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LETTER FROM THE EDITOR

Welcome to the *International Journal of Entrepreneurship*. We are extremely pleased to present a journal which is rapidly becoming a primary vehicle for communication of entrepreneurship research throughout the world.

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AN ANALYSIS OF INFORMAL SOCIAL NETWORKS BY INDUSTRY

**Sherry Robinson, Buskerud University College/Pennsylvania State University
Hans Anton Stubberud, Buskerud University College ABSTRACT**

ABSTRACT

Social networks are becoming increasingly important to entrepreneurs as they use them to obtain market access, information, technology, and other resources. Through networks, new firms can more quickly establish trust, reciprocity, and cooperation, and in certain industries, networks and contacts provide an indication of an entrepreneur's standing and reputation. This study builds upon previous work on social networks in entrepreneurship by examining the sources of advice used by successful business owners in three industry sectors (services, construction, and "other industry") in six European countries. Particularly, this study analyzes the proportion of entrepreneurs who seek out advice from family and friends and professional acquaintances when starting a new business. The results show that entrepreneurs in these three sectors rely on these sources to varying degrees.

INTRODUCTION

Networks are becoming increasingly important as they provide firms with access to markets, information, technology, and other resources which can improve a firm's chances of survival and growth (Aldrich, Reese, & Dubini, 1989; Birley, 1985; Farr-Wharton & Brunetto, 2007; Granovetter, 1973; Gulati, Nohria & Zaheer, 2000; Hoang & Antoncic, 2003; Madsen, 2007; Malecki, 1997; Teece, 1986). Entrepreneurs are, to some extent, dependent on their networks of personal relationships when making decisions and solving problems (Taylor & Thorpe, 2004). An entrepreneur who can identify and exploit synergistic opportunities with partners who control complementary resources and capabilities is likely to enjoy an advantage over those business owners who are unable or unwilling to do so. Business founders with dense and varied networks of contacts can gain information to help them surmount business development problems, thus shaping their own survival and growth (Bruderl & Preisendorfer, 1998; Low & MacMillan, 1988)

In western societies, social structures have developed in such a way that men have traditionally enjoyed higher "quality" networks that provide a greater range of contacts resulting in more useful (for business) information (Aldrich, 1989). These differences in informal social networks could logically be a reason many women-owned businesses reap generally lower levels of sales and have lower growth compared to men-owned businesses Bruderl & Preisendorfer,

1998). This study builds upon previous work on social networks (e.g. Birley, 1985; Hisrich & Brush, 1986; Nebus, 2006; Robinson & Stubberud, 2009; Watson, 2007; Zhao & Aram, 1995) by examining the informal social networks used by successful European business owners in three industry sectors. The next section provides a brief background on the importance of social networks to entrepreneurs followed by the methodology and results from this study.

USING SOCIAL NETWORKS IN ENTREPRENEURSHIP

The ability to network is one of the most important entrepreneurial skills (i.e. resources) for success (Barney, 1991; Birley, 1985; 1986; Aldrich & Zimmer, 1987; Johannisson, 1988; Voisey, Gotnall, Jones, & Thomas, 2006; Wernerfelt, 1984). Business owners with strong networks not only can stay in touch with the latest developments, but also can gain access to resources that would be otherwise inaccessible, or at least more costly, thus creating a competitive advantage (Dubini & Aldrich, 1991; George, Wood & Khan, 2001; Hagedoorn, 1993; Jarillo, 1989; Teece, 1986; Vanhaverbeke, 2006). This, in turn, can lead to improved chances of survival, growth, and overall success (Johannisson, Alexanderson, Noeicki, & Senneseth, 1994; Madsen, 2007; Malecki, 1997). According to Butler and Hansen (1991), new firms are more likely to achieve better business performance when they are able to identify and attain resources through exchange relationships within their networks. In studying firms that were or were not members of a particular business organization, Miller and Besser (2005) found that business performance measures, including gross sales, were significantly higher for the businesses that were network (association) members. These findings support work by Jaworski and Kohli (1993) showing that business owners in a formal business network achieved significantly greater success in reaching business goals than non-networked businesses.

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). In fact, within 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). Similarly, Baum, Calabrese and Silverman (2000) suggest that start-ups can enhance their chances of survival and eventual success by establishing alliances and developing them into an effective network. Concrete examples of the benefits of networks include obtaining board members with significant management expertise (that small firms would not normally have been able to attract), and receiving orders from large corporations that would not otherwise deal with the new small firm (Hippel, 1994). Access to information and advice is a “key benefit” of networks (Miller & Besser, 2005, p. 169) as it provides chances for new ideas, problem-solving, and opportunity recognition.

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). Previous research has shown that small business owners tend to use informal sources, especially family, friends, and professional acquaintances, while larger businesses generally use more formal sources, namely, banks (Cooper, Woo, & Dunkelberg, 1989; Robinson & Stubberud, 2009a, 2009b; Smeltzer, Fann & Nikolesean, 1988). 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). The use of different sources of advice could logically vary based on industry as different resources are needed in each.

The quality of information obtained from different sources naturally varies based on the expertise of the knowledge source. For example, family and friends are less likely to provide important business information, but are more likely to have strong ties and be willing to give assistance and advice. Professional acquaintances probably have better information but could be more difficult to contact (Nebus, 2006). The ideal situation is one in which experts are also