels of distribution and media (Douglas, Craig, & Keegan, 1982).

The major advantages of a quantitative approach to market screening are that they reduce subjectivity in the process and they make it possible to evaluate a large number of markets (Kumar, Stam, & Joachimsthaler, 1994). An initial attempt at employing quantitative methods to assist in market grouping was made by Sethi (1971), who used factor analysis and then cluster analysis to analyze data from 91 countries and 29 variables of interest to create four variable clusters that yielded seven country clusters. Although the stated purpose of his research was to assist firms in grouping their world markets so that they may apply uniform marketing approaches, the concept of grouping markets under consideration became another use of clustering. Previously, Liander, Terpstra, Yoshino, and Sherbini (1967) had argued for the grouping of international markets due to the increased efficiencies in international operations gained by clustering markets into similar groups. Today one of the most common strategies that has been adopted by the quantitative approach is market clustering based on similarities of criteria (Kumar, Stam, & Joachimsthaler, 1994).

Much research has been conducted regarding International Market Selection. Research in the 1960's and 1970s approached IMS but declined because it was difficult to test the frameworks and models that were introduced. More recently much of the research has been focused on using normative models without empirical data. (Brouthers & Nakos, 2005; Rao, 1979; Pezeshkpur, 1979) An example of this is that size is assumed to be a major factor in export performance, assuming that the larger the enterprise the more successful the performance; however, that has not been proven. Mittelstaedt, Harben, and Ward (2003) found that a firm having at least 20 employees is necessary for export success when they studied 2,848 firms in 49 different industries within the state of South Carolina. However, Wolff and Pett (2000) argue that SMEs export as effectively as larger firms.

A few novel advances did begin to occur in the early eighties, however. Davidson (1983) found that international firms exhibited a preference for markets similar to the home market. For example, a U.S. firm will likely enter Canada, Australia, and the United Kingdom before entering less similar markets such as Spain, South Korea, or India (Jeannet & Hennessey, 2001). Indicators of similarity include 1) aggregate production and transportation, 2) personal consumption, 3) trade, and 4) health and education. Thus finding and grouping countries that are similar to the home country becomes a strategy for market screening.

Kumar, Stam, and Joachimsthaler (1994) proposed a methodology that concurrently considered the objectives of the firm, its resource limitations and expansion strategies when identifying potential markets. Anderson and Strandskov (1998) argued that managerial cognition is more important to IMS than information processing that previous studies imply. To select among international markets managers impose mental maps to recognize market opportunities.

More recently, normative models for small and medium enterprises have emerged. Rahman's (2003) two-stage model first evaluates market size attractiveness that considers both macro and micro as well as firm related variables and then evaluates potential markets' structural attractiveness.

Using a case study, Alon (2004) proposed a six-step model that may be used by small, high-tech firms, as well as small manufacturing firms. The model uses proxy data that are easily available and inexpensive. The steps in the model are 1) examining the product exports; 2) analyzing web site hits; 3) following the customers' globalization; 4) ranking markets in terms of market potential; 5) dividing markets in terms of ease of entry; and 6) evaluating and prioritizing the most promising markets.

Dhanaraj and Beamish (2003) developed an export theory that built upon the resource-based view of the firm sampling both Canadian firms and Midwestern U.S. firms. They found that enterprise, technological intensity, and firm size are good predictors of export strategy. Export strategy, therefore, has proven to positively influence a firm's performance.

Julian (2003) reported on 151 Thai SMEs that exported products or services to one or more countries. He found that competition, commitment, export market characteristics, and product characteristics were the factors that had significant influence on their export marketing performance.

Dikmen and Birgonul (2004) provide the first use of artificial intelligence computing for as a DSS for international market selection. They use a back propagation trained neural network to determine attractiveness and competitiveness factors in the international construction market. While their study demonstrates how a neural network receiving training direction can develop variables to be used in international market screening; this study demonstrates how another type of neural network, a self-organizing map (SOM) using competitive, undirected training, can become a DSS directly involved in the screening process.

Andersen and Buvik (2002) argue that the majority of the approaches in IMS are based on the exporting firms' behavior in selecting the foreign market. However, this could be too narrow a playing field. Andersen and Buvik as well as Brewer (2001) reported that the buyer or customer also plays a role in establishing the export exchange. The development of the relationship between the seller and the buyer should also be researched.

Self-Organizing Maps

Although there are both qualitative and quantitative approaches to the problem of market screening, this research focused on a quantitative methodology to market screening. It applied a form of artificial intelligence computing, self-organizing maps (SOMs), to the problem of foreign market screening. SOMs are a type of neural network that organize data in a manner that is inspired by how the human brain organizes inputs from its environment. The cerebral cortex contains the centers for activities such as speech, vision, hearing, motor functions and thought. These areas are located relative to one another, with each containing what are known as *ordered feature maps*. For example, the auditory region contains the *tonotopic map* where neighboring neurons respond to similar sound frequencies in an orderly sequence from high pitch to low pitch. An SOM is merely a very simple model of these ordered feature maps. If one were to physically extract, unfold, and examine the cortex of an adult human, one would find an approximately one-meter square and three millimeter thick sheet consisting of six layers of neurons. The model that is used in this study is simply a two-dimensional sheet with two layers of processing elements that are analogous to neurons. The first layer contains the input elements that are connected to the second layer containing the output elements (these output elements are often referred to as Kohonen units). The map is often portrayed as a grid, with the grid cells representing output elements. The output grid in essence, becomes a *topographical map* that displays grouped input data in an order-preserving format. In other words, if two input vectors are similar, then they will be mapped to Kohonen units that are close together in the two-dimensional map that represents the features or clusters. If they are very similar, then they will be placed in the same map cell. The salient benefit of the SOMs is their ability to take classes of vectors that are similar in high-dimensional space and display them in two-dimensional space, where humans can more easily visualize them. In this regard they are a type of DSS model that is distinct and different from standard clustering techniques. The DSS is an easily interpretable map that displays markets which are very similar to each other in the same cells. Markets that are somewhat similar are grouped in neighboring cells and markets that are very different are found in cells that are a great distance away on the map.

An interesting analogy of the SOM learning process is provided by Berry and Linoff (1997, p.327):

> *"Imagine one of the booths at a carnival where you throw balls at a wall filled with holes. If the ball lands in one of the holes, then you have your choice of prizes. Training an SOM is like being at the booth blindfolded and initially the wall has no holes, very similar to the situation when you start looking for patterns in large amounts of data and don't know where to start. Each time you throw the ball, it dents the wall a little bit. Eventually, when enough balls land in the same vicinity, the indentation breaks through the wall, forming a hole. Now, when another ball lands at that location, it goes through the hole. You get a prize at the carnival, this is a cheap stuffed animal; with an SOM, it is an identifiable cluster."*

In general terms, to begin the process an input vector $x(t)$ is submitted to the network and then it is compared with all the model or weight vectors $w_i(t)$. The best-matching unit *i.e.,* the node or also, grid cell, most similar to the input vector as determined by some metric, for instance, Euclidian distance, is called the winner. The model vectors of the winning node (cell), along with its neighbors are changed towards the input vector according to a learning rule. For each input vector (observation) $x(t)$, the winning node and its neighbors are changed to be closer to $x(t)$. Without this adjustment of neighboring weights, the network tends to find as many clusters in the data as there are cells in the grid which would introduce a bias into the cluster detection. The observations are submitted in an iterative fashion until ordered values for the $x_i(t)$ emerge over the grid.

In actual SOM training, a two-dimensional weight vector is assigned to each Kohonen unit. It is the weight space of these vectors that forms the axes of the SOM. However, at the beginning of training, all of the weights are very small with values close to the center of the map. As training progresses and the map evolves, the weights spread out from the center. Eventually the final structure of the map begins to emerge until the weight vectors reflect a grid.

The following training algorithm guides the SOM development (Murray, 1995):

Step 1: Initialize connection weights with small random values.
Step 2: Present an input vector from the bottom layer.
Step 3: Calculate the Euclidian distance between the input vector and its weights, for every Kohonen unit.
Step 4: Select the Kohonen unit with the smallest Euclidian distance and declare it the “winning unit.”
Step 5: Adjust the weights on the winning unit closer to input vector, move the weights of the neighboring Kohonen units slightly less close, move the weights of all other Kohonen units slightly further away.
Step 6: Return to Step 2 with a new input vector.

The purpose of Steps 3 and 4 is to determine a "winning" Kohonen unit. The Euclidian distance (d_t) for each unit is determined by simply taking the absolute value of the difference between the input vector (x_t) and the weight vector (w_t):

$$d_t = // x_t - w_t // \tag{1}$$

The unit with the lowest value of d_t is declared the winner and, as a reward, it has its connection weights adjusted to be closer to the values of the input vector (the first part of Step 5). Therefore the winning unit, in a measurable way, is closest to the input vector and represents the input vector. It is worth noting that the connection weights are *not* multiplied by its inputs, as with other neural networks. They are simply used to reflect the input patterns clustered around a particular Kohonon unit.

During the learning process, changes to the model vectors may take place according to the following equation:

$$w_i(t+1) = w_i(t) + \alpha(t)[x(t) - w_i(t)] \; for \; each \; i \quad N_c(t),$$
$$otherwise \; wi(t+1) = w_i(t), \tag{2}$$

where t is the discrete-time index of the variables, $\alpha(t)$ [0,1] is a scalar that defines the size of the learning step, and $N_c(t)$ defines the neighborhood around the winning cell of the grid. Nodes directly outside of the winner's neighborhood are not adjusted at all, yet nodes a great distance from the winner may be moved further away.

Step 5 also requires that Kohonen units in the "neighborhood" of the winning unit be adjusted as well. The adjustment is to move all of those units' connection weights slightly closer to the values of the input vector. This adjustment is made to preserve the order of the input space - one of the most useful aspects of the SOM. The neighborhood size is determined *a priori* and usually begins large (maybe all adjacent Kohonen units) and as training continues, the neighborhoods and weight adjustments decrease in size.

The last part of Step 5 requires that units outside of the winning unit's neighborhood be adjusted in a fashion that moves all of those units' connection weights slightly farther away than the input vector. In the end, clusters (of input data) similar to each other should be located closer together than dissimilar clusters. This allows for a group of Kohonen units to represent a single cluster of input data, without it the SOM would find as many clusters in data as there are units in the Kohonen layer. For detailed discussion of the above process, the reader is referred to Kohonen's book on the subject matter (Kohonen, 1984).

METHODOLOGY

Data

The data used in this study are found in the Personal Computer Trade Analysis System (PC-TAS) which provided trade information based on reports from the U.N. from the years of 1998-2002. This database is relatively inexpensive ($900.00 for the most recent years) and affordable to a small business. It is derived from COMTRADE, the trade database of the United Nations Statistics Division, covering over 90 percent of world trade. It contains five years of import and export statistics covering over two hundred countries and territories and is broken down into some five thousand product classifications.

The small business for this study is an actual company whose name has been omitted. The business is located in the United States and sells a high quality wood veneer product that covers furniture, built-in shelving and doors. Annual sales figures are not available but the company employs approximately thirty people, including production and administrative staff. Such small businesses are likely to be looking for a different type of export opportunity than a larger or medium size firm. A small marketer often goes where there is less competition in an effort to be a "big fish in a little pond." Therefore, the screening variables for a small business will be slightly different than those of a large firm. Five screening variables were selected from the database:

1. *GDP per capita (2002, $US)* is the gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. GDP or GNP per capita is often used as a screening variable as it gives an economic measure that accounts for the size of the country (Jeanet & Hennessey, 2001; Helsen, Jedidi, & DeSarbo, 1993). It is especially germane here because the firm is attempting to export a high quality product that is priced accordingly. The cost structure of the firm does not permit competition based on price; therefore, it must be a market that recognizes quality and can afford to pay a premium for it.
2. *Five-year Value of Wood Veneer Imports (1998-2002, $US, 000's)* is the total value of wood veneer imported by each potential market. This is an indicator of both market size and accessibility, albeit difficult to know how much of which at this point. Regardless, the numbers provide a measure of which countries are actively importing and how much. By using a five-year total the effects of extremely high or low years can be mitigated.
3. *Compound Annual Growth Rate (CAGR) of Wood Veneer Imports (1998-2002)* calculated by the following formula: CAGR= [the ending value/beginning value] ^ [the number of years] – 1; is the rate at which the imports would have grown, assuming growth at a steady rate. A small firm may be more interested in a market that is relatively small but growing in a healthy or rapid manner rather than a larger absolute value market because it may feel that it could compete more effectively in such a market.
4. *Five-year Value of Wood Veneer Imports from the U.S. (1998-2002, $US, 000's)* is the total value of wood veneer imported by each potential market from U.S. exporters. This is an indicator of both market size and accessibility to U.S. exporters. It is also an indicator of potential U.S. competitors. A large market with a hefty amount of established U.S. exports may not be what a small firm is looking for, even though receptiveness to U.S. wood veneer is indicated. Again, a five-year total was used to mitigate the effects of abnormal years.
5. *Compound Annual Growth Rate (CAGR) of Wood Veneer Imports from the U.S. (1998-2002)* using the same formula as variable three above. Growth in imports from the U.S. represents an increasing market share and potentially increased competition for U.S. marketers; however, a negative growth could indicate just the opposite.

Screening variables were selected based on management objectives in regards to international market operations, which were then adapted to the firm's particular industry and product lines (Douglas, Craig, & Keegan, 1982). These five screening variables generated a short list of foreign markets that are appropriate for further, in-depth, study from this small business. After involved discussions with this firm's top management it was concluded that an ideal candidate would be a market, not large in size but growing at a rapid or healthy rate, where there is little existing U.S. competition, yet the economy is developed enough to contain a segment that recognizes, appreciates and is able to pay for quality.

RESULTS

The Kohonon SOM program used in this study is found in SAS's *Enterprise Miner* release 9.1. Data were submitted on 130 world markets for consideration and the resulting 5 X 5 SOM is included as Table 1. Recall from discussion of the SOM algorithm, countries that are placed in the same cell on the map are deemed most similar when considering all five variables. Countries that are in neighboring cells are deemed slightly less similar across the variables and, the farther apart on the map, the more dissimilar the countries are considered to be.

Table 1: Self-Organizing Map for High Market Screening

(1:1)	(1:2)	(1:3)	(1:4)	(1:5)
BOTSWANA	BAHAMAS	UNTD ARAB EM	QATAR	LUXEMBOURG
DOMINICAN RP	MALTA			NORWAY
JORDAN				SWITZ.LIECHT
KENYA				
LATVIA				
LEBANON				
PAKISTAN				
PARAGUAY				
PERU				
S.AFR.CUS.UN				
THAILAND				
TUNISIA				
ZIMBABWE				
(2:1)	(2:2)	(2:3)	(2:4)	(2:5)
COSTA RICA	ARGENTINA	BRUNEI DAR.	AUSTRALIA	AUSTRIA
CROATIA	AZERBAIJAN	CYPRUS	FINLAND	BELGIUM
CZECH REP	BARBADOS	ISRAEL	ICELAND	DENMARK
HUNGARY	BELARUS	SLOVENIA	IRELAND	SWEDEN
POLAND	COLOMBIA		NETHERLANDS	
ROMANIA	ECUADOR		SINGAPORE	
SLOVAKIA	ETHIOPIA			
TURKEY	GUATEMALA			

Table 1: Self-Organizing Map for High Market Screening

	HONDURAS			
	JAMAICA			
	KYRGYZSTAN			
	NICARAGUA			
	SAUDI ARABIA			
	VENEZUELA			
(3:1)	(3:2)	(3:3)	(3:4)	(3:5)
ARMENIA	BANGLADESH	ANDORRA	FRANCE	JAPAN
BOLIVIA	BRAZIL	BAHRAIN	HONG KONG	UNTD KINGDOM
BURKINA FASO	BULGARIA	GREECE		
GABON	BURUNDI	MALAYSIA		
GHANA	CHILE	MEXICO		
MADAGASCAR	EGYPT	OMAN		
MALAWI	ESTONIA	PORTUGAL		
MOROCCO	FR.POLYNESIA			
NAMIBIA	GAMBIA			
SRI LANKA	GEORGIA			
SUDAN	GREENLAND			
SWAZILAND	INDIA			
TURKMENISTAN	INDONESIA			
UGANDA	IRAN (ISLM.R)			
	KAZAKSTAN			
	MACEDONIA, TF			
	MOLDOVA REP.			
	NEPAL			
	PHILIPPINES			
	RUSSIAN FED			
	SENEGAL			
	SYRIA A. R.			
	TRINIDAD TBG			
	UKRAINE			
	URUGUAY			
(4:1)	(4:2)	(4:3)	(4:4)	(4:5)
ALBANIA	GRENADA	KOREA REP.	CHINA	USA,PR,USVI
COOK ISLANDS	NEW ZEALAND			

Table 1: Self-Organizing Map for High Market Screening				
CUBA				
ERITREA				
GUINEA				
MAURITIUS				
PANAMA				
SOUTH AFRICA				
ZAMBIA				
(5:1)	(5:2)	(5:3)	(5:4)	(5:5)
ALGERIA	EL SALVADOR		ITALY	CANADA
BENIN	LITHUANIA		SPAIN	GERMANY
MONGOLIA				

The first noteworthy item about the map is that most of the countries are on the left side of the map, with far fewer being on the right side. To explain this, as well as the exact placement of countries in the map, it is necessary to examine the map's cell averages for the variables. These are found in Table 2 and when the cell averages are viewed it becomes apparent that as a general rule, countries on the left side have low GDPs per capita, while the countries on the right part have much higher GDPs per capita. Since GDP per capita is an indicator of a market's ability to appreciate and pay for quality wood veneer, the countries on the left side of the map (Columns 1 and 2) can be screened out and then the screening process can be further delved into.

Table 2: Cell Averages of Self-Organizing Map

Row	Column	Five Year Wood Veneer Import Total Value (000s)	CAGR	Five Year Wood Veneer Import Value From U.S. (000s)	CAGR	GDP Per Capita 2002
1	1	13690	0.270976	2064.75	-1	1953.462
1	2	845	-0.07139	280.5	-1	12235.5
1	3	11988	0.752571	714	-1	19000
1	4	1665	-0.34544	123	-1	28715
1	5	48109.66667	0.159866	4112.666667	-0.26384	42717.33
2	1	72664.75	0.164695	6097.375	-0.22675	4612.625
2	2	15767.28571	-0.3248	1916.785714	-0.29253	2410.429
2	3	57239.75	-0.2042	4199.25	-0.07975	13396.5

Table 2: Cell Averages of Self-Organizing Map

Row	Column	Five Year Wood Veneer Import Total Value (000s)	CAGR	Five Year Wood Veneer Import Value From U.S. (000s)	CAGR	GDP Per Capita 2002
2	4	50761	-0.02172	7314.833333	-0.00042	25598
2	5	226024.25	0.09756	23403.25	-0.16753	27044.75
3	1	1759.428571	0.496666	18.92857143	0.023243	962.9286
3	2	18571.48	-0.0863	3036.84	0.037029	1533.44
3	3	87892.14286	0.232191	28910.85714	0.020877	10289.86
3	4	369296	0.024396	52502	-0.02053	23602
3	5	408648	-0.04153	85989	-0.22389	28813
4	1	7762.555556	0.86484	2331.444444	0.02898	2324.667
4	2	3473	0.925417	470.5	0.802594	9389
4	3	368656	0.252611	63064	0.203178	-1.79E-13
4	4	735140	-0.12522	71178	0.176139	1001
4	5	2165705	0.062996	-2.28E-12	-8.67E-18	36004
5	1	1036	3.4766	.	.	861.3333
5	2	17023.5	0.336978	253.5	2.264599	3122.5
5	3	.	.	.	.	.
5	4	908652.5	0.046395	192150	0.049544	18492.5
5	5	1053879	0.006645	543189.5	-0.01717	23860

To examine the remaining cells from top to bottom, notice Cell 1:3 and Cell 1:4 contain one country each, the United Arab Emigrates and Qatar, respectively. These markets are relatively small and have high GDPs per capita. One problem is that five-year calculated average growth rates are of no meaning here because not enough years of data are available. U.S. exporters have a very small percentage of the wood veneer import market for the countries, six percent in United Arab Emigrates (*Five-year value of wood veneer imports from the U.S. /Five-year value of all wood veneer imports*) and seven percent in Qatar. These appear to be markets worthy of further investigation.

Moving further to the right (Cell 1:5) three Bavarian countries are found that contain slightly more developed, larger, markets. The markets have a good annual growth rate of veneer imports, 16 percent and a very high GDP per capita. All the while imports of U.S. wood veneer products are flat and represent nine percent of the market. Even though there is more U.S. competition here, these markets also should be researched further, with particular attention paid to explaining why U.S. exporters are not participating in this market's growth.

Upon further review, the countries in the middle part of the map (Cells 2:3, 3:3 and 4:3) have GDPs per capita that remove them from further consideration. The markets of Cell 2:4 are small, with flat growth and a healthy GDP per capita. U.S. firms are more established here with14 percent of this import market.

Cell 2:5 represents a much more developed market for veneer imports (about four times as large as Cell 2:4). The growth in wood veneer imports is a healthy 9 percent per annum, but the growth in imports of it from the U.S. is flat, although imports from the U.S. represent 10 percent of the market. Regardless, five-year total imports from the U.S. of $23.4 million likely means much more U.S. competition than Cell 2:4 with a five-year total of $7.3 million.

Moving towards the lower part of the map the wood veneer import markets become quite large and this often does not bode well for a small firm. Cell 3:4 and 3:5 markets are each about seven to eight times as large as Cell 2:4. There is also well established U.S. competition in these markets making them undesirable. The market in Cell 4:4 (China) is enormous; the GDP per capita is very low as well. This screening tool would indicate no further investigation is justified. However, China's rapid growth and population make it enticing. A first-hand knowledge of China's veneer technology (the ability to manufacture veneer one-half the thickness of U.S. veneer; therefore, using one-half the wood product) plus, the price oriented, low quality focus of its present construction boom confirm that it should indeed be screened out. Finally, the markets in Cells 5:4, Italy and Spain, and 5:5, Canada and Germany, (Cell 4:5 is the U.S., Puerto Rico and the U.S. Virgin Islands combined) are also very large and well developed. Furthermore, U.S. exporter market share ranges from 21 percent to 52 percent, again unacceptable competition.

CONCLUSION

The purpose of this study is to demonstrate a low cost, artificial intelligence approach that small businesses could employ in their market screening efforts. This AI approach is different than a standard statistical approach in that it uses a type of artificial neural network, a self-organizing map, to build a two dimensional map out of data containing five variables. The results of the map are readily interpreted by management and yield five primary along with ten secondary markets for further consideration.

The countries that come closest to the ideal market candidate may be found in Cells 1:3, 1:4 and 1:5. These appear to be new developing markets and there are not enough years of data to establish a growth trend. Regardless, the fact that they are small, with a small U.S. presence and a high GDP per capita are enough to warrant further investigation. Cell 1:5 meets the criteria as well. It contains small markets with a healthy growth of wood veneer imports, high GDP per capita and not much U.S. competition.

Secondary markets would be found in Cells 2:4 and 2:5. These should be explored if none of the primary markets are found to be acceptable or if the firm wants to expend the money to broaden its investigation. Cell 2:4 could probably be considered a primary market except for the fact that imports do not appear to be growing. Other than that, it is a small market with a small percentage of imports being from the U.S. and it has a high GDP per capita. Cell 2:5 on the other hand, has high growth and good GDP per capita but it is a much larger market with established U.S. competition. It would likely be a more difficult market to penetrate.

The SOM process screened out 115 markets and created a map that was easily understood by management. SAS software was used for the study; but, there are good neural network software packages containing SOMs that are not as complex and are much less expensive - some can be purchased for a few hundred dollars. Such software, combined with the purchase of the database, creates an inexpensive global market screening methodology that is available to small businesses.

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SOURCES OF ADVICE IN ENTREPRENEURSHIP: GENDER DIFFERENCES IN BUSINESS OWNERS' SOCIAL NETWORKS

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ABSTRACT

Access to resources, particularly sources of information and advice, is highly important to start-up companies. Men have traditionally enjoyed stronger formal networking positions than have women because they have more often worked in managerial and executive positions before starting businesses. Informal social networks are often sex-segregated as well. Whereas men are more likely to identify their most important supporters as lawyers, accountants, and other professionals, with spouses second, women tend to say their spouses are their most important supporters, followed by close friends (Hisrich & Brush, 1986). The result is that women entrepreneurs are often at a disadvantage in terms of their social networks and the resources, information, and advice they can obtain through them. To examine this issue more closely, this study analyzes data from the European Union regarding business owners' reported sources of advice. The results show that women were more likely than men to name friends and family as a source of advice. On the other hand, men were more likely than women to name professional acquaintances and professional consultants as sources of advice. This difference could have implications for business performance as the information acquired from informal sources (family and friends) is not likely to be as useful as that obtained from more formal sources such as professional acquaintances and consultants.

INTRODUCTION

Entrepreneurs are, to some extent, dependent on their networks of personal relationships when making decisions and solving problems (Taylor & Thorpe, 2004). Networks provide business owners with direct access to the resources necessary to establish and grow a business, in addition to indirect access to third parties and their resources. In certain industries, such as creative and professional business services, networks and contacts have been found to provide an indication of an entrepreneur's standing and reputation (Silversides, 2001).

Men have traditionally had different networks from women, with men's contacts being more likely to produce information important to business success (Aldrich, 1989). This study examines data from the European Union regarding business owners' reported sources of advice, comparing the answers of men and women. The following sections provide a brief literature review on networks, followed by the results of the study, and analysis of the data.

SOCIAL NETWORKS AND KNOWLEDGE ACQUISITION

Social networks are becoming increasingly important as they provide firms with access to markets, ideas, information, advice, business opportunities, and other resources (Birley, 1985; Farr-Wharton & Brunetto, 2007; Gulati, Nohria & Zaheer, 2000; Hoang & Antoncic, 2003). One result of networking is the development of social capital, which essentially consists of the "resources individuals obtain from knowing others, being part of a network with them, or merely being known to them and having a good reputation" (Nahapiet & Ghoshal, 1998, p. 107). The end result is that networks are related to the survival and growth of new firms (Bruderl & Preisendorfer, 1998).

Granovetter (1973) classified network ties as either weak or strong based on the frequency of contact, which was itself associated with reciprocity. Relationships with friends and family were categorized as strong ties because of frequent contact and emotional closeness. In contrast, ties between business associates, consultants, and other such contacts were classified as weak ties because of less frequent contact. However, Granovetter also argued that "the strength of weak ties" was related to diversity in sources of knowledge and advice in that "individuals with few weak ties will be deprived of information from distant parts of the social system and will be confined to the provincial news and views of their close friends" (1973, p. 106). Frequency of contact is not sufficient as the sole measure of network quality, however, because the exchange of useful information is not guaranteed--there is only the opportunity for exchange (Frenzen & Nakamoto, 1993, p. 369; Zhao & Aram, 1995). For example, a strong tie with a friend with whom one interacts frequently is not necessarily useful in a business setting, whereas a weak tie with a business consultant would be expected to yield more useful information.

The degree of diversity in a network can be referred to as the network's range (Burt, 1982; Zhao & Aram, 1995). A network with a large range would likely include both informal and formal sources. Informal sources include family, friends, professional acquaintances, and business contacts, whereas formal sources include banks, business consultants, accountants, lawyers, chambers of commerce, small business development centers, etc. (Birley, 1985; Cooper, et al., 1989; Littunen, 2000; Watson, 2007). Although the concepts are not exactly the same, people often have stronger ties with informal sources, and weaker ties with formal sources because the frequency of contact is usually lower with formal sources.

Nebus (2006) contends that the most favorable situation is one in which social contacts also happen to be experts because social contacts are more likely to willingly communicate and are easy to access. In contrast, experts are more likely to have valuable information, but are more difficult to access. A business owner might need to an "exploration" strategy in order to discover and contact experts with whom he or she does not already have a relationship, whereas relying on already established contacts could be considered an “exploitation” strategy (March, 1991). Naturally, the exploitation strategy is likely to be less costly in terms of time, effort and other resources. There is a trade-off to be made between the quality of information and the cost (including time) of obtaining it (Haas & Hansen, 2005; Hansen & Haas, 2002).

Networks that include people who are not well-acquainted with each other usually provide a wider variety of resources, viewpoints, ideas, and information than less diverse networks composed mostly of family and friends who know each other (Smeltzer, Van Hook & Hutt, 1991). Founders with varied networks of contacts are in a better position to gain information to help them surmount business development problems, thus shaping their own survival and growth (Aldrich, 1989; Burt, 1982; Low & MacMillan, 1988; Zhao & Aram, 1995). Kemelgor & D’Souza found no statistically significant difference between the networks used by serial and novice entrepreneurs in that both relied on a mixture of strong and weak ties.

Using data from a survey conducted by the Australian government of employers with fewer than 200 workers, Watson (2007) found that banks and accountants were the primary source of advice. However, Smeltzer, Fann and Nikolesean (1988) found that small business managers more often used informal than formal sources. Bruderl and Preisendorfer (1998) found that support from strong ties was more important to start-ups’ success than weak ties. Similarly, smaller ventures have been found to use friends and family more, but banks less, than larger ventures do (Cooper et al., 1989). Birley (1985) found that the type of source accessed was related to the resources desired. When assembling raw materials/supplies, equipment, location/premises, and employees, business contacts were used most. Family and friends were also important for assembling local resources (location/premises and employees). Once these resources were obtained, business owners sought resources from banks. However, Birley’s study examined resource access, rather than access to sources of advice, in which case banks would rationally be the primary sources.

Women have customarily been at a disadvantage in terms of formal and informal networks as men and women tend to develop different networks (Burke, Rothstein, & Bristor, 1995; Ibarra, 1993). Both men and women tend to interact with people of the similar gender, and women tend to be especially adept at building informal networks with other women (Brass, 1985, p. 339; Burke et al., 1995 Sandberg, 2003). Klyver and Terjesen (2007) found that female entrepreneurs had a significantly lower proportion of males in their networks during the “discovery” and “emergence” stages of business development, although not in the “young” and “established” stages.

Men have traditionally enjoyed stronger networking positions that are more beneficial to business start-ups (Aldrich, 1989). Many occupations and fields of study are still dominated by men, decreasing the chances that a woman will have easy access to these networks. Given that most entrepreneurs start their businesses after they have worked for several years, rather than immediately after finishing high school or college, the early choice of majors and jobs can influence network structures for many years (Aldrich, 1989). In addition, bankers, lawyers, accountants, consultants, and other formal sources of advice tend to be men (Smeltzer & Fann, 1989). Given the above findings regarding the tendency for the people to interact most with people of the same gender, this is likely to decrease women's chances for obtaining advice from such sources without paying for it.

Informal social networks, which often lead to business contacts and advisors, are also often sex-segregated, putting women at a disadvantage in this area as well (Aldrich, 1989; Brush, 1997; DeWine & Casbolt, 1983; Fielden, Davidson, Dawe & Makin, 2003). Hisrich and Brush (1986) found that men claimed advisors such as lawyers and accountants among their most important supporters, with spouses second. In contrast, women reported spouses to be their most important supporters, followed by close friends. In a related study (Smeltzer & Fann, 1989), women were found to be more likely to use other women as information sources, restricting the variety of information that can be obtained from the network. Similarly, many volunteer associations have been found to be dominated by a single sex, limiting women's access to these networks (McPherson & Smith-Lovin, 1986). The result of the difference in experiences and both occupational and informal social structures is that "division and barriers within these spheres significantly limit the reach and diversity of women's networks" (Aldrich, 1989, p. 125). As Huber (1991, p. 91) stated regarding learning in organizations, "Organizations do not begin their lives with clean slates."

These networks and sources of knowledge are important to businesses because the development of absorptive capacity begins with knowledge acquisition in that prior knowledge is necessary in order to identify and assimilate new knowledge (Cohen & Levinthal, 1990; Gray, 2006). Absorptive capacity is essential to the creation of entrepreneurial performances as it pertains to a firm's overall capacity for learning, integrating and disseminating new knowledge internally, and then exploiting this knowledge to enhance performance (Cohen & Levinthal, 1990; Gray, 2006; Kemelgor & D'Souza, 2009; Teece et al., 1997; Wu & Young, 2007; Zahra & George, 2002). In fact, Gray (2006, p. 349) contends that the propensity to network is a pre-requisite to "the effective knowledge management that underpins the construction of entrepreneurial absorptive capacity." If an entrepreneur's network is limited to a group of people who cannot provide valuable information about business, the performance of his or her firm is likely to suffer in comparison to that of a company whose owner is able to take advantage of a diverse, high quality network.

It is clear from the literature that a business owner's network can influence the performance of his or her business (Bruderl & Preisendorfer, 1998). The quality of information obtained from different sources is likely to vary based on the expertise of the given knowledge source. If men rely on networks from which they receive more useful information (compared to the networks used by women), the performance of women's and men's business are likely to vary accordingly. This study examines the issue of gender differences in networks by examining data from the European Union regarding the sources of advice used by men and women business owners.

METHODOLOGY, RESULTS AND ANALYSIS

The data for this study were gathered from Eurostat's metadata database (Eurostat, 2009). The target population of this 2005-2006 survey consisted of people who had started businesses in 2002 and were still personally managing them in 2005. The countries included in the "European aggregate based on available data," were the Czech Republic, Denmark, Italy, Lithuania, Luxembourg, Austria, Slovakia, Sweden, and Bulgaria. Romania was originally included in this data set, but is not included in this study because of incomplete data. As shown in Table 1, a total of 287,837 people participated, with 77,140 women and 210,700 men.

Table 1: Study Participants by Gender and Country

Country	Men	Women
EU (Total)	210700	77140
Austria	9845	3772
Bulgaria	11046	7602
Czech Republic	45338	17063
Denmark	7357	1884
Italy	108673	36652
Lithuania	1995	698
Luxembourg	1062	239
Slovakia	15414	6608
Sweden	9970	2622

Business owners were asked to indicate if they had used each of the sources of advice listed in the survey. Following Birley (1985), Cooper, Woo, and Dunkelberg (1989), Littunen (2000), and Watson (2007), these sources were categorized as informal sources (family and friends; professional acquaintances), formal sources (professional consultants; training course for entrepreneurs; organizations specializing in business start-ups; unemployment administrations; financial institutions), and no sources (no access to relevant sources; no need for advice).

A ranking of all the sources used by EU men and women in this study is provided in Table 2, and the top three sources used in each country are shown in Table 3. The percentages show the proportions of men and women who reported obtaining relevant advice from each source. Ranking was done by placing the sources of advice in order based on the percentages of people claiming they used the source. This allowed for easier analysis between countries with very different percentages. For example, only 16.9% of Danish men used family and friends as a source of advice, but this was ranked second with "no advice needed" (28.5%) being the most common answer. Professional acquaintances (14.5%) ranked third. In contrast, 31.3% of men in the Czech Republic stated they needed no advice, but this "source" was ranked third behind professional acquaintances (32.3%) and family and friends (43.4%).

Table 2: Ranking of Overall Sources of Advice Used (EU)

	Men		Women	
Rank	Source	Proportion	Source	Proportion
1	Professional Acquaintances	45.2%	Family and Friends	42.9%
2	Family and Friends	34.6%	Professional Acquaintances	35.8%
3	Consultants	22.0%	Consultants	19.9%
4	No Need for Advice	20.4%	No Need for Advice 18.0%	
5	No Access	14.2%	No Access	13.5%
6	Start-up Organizations	8.1%	Start-up Organizations	8.0%
7	Training	4.7%	Training	7.1%
8	Unemployment Administration	3.1%	Unemployment Administration	3.9%
9	Financial Institution	1.6%	Financial Institution	1.7%

Table 3: Ranking of the Top Three Sources of Advice Used

	Men		Women	
Austria				
1	Professional Acquaintances	37.2%	Family and Friends	42.4%
2	Start-up Organization	34.9%	Start-up Organization	39.1%
3	Family and Friends	32.8%	Professional Acquaintances	28.8%
Bulgaria				
1	Family and Friends	62.4%	Family and Friends	71.7%
2	Professional Acquaintances	34.2%	Professional Acquaintances	31.5%
3	No Advice Needed	19.3%	No Advice Needed	16.0%
Czech Republic				
1	Family and Friends	43.4%	Family and Friends	45.6%
2	Professional Acquaintances	32.3%	No Advice Needed	29.8%
3	No Advice Needed	31.3%	Professional Acquaintances	27.1%
Denmark				
1	No Advice Needed	28.5%	Family and Friends	25.4%
2	Family and Friends	16.9%	No Advice Needed	20.4%

Table 3: Ranking of the Top Three Sources of Advice Used				
	Men		Women	
3	Professional Acquaintances	14.5%	Professional Acquaintances	10.7%
Italy				
1	Professional Acquaintances	54.4%	Family and Friends	50.9%
2	Professional Consultants	36.5%	Professional Acquaintances	42.5%
3	Family and Friends	36.2%	Professional Consultants	34.9%
Lithuania				
1	Family and Friends	56.9%	Family and Friends	66.5%
2	Professional Acquaintances	41.2%	Professional Acquaintances	38.3%
3	No Advice Needed	22.8%	Professional Consultants	25.3%
Luxembourg				
1	Professional Consultants	38.3%	Family and Friends	48.1%
2	Professional Acquaintances	36.8%	Professional Acquaintances	32.6%
3	Family and Friends	28.8%	Professional Consultants	23.8%
Slovakia				
1	Professional Acquaintances	47.2%	Family and Friends	38.5%
2	Family and Friends	42.6%	Professional Acquaintances	37.8%
3	No Advice Needed	23.0%	No Advice Needed	22.4%
Sweden				
1	Professional Acquaintances	42.1%	Family and Friends	53.1%
2	Family and Friends	42.0%	Professional Acquaintances	34.7%
3	No Advice Needed	20.0%	Start-up Organization	18.5%

Analysis of the overall data clearly shows that both women and men used informal sources of advice more often than formal sources. Family and friends and professional acquaintances were in the top three sources for men and women in all countries. In fact, friends and family were the top ranked source of advice for women in every country in the study, and for men in Bulgaria, the Czech Republic, and Lithuania. Professional acquaintances were the most common source of advice for men in five of the nine countries and for men in the EU as a whole.

Although the two informal sources were ranked in the top three for every group, professional consultants and organizations that specialize in helping start-ups were in the top rankings for Austria (start-up organizations ranked second for both men and women), Italy (professional consultants ranked second for men and third for women), Luxembourg (professional consultants ranked first for men and third for women), Lithuania (professional consultants ranked third for women), and Sweden (start-up organizations ranked third for women). These were the only formal sources that were found in the top rankings for the EU as a whole or for any of the individual countries.

"No need for advice" and "no access" were ranked fourth and fifth for the EU. "No need" was in the top three for Bulgaria, the Czech Republic, Denmark, Slovakia, and for men in Lithuania and Sweden. It was, in fact, the next most popular source after family and friends and professional acquaintances (informal sources) and was therefore included in the top three rankings more often than consultants and organizations that assist start-ups.

Tables 4, 5 and 6 present the percentages of men in women in each country using informal sources (family and friends; professional acquaintances), formal sources (professional consultants; training course for entrepreneurs; organizations specializing in business start-ups; unemployment administrations; financial institutions), and no sources (no access to relevant sources; no need for advice). Chi-square analyses were performed to determine if there was an association between gender and these reported sources of advice. The p value is shown in the tables to indicate statistically significant association between gender and use of a given source of advice.

Table 4: Informal Sources of Advice By Gender and Country

Country	Family and Friends	Professional Acquaintances
EU		
-Men	34.6%	45.2%
-Women	42.9%	35.8%
-p<	.001	.001
Austria		
-Men	32.8%	37.2%
-Women	42.4%	28.8%
-p<	.001	.001
Bulgaria		
-Men	62.4%	34.2%
-Women	71.7%	31.5%
-p>	.001	.001
Czech Republic		
-Men	43.3%	32.3%
-Women	45.6%	27.1%
-p<	.001	.001
Denmark		
-Men	16.9%	14.5%

Table 4: Informal Sources of Advice By Gender and Country		
Country	Family and Friends	Professional Acquaintances
-Women	25.4%	10.7%
-p<	.001	.001
Italy		
-Men	36.2%	54.4%
-Women	50.9%	42.5%
-p<	.001	.001
Lithuania		
-Men	56.9%	41.2%
-Women	66.5%	38.3%
-p<	.001	.186
Luxembourg		
-Men	28.8%	36.8%
-Women	48.1%	32.6%
-p<	.001	.254
Slovakia		
-Men	42.6%	47.2%
-Women	38.5%	37.8%
-p<	.001	.001
Sweden		
-Men	42.0%	42.1%
-Women	53.1%	34.7%
-p<	.001	.001

Table 5: Formal Sources of Advice By Gender and Country					
Country	Prof Consultants	Training Course	Start-up Orgs	Unemployment Admin	Financial Instit
EU					
-Men	22.0%	4.7%	8.1%	3.1%	1.6%
-Women	19.9%	7.1%	8.0%	3.9%	1.7%
-p<	.001	.001	.233	.001	.624
Austria					

Table 5: Formal Sources of Advice By Gender and Country					
Country	Prof Consultants	Training Course	Start-up Orgs	Unemployment Admin	Financial Instit
-Men	17.7%	11.7%	34.9%	4.5%	4.8%
-Women	16.4%	9.2%	39.1%	7.3%	6.0%
-p<	.068	.001	.001	.001	.003
Bulgaria					
-Men	8.5%	1.8%	0.8%	0.7%	2.1%
-Women	5.5%	1.4%	0.9%	1.1%	1.3%
-p<	.001	.090	.920	.003	.001
Czech Republic					
-Men	1.9%	3.9%	0.9%	2.0%	1.8%
-Women	2.0%	5.3%	0.7%	2.8%	2.0%
-p<	.617	.001	.013	.001	.086
Denmark					
-Men	10.8%	6.3%	0.7%	0.9%	0.8%
-Women	9.4%	9.1%	0.6%	0.6%	0.8%
-p<	.074	.001	.730	.334	.920
Italy					
-Men	36.5%	3.5%	10.7%	4.0%	0.8%
-Women	34.9%	6.3%	10.4%	4.8%	0.6%
-p<	.001	.001	.109	.001	.005
Lithuania					
-Men	22.4%	6.4%	5.2%	1.8%	10.8%
-Women	25.3%	5.9%	5.9%	1.1%	11.6%
-p<	.118	.708	.572	.313	.624
Luxembourg					
-Men	38.3%	6.5%	9.3%	2.3%	12.0%
-Women	23.8%	5.4%	8.8%	0.0%	13.4%
-p<	.001	.647	.888	.617	.033
Slovakia					
-Men	4.4%	7.1%	1.0%	2.5%	1.3%
-Women	7.2%	17.8%	1.8%	3.6%	2.8%
-p<	.001	.001	.001	.001	.001

Table 5: Formal Sources of Advice By Gender and Country					
Country	Prof Consultants	Training Course	Start-up Orgs	Unemployment Admin	Financial Instit
Sweden					
-Men	7.2%	11.4%	11.1%	3.6%	5.2%
-Women	9.8%	15.8%	18.5%	4.7%	3.1%
-p<	.001	.001	.001	.006	.001

Table 6: No Sources of Advice By Gender and Country		
Country	No Access to Relevant Advice	No Need for Advice
EU		
-Men	14.2%	20.4%
-Women	13.5%	18.0%
-p<	.001	.001
Austria		
-Men	5.5%	25.1%
-Women	3.9%	22.1%
-p<	.001	.001
Bulgaria		
-Men	6.5%	19.3%
-Women	7.3%	16.0%
-p<	.045	.001
Czech Republic		
-Men	18.4%	31.3%
-Women	14.8%	29.8%
-p<	.001	.001
Denmark		
-Men	6.7%	28.5%
-Women	4.4%	20.4%
-p<	.001	.001
Italy		
-Men	16.3%	14.6%
-Women	22.5%	12.2%

Table 6: No Sources of Advice By Gender and Country		
Country	No Access to Relevant Advice	No Need for Advice
-p<	.001	.001
Lithuania		
-Men	12.8%	22.8%
-Women	16.2%	19.4%
-p<	.029	.076
Luxembourg		
-Men	6.8%	19.8%
-Women	11.7%	20.5%
-p<	.014	.863
Slovakia		
-Men	7.9%	23.0%
-Women	8.3%	22.4%
-p<	.315	.380
Sweden		
-Men	5.8%	20.0%
-Women	6.3%	10.1%
-p<	.377	.001

Consistent with previous research (Aldrich, 1989; Hisrich & Brush, 1986), there was a statistically significant association between gender and source of advice in that women were more likely than men to use family and friends as a source of advice. A detailed analysis of the different countries included in the study and the tables above show that Bulgarian and Lithuanian business owners, especially women (71.7% and 66.5%), were the most likely to receive advice from friends and family, while Danish men (16.9%) and women (25.4%) were the least likely to use this source. At 62.4%, Bulgarian men's use of family and friends was over 5% higher than Lithuanian men's (56.9%), which was the next highest. In contrast, Danish men's use of family and friends was barely half as much as Austrian's men's (32.8%), which (except for Danish women) was the next lowest proportion using family and friends. Slovakian women's use of family and friends (38.5%) was second lowest, with only 25.4% of Danish women using this source.

Slovakia was the only country in which a higher proportion of men (42.6%) than women (38.5%) used the advice of family and friends, although, as shown in Table 2, family and friends ranked first for women and second for men (professional acquaintances was first among men with 47.2%). The largest difference between the sources used by men and women was found in

Luxembourg, with 48.1% of women but only 28.8% of men using family and friends as a source of advice. Italy also showed large differences in men's and women's use of family and friends (50.9% of women; 36.2% of men), where men used more professional consultants (36.5%) and professional acquaintances (54.4%).

Men were generally more likely than women to use professional acquaintances as a source of advice, with only Lithuania and Luxembourg not showing a significant association between gender and this source of advice. Lithuanian men and women both ranked family and friends first, with professional acquaintances second. Men from Luxembourg were the only ones to use professional consultants (38.3%) more than any other source, and both women and men ranked professional acquaintances second (36.8% for men; 32.6% for women). With 54.4% of Italian men and 42.5% of Italian women using professional acquaintances, business owners of both genders in this country were more likely than their counterparts in other countries to use this source of advice, but this country also showed the largest difference (12%) between genders. In contrast, only 14.5% of Danish men and 10.7% of Danish women used this source.

Training courses, unemployment administrations, and financial institutions were not used extensively. However, training courses were popular with Slovakian women (17.8%), Austrian men (17.7%) and women (16.4%), Swedish women (15.8%) and men (11.4%), and Danish women (9.1%). An association between gender and sources of advice (training course) was found for each of these countries, as well as for the Czech Republic and Italy, with women (except in Austria) being more likely to have used this source. However, as shown in Table 3, none of these were listed in the top three sources of advice for any of the groups.

A significant association was found between gender and the use of the unemployment administration in six of the eight countries, with women always being more likely to use this source. However, even among Austrian women, the group that most often used this source, only 7.3% received advice from the unemployment administration. Austrian men (4.5%) were also the most likely among men to use this source. Not a single one of Luxembourg's 239 women reported using this source.

Women (12.0%) and men (11.6%) in Luxembourg were, in contrast, the most likely to use financial institutions. Lithuanian women (11.6%) and men (10.8%) were also more likely than people in other countries to use this source. There was a statistically significant association between gender and use of financial institutions as a source of advice in Luxembourg, but not in Lithuania.

There was a statistically significant association between gender and "no access" in seven of the nine countries plus the EU overall. However, of these eight, half showed women and half showed men being more likely to have no access to relevant advice. Closer analysis shows that the larger gender differences were found in countries where women were likely to say they had no access. For example, in Italy, 22.5% of women, compared to 16.3% of men, reported no access, and in Luxembourg 11.7% of women and 6.8% of men had no access. The highest proportion of men, as well as the largest gender difference, was in the Czech Republic with 18.4% for men and 14.8% for women.

There was also a significant association between "no need for advice" and gender in six countries plus the overall EU, with men always more likely to state they needed no advice. In fact, as shown in Table 3, "no need" was ranked in the top three for six (men) and four (women) of the nine countries. The largest gender differences were seen in Sweden (20.0% of men, 10.1% of women) and Denmark (28.5% of men, 20.4% of women). Business owners in the Czech Republic were the most likely to say they needed no advice (31.3% of men, 29.8% of women), followed by those in Denmark, Austria (25.1% of men, 22.1% of women), and Slovakia (23.0% of men, 22.4% of women). Italians (14.6% of men, 12.2% women) were the least likely to report needing no advice.

DISCUSSION AND CONCLUSIONS

Informal sources of advice were clearly the most common for women and men, with women most often using family and friends, and men using professional acquaintances, and to a lesser extent, family and friends. These results are consistent with previous research showing small business owners use informal sources, especially family and friends, more often than formal sources, while larger businesses use more formal sources, namely, banks (Cooper et al., 1989; Smeltzer, et al., 1988). This study did not control for size, although the vast majority of participants indicated that they employeed fewer than 10 people. Future research should include firm size in order to determine if these relationships hold.

The results of this study are also consistent with earlier findings by Hisrich and Brush (1986) which showed that women's families (spouses) and friends were their most important supporters, while men's were professional advisors such as lawyers and accountants, with spouses coming in second. In this study, family and friends (42.9%) were EU women's most commonly cited source, followed by professional acquaintances (35.8%) and professional consultants (19.9%). Although men also placed professional consultants third (22.0%), family and friends (34.6%) placed second to professional acquaintances (45.2%). This may also lend support to Aldrich's (1989) contention that men have formal and informal networks that are stronger (provide better information) than women's. However, given that all participants were successful in terms of firm survival, business owners may have drawn upon the sources that worked best for them. This would follow findings by Bruderl and Preisendorfer (1998) that strong tie support (typically from informal sources) was more important to the success of new firms than support from weak ties. The overall proportions are similar to the 35% of Australians in Watson's (2007) study who reported "accessing" friends and family in their networks. Women in this study may have used family and friends because they did not have professional acquaintances from whom they could easily obtain advice. The availability of friends and family, however, may have kept many women from answering that they had no access to advice.

The frequent use of informal sources (by both sexes) instead of formal sources may also be related to the ease of accessing these sources. Hardy (1982) found the ease of accessing a source ("how easily the channel can be used to access information you want") was twice as important as the value of the information provided by the source ("how much useful information the channel provides") in determining the frequency of use of a contact. Hardy concluded that people perform a cost-benefit analysis in which they compare the effort (cost) of accessing a source with the benefits obtained from accessing it. Being as people meet more frequently with informal sources with whom they have strong ties, accessing these informal sources would be easier, making it "not worth the cost" of expending effort to access formal sources, even though the information provided might be more relevant and useful (Henson & Haas, 2002; March, 1991; Nebus, 2006). For men, it may be fairly easy to communicate with professional acquaintances if both parties are members of formal or informal networks and thus meet regularly, thus reducing their "cost" and encouraging them to access these sources. For women without such networks, the cost of seeking out such sources would be higher, thus improving the relative cost/benefit ratio for friends and family who do not have as useful information, but are easy to access.

With approximately one-fifth of all respondents reporting that they did not need any advice, and this "source" being in the top three sources for men in six countries and women in four countries, a significant portion of people clearly believe they do not need advice. While a business owner that who seeks advice from family and friends and professional acquaintances may also seek information from formal sources, people who do not believe they need advice are highly unlikely to seek it out from others, especially from formal sources that are more difficult (cost more) to access. Future research should further investigate the data to determine if those who stated they need no advice had more experience, education or other qualifications than those that did use at least one source of advice. Organizations and professionals which provide counseling to business owners will find it difficult to serve those who do not recognize a need for advice.

Except for in Austria, where over one-third of the participants reported receiving advice from organizations specializing in start-ups, the use of this source was fairly low (overall average of 8% for both sexes). Past studies (Humphreys & McClung, 1991; Schwartz, 1976) have shown that the vast majority of business failure failures in the United States could be attributed to a lack of experience and management skills. Expert advice and business support provided by organizations such as business incubators could substitute for direct experience and help business owners acquire the tacit knowledge shared by other managers in the industry (Aldrich, Reese, & Dubini, 1989; Miller, Besser & Riibe, 2006/2007). With only 8% reporting that they received advice from such an organization, and 14% (14.2% of men, 13.5% of women) stating that they had no access to any relevant advice, incubators and other organizations that help start-ups appear to be needed. It is also possible that these organizations are available, but need to promote themselves better to the people who do not have access to other sources of advice so that potential and new entrepreneurs are aware of the support that is offered. Given that women were more likely (7.1% vs. 4.7%) to have taken a training course for entrepreneurs, and less likely (18.0% vs. 20.4%) to state that they needed no advice, women founders of new businesses might be more willing to use incubators if they were available and women were aware of their services. Because one of the primary functions of an incubator is to mediate between tenants and the outside world and thereby help incubatees develop stronger business networks (Bergak & Norrman, 2008; Lender, 2003), incubators may also help to reduce the differences in women's and men's network structures (Robinson & Stubberud, 2008), which could then lead to improved performance.

The sources of advice used by new firms' founders and their overall social networks are very important for providing resources and knowledge for businesses. This learning strengthens a firm's absorptive capacity, which is, in turn, related to improved performance (Cohen & Levinthal, 1990; Gray, 2006). Therefore, network ties can influence the company's success. Women, however, often have a decreased level of access to sources from which they can obtain useful information and resources (Aldrich, 1989). As shown in this study of successful new business owners in the European Union, women are more likely than men to use friends and family as advisers, whereas men are more likely to use professional acquaintances. These results may, in future work, be used to help further explain differences in business performance.

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IN THE CONTEXT OF TOTAL QUALITY MANAGEMENT, QUALITY COSTS AND EFFECTS ON FINANCIAL DECISIONS: A RESEARCH IN ÇORUM'S ENTERPRISES

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ABSTRACT

In last years, with turn to quality produce, investigate that necessary of quality produce and producing quality product cost is going up in total cost. Certainly all this costs' supplement are growing up in total cost day by day, and they reach rather total at least. But, our accounting system being in force is not including quality costs. Quality costs' dimensions reaching in total cost, show us that there must be special studies on quality costs. In this case, we study on quality cost and we try to bring some offer about accounting of quality costs in our accounting system.

In this study, different method to measure the quality costs are investigated, their deficiencies are pointed out and analyses were made through activity based costing which is used to minimize these deficiencies with other techniques. This research deals with the managerial uses of accounting information for quality improvement purposes. Quality cost data are part of the information sources adopted by accountants to help managers make better quality-related decisions.

Key Words: Quality, Total Quality, Quality Costs, Accounting Of Quality Costs

INTRODUCTION

The most important managerial criteria in supply chains are how to manage product, information and cash flows, and how to maximize profits by either increasing the revenue or decreasing the costs. Although the maximum benefits can be achieved if everyone follows the central planner's suggestions; unfortunately, the individual maximum profits may not be guaranteed.

Rapid and important changes in economical and technical fields happened in the second half of the 20th century carried the competition to global dimension. This process increased the importance of quality and however, brought many new problems about quality. As the importance of the quality increases, enterprises began to adopt total quality management philosophy. Part of this management type is quality cost and the measurement of quality cost. Quality cost information can be used to show the real opportunities for true activities and to obtain promotion for developing quality. For this reason, measurement of quality cost, preparing reports and make them accountable are necessary for the effectiveness of quality systems.

Measuring Quality Costs has been emphasized as an important part of quality improvement efforts since the early 1950's. A chapter on Quality Costs seems to be almost compulsory in every book pertaining to Total Quality Management, Business Process Improvement, and similar topics. There is no doubt that measuring Quality Costs is useful in order to direct improvement efforts, the problem is that the concept is not as valid today as it used to be. While customer requirements and production systems have changed considerably during the last decades, Quality Cost measurement is advocated nearly the same way as it was forty years ago.

Companies can lose money because they fail to use significant opportunities to improve their costs of quality. Most cost accounting data are not revealed to the public and are rarely exchanged among businesses, and there is no known study testing the effect of organization size, i.e., small and medium sized enterprises (SME) and large organizations, on quality costs. The study identified important factors and measures contributing to a successful quality cost program implementation and developed an empirically based model for quality costs in the manufacturing environment.

Investigation of cost accounting, decision making, and quality analysis methods point to a weakness in the business decision-making process and more specifically with the lack of business decision-making tools that are readily available. Computer programs could be used to overcome these weaknesses and to standardize the decision-making process.

In last years, with turn to quality produce, investigate that necessary of quality produce and producing quality product cost is going up in total cost. Certainly all this costs' supplement are growing up in total cost day by day, and they reach rather total at least. But, the accounting system being in force is not including quality costs. Quality costs' dimensions reaching in total cost show us that there must be special studies on quality costs. In this case, we study on quality cost and we try to bring some offer about accounting of quality costs in our accounting system.

Business decisions sometimes appear to be made without first performing a thorough analysis of the problem and ascertaining the impact of that decision on the organization. An organization should make every effort to use available data and effective analysis techniques when making business decisions. We contribute to the research on the quality cost sharing contacts in several dimensions. First, we expand the definition and modeling of quality on a decentralized supply chain to include product failures resulting from design related imperfections. Secondly, we investigate a larger set of external quality cost sharing contracts than what has been studied in the previous literature. We also discuss how to prepare the right contracts in order to avoid the inefficiency of asymmetrical information. Thirdly, we investigate the profitability under the market competition, quality improvement and the external quality cost sharing contract.

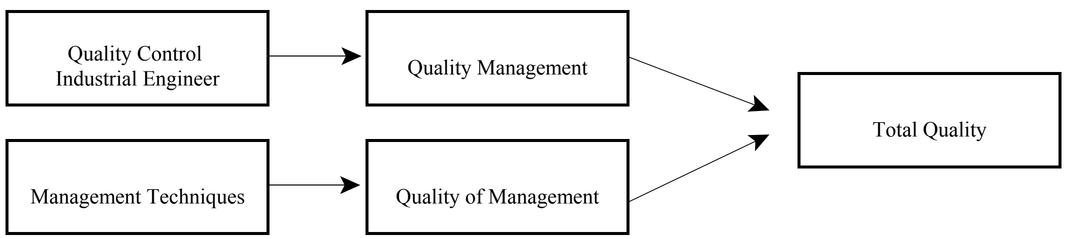
QUALITY UNDERSTANDING SETTLE IN TO MANAGEMENT

Total quality management can qualify that became a united whole of two process's. These are:

1. Quality management
2. Quality of management

Finally of the mature of management techniques, quality of management has increased. End of mature of quality techniques, reached to Quality Management increased.

Figure 1: Total Quality = To Become a Whole of Two Approach (Renault, 1991:301.)



During expound of Quality of Management, Classical and Total Quality Management approaches are comparing and constituting a "Quality Strategy" (Efil, 1996:53).

From Tailor to Total Quality

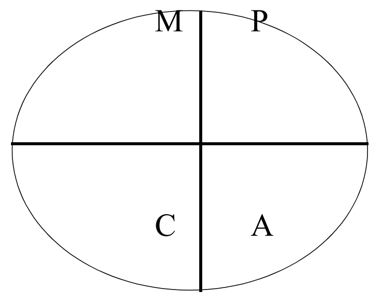
There are several research have been completed for increasing to productivity in the factories. These researches include F. Tailor's working principles. He accepted to founder of Industrial Engineering. He explored his basis of organization and management understanding in his book "Principles Of Scientific Management" publised in 1911 (Stora, 1986:21).

Deming's Quality Approach

There were three steps on Tailor's controlling system named "Control". Its steps are "Planning-Do- See = Control. Deming has added fourth step to this process and described for real controlling. He added "Make a Move" for real control. (Efil:54-55).

Figure 2: Deming's Circle

Deming's Circle
Planning (P)
Do (Apply) (A)
Control (C)
Make a Move (M)



Juran's Quality Approach

We can summarize to Juran's "Total Apply" opinions like this; (Yenersoy, 1993:17.)

- ♦ Quality must be a project began from management.
- ♦ Quality education must given began from top management under bottom.
- ♦ Quality must interest in all the function of the firm.
- ♦ Quality project must apply with all together.
- ♦ Annual quality developing plans must do and these project must apply step by step.
- ♦ There must be two main process during the application; 1- Identification 2- Finding a way .
- ♦ Quality projects reach to success.

Total Quality Control and A.V. Feigenbaum

He published his book "Total Quality Control" in 1961 and he explained his opinions in this book. Dr. Feigenbaum has described TQM in this book "This is an effective system as producing product and service in most economical level. But it also keeps the quality grooving, keeps the quality, makes the quality better and it regards the customer satisfaction."

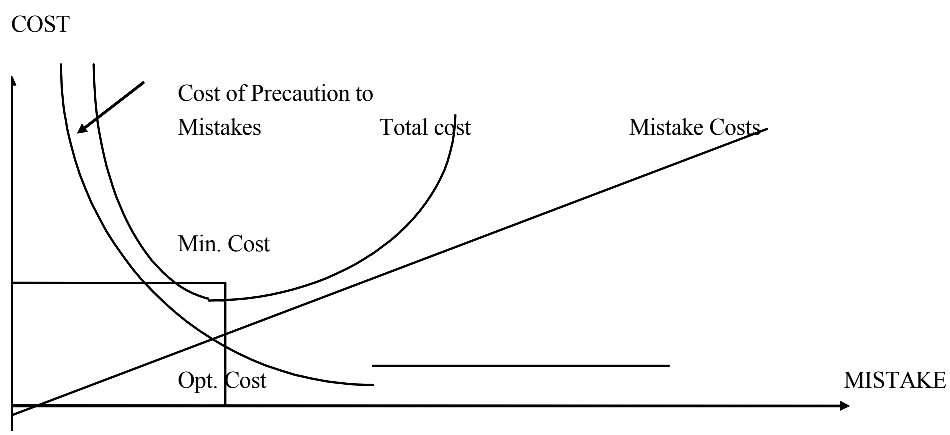
Ishikawa and Quality Circle

Ishıkawa; completed opinion of Juran, Deming and Feigenbaum about quality management, in to Japanese opinion. His pinion's basis is answering the all needs of the customer. And he used "The Fish Bones Diagrams" for solving the problems.

COMPARISON TO CLASSICAL MANAGEMENT UNDERSTANDING WITH TQM

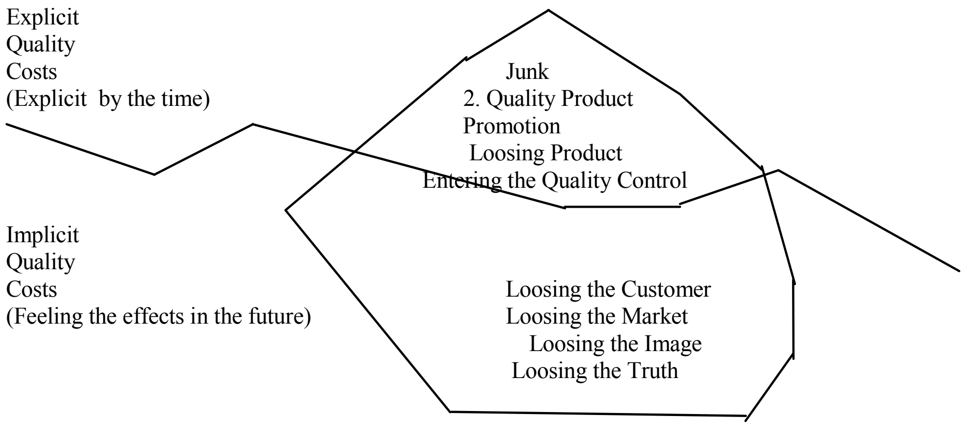
Aim of classical management approach is making a standard and producing according to this standard and taking it under control. TQM accept any standard and its aim is grooving and being better continuously. It is being in conflict with classical management approach in every topic. In classical management understanding, quality and cost is in contradiction. Because producing over the standard quality needs more cost. In the figure 3, minimum cost is becoming in optimum quality (becoming in standard mistake percent). In classical management, decreasing the mistake needs more cost. May be it is impossible to reach to zero mistake. (Peker, 1993:50-51.)

Figure 3: Quality-Cost Relation in Classical Management



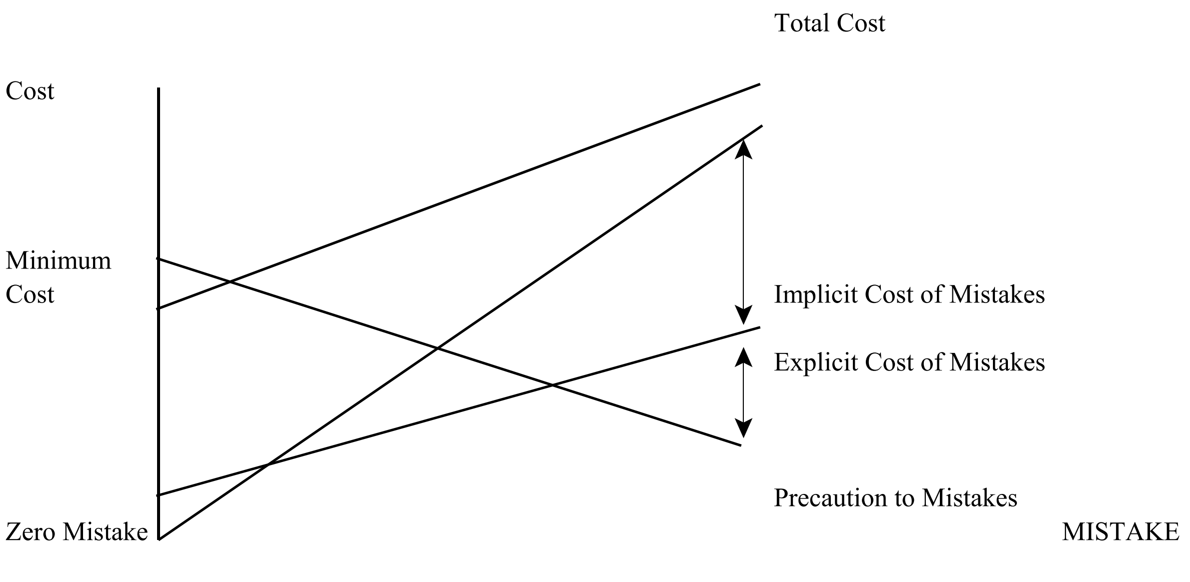
In figure 4, there are two mistakes. First one "Cost of Precaution to Mistakes" is increasing extreme levels because of management understanding. For decreasing this cost, have to give up from "Inspection". And must approximate with cost of precaution to mistake. Second mistake is on "Mistake Costs". Explicit costs are less than implicit costs. In "Quality Iceberg" figure is showing the implicit costs. This cost will show itself with loosing the selling and customer (Efil, 1997:61).

Figure 4: Quality Iceberg



For minimum cost must apply the management understand to based on auto control system and apply precaution quality control systems. Consequently, it will reach to high quality and zero mistake (Efil, 1997:62).

Figure 5: Quality- Cost Relation



Quality means that all of the features of a product or service which covers to a need. Quality control means that is including supply to quality cover, research and developing, market research, product, sale and after sale service and all like these standards (Doğan, 1991:5). In summary, quality control understanding is combining with TQM. TQM is meaning; it is an effectively system which is creating, living and developing the quality in the entire department for making the success to customer needs in most economical level (Kobu, 1993:12).

In TQM, all the workers must attend the TQM process (Yükçü ve Doğanöz, 1994:64). Documentation department must prepare quality developing activity in a systematic system. At least firms must establish quality system. There are two important points for establishing the quality system. First, decision on the extent of the responsibility of relevant parties about quality. Determine to the structure of working and organization structure about quality. Second, working on documentation. Documentation is including quality manual, operation process and support documentations (Bozkurt, 1993:33).

If the quality control systems costs has determine and control with different tools by management, it can be useful about decreasing the producing cost of product or service. In classical approach, enterprises are just calculating the explicit costs. High quality is bringing more costs together. According to this, minimum costs have to produce in optimum quality. But in TQM, enterprises have to take in to consideration to implicit costs. And they will determine a new quality level (Yükçü ve Doğanöz, 1996:67-342). If quality costs observe in carefully and use in cost accounting system, it will decrease to total costs.

IDENTIFICATION AND REPORTING THE QUALITY COSTS

Quality cost is an extensive financial measurement of quality suitable. Quality costs can calculate a department of enterprise or all departments. For Juran, quality costs can identified in four level (Kendirli and Çağıran, 2002: 136)

- Precaution Costs; cost of process of precaution workings.
- Evaluation Costs; cost of measuring the level of quality.
- Internal Failure Costs; cost of correction to faulty outputs.
- External Failure Costs; cost of faulty outputs which are distributing to customers.

An enterprise can report the quality costs in different ways. The management has to take into consideration to quality topics. According to this, it is taking in to priority place for management. (Lammert ve Ehrsam, 1988:36). Reports which ones prepared on quality costs analyze have to includes clear and able understand with all the personnel. These reports and analyze must encourage the personnel to develop the quality (Doyle, 1994:153). Quality reports and analyze must complete with non-financial parameters. These non-financial parameters can includes like this; (Shank ve Govindarajan, 1993:222).

Measurement about Dealer
- Frequencies of faulty product by every dealer.
- Frequencies of sending for every dealer.

Measurement about Product Design
- Number of pieces in producing process
- Ratio of pieces in producing process.

Measurement about Producing Process;
- Ratio of productivity,
- Quality productivity
- Churn of the producing,
- Recycling,
- Machine breaking out of program,
- Frequencies of deviation in producing and sending,
- Number of personnel,

Measurement about Marketing;
- Frequencies of customer complain,
- Level of customer satisfaction,
- Guarantee orders,
- Frequencies and number of return of product.

Measurement of non-financial is, supplying the feedback to managent in TQM. But TQ costs reporting expose a general photo of enterprise (Üstün, 1996:352.).

Reports which are preparing in TQM;
- Technical, statistical and non-financial parametric reports,
- Financial reports about quality costs,

QUALITY COST'S CONSTITUTION AND EFFECTS ON FINANCIAL DECISION IN ENTERPRISE: A RESEARCH IN ÇORUM'S ENTERPRISES

Invention

Aim of the research is; to investigate of Çorum entrepreneurs' how they are looking to the quality cost. Are they using quality cost on their financial decisions?

Hypotheses

Here is the supposition of the research;

- The knowledge's reflective truths which are given by entrepreneurships.
- We suppose that the entrepreneurs have understood the questionnaire correctly and exactly.

And here are the hypotheses of the research;

H°= Enterprises in Çorum are aware of the quality costs
H^{1}= Enterprises in Çorum are using cost accounting
H^{2}= Enterprises in Çorum are planning and controlling about cost
H^{3}= Enterprises in Çorum are using quality cost for their financial decisions.

Method and Extension

Generally, the study is including two divisions. First division is including theoretical knowledge. Second one is including application. We put all the Çorum SME's owners or partners to extension of the investigation. We have developed questionnaire for picking up to datum. Questionnaires practiced by survey takers to face to face and evaluated one by one. We benefited from SPSS 11.0 program for evaluating the results.

We took the SMEs in Çorum. There are 368 enterprises all over the Çorum. (http:// www. kosgeb.gov.tr/ veritabani/default.aspx). We have reach 180 enterprise in this context. We try to reach all the enterprise, but backwards enterprises didn't full the questionnaire so that we can reach the 49% of all the enterprises. We have got these finding after our questionnaire explaining in the tables. Here is the knowledge about the SMEs, which are joining our questionnaire in table 1.

Table 1: Knowledge about the SMEs

Areas Which Are Tested	Number of the joining questionnaire	Ratio%
A. Statute in Law		
Join stock company	--	--
Stock corporation	48	26,66
Limited corporate	90	50,00
Personal firm	31	17,22
Other	11	6,11
TOTAL	180	100

Table 1: Knowledge about the SMEs		
Areas Which Are Tested	Number of the joining questionnaire	Ratio%
B. Sector of the SME.		
Food	49	27
Textile	20	11
Paper Industry	7	4
Rock-Soil Industry	63	35
Machine	27	15
Other	14	8
TOTAL	180	100
C. Who is the manager of SME.		
Owner	64	35,4
One of the Partner	75	41,5
Professional Manager	41	23,1
TOTAL	180	100
D. Education level of the manager.		
Elementary School	8	4,6
Secondary School	6	3,1
High School	30	16,9
Vocational High School	8	4,6
Faculty	128	70,8
TOPLAM	180	100

In table 1, we can see the statue of the Çorum SME. Generally they become to organize in capital corporate. %50 of the SMEs are organized on limited corporate, %27 of the SMEs are organized on Stock corporate. Çorum SMEs are working in three sectors generally. These are rock-soil industry (%35), food industry (%27) and machine industry (%15). These SMEs are managed by their owner (%35,4) or one of by their partner (%41,5) especially. These managers are graduated from university especially (if we add the vocational high school, it is becoming %75.4).

Table 2: Looking for accounting and cost accounting in Çorum SMEs		
Areas Which Are Tested	Number of the joining questionnaire	Ratio%
A. Do you hold the accounting in your enterprise.		
Definitely Yes	27	15
Yes	108	60
Partially	36	20
No	6	3,3
Definitely No	3	1,7
TOTAL	180	100
B. Who is the responsibility about on accounting system.		
Owner	47	26,1
One of the Partner	113	63,7
Accounting Department	16	9,4
Professional Manager	3	1,7
Other	--	--
TOTAL	180	100
C. In which department do you charge on an independent personnel.		
Revenue of the cheque-written certificate	14	7,8
Warehouse	39	21,5
Cash Register	87	48,5
Front Accounting	40	22,2
TOTAL	180	100
D. Is there a cost accounting in your SME?.		
Definitely Yes	--	--
Yes	2	1,1
Partially	10	5,5
No	168	93,4
Definitely No	--	--
TOTAL	180	100

Table 2: Looking for accounting and cost accounting in Çorum SMEs		
Areas Which Are Tested	Number of the joining questionnaire	Ratio%
E. Do you constitute any standard for making comparison in your SME?.		
Definitely Yes	104	57,8
Yes	69	38,3
Partially	--	--
No	2	1,1
Definitely No	5	2,7
TOTAL	180	100
F. Who is supervising the standards?.		
One of the partner	81	45
Internal auditing personnel	3	1,7
Accounting department	10	5,8
Manager of the SME	80	44,2
Other	6	3,3
TOTAL	180	100
G. Which areas did you develop standards on?.		
Purchasing	42	23,3
Selling	110	61,1
Managing	25	13,8
Producing	3	1,7
Accounting	--	--
TOTAL	180	100
H. Do you take external help from any one/where about accounting.		
Chartered Accountant	10	5,5
Professional Accounting Firm	--	--
Certified Public Accountant	109	60,5
Public Accountant	61	34
TOTAL	120	100

In table 2, we can understand that, Çorum SMEs holding on their accountings in their firm. But they are keeping on their accounting just about for front accounting or for their owner. Their formal accountants are at the outside (They are professional accountants). In Çorum SME's, owners are also responsible for financial affairs of the firm. Because among the managers of firms managed by owners or at least one of them is account for %89,9 of total sample.

In Çorum SME, %48 of enterprises are charging personnel for cash register. %22 of firms are charging personnel for front accounting and %21 of enterprises are keeping personnel for warehouse. As far as we can see, one personnel can do different task in the same time. They are not charging a personnel stand alone.

In Çorum enterprises, firms don't keep cost accounting especially. They have got knowledge about cost, or they have got knowledge about accounting methods of costs. But they are not keeping on cost accounting especially.

By the time, our fist hypothesis "Enterprises in Çorum are aware of the quality costs" is requiring qualification partly. They know about cost, but they don't know so much about quality costs. Our second hypothesis "H^1= Enterprises in Çorum are using cost accounting" is incorrect. Because, they are not holding on cost accounting especially in Çorum SMEs.

General of the enterprises are developing some standards for making comparison (%96). These standards are supervising by owners or one of the partners (%45). In this question, %42,2 of Çorum enterprises' managers are supervising the standards. If we remember Table1, in Çorum SMEs, especially owner or one of the partner is manager of the firm. So that, in supervising the standard, owner of the firm is supervising the standard especially (%99, 2). But these managers don't know so many knowledge about cost accounting. These standards are increasing the enterprises perform. Firstly Çorum enterprises are taking on external assistance from Certified Public Accountant (%60), secondly from Public Accountant (%34). We can say, Çorum SMEs are keeping on their accounting outside of the firm (External assistance). They are holding on just front accounting in the firm for the owner.

In our 3rd and 4th hypothesis; "H^2= Enterprises in Çorum are planning and controlling about cost", Çorum enterprises developing some standards and they are supervising these standards. So that they are planning about standards. If we can say the budget "it is compliment of the standards", they are using these standards for controlling and planning their works.

"H^3= Enterprises in Çorum are using quality cost for their financial decisions.", Çorum enterprises don't have got largely knowledge about quality cost. Because of that, they can't use the quality cost for their financial decisions.

SUMMARIZE AND SUGGESTIONS

In TQ applications, every one speaks about personnel. But for achievement of application, the top managers have to include in to application. And they must believe and work effectively in the application. They have to be leadership for all the workers. If the firms give more importance to quality, they are becoming more priority place in hard competition. In other way, the enterprises must produce the product or service, in most suitable cost. For minimum cost (not optimum cost), they must obey the TQM orders. Firms can calculate the explicit costs. It is easy. But they must calculate implicit cost also. Because, in the long-run, implicit cost (i.e. costs are not directly attributable to specific unit or product cost) will bounce back to the firm as an explicit costs. (with loosing the customer, paying more service for after sale etc.).

We offer to Çorum SMEs these suggestions;

- ♦ Çorum SMES must learn about "Cost Accounting"
- ♦ They have to learn about "Quality Cost Accounting".
- ♦ They have to learn about TQM.
- ♦ They have to use TQM orders in their enterprises.

For learning cost accounting,

- ♦ They can make cooperation with university.
- ♦ They can employ the graduate students in their firms.
- ♦ They have to use cost accounting system in their enterprises.

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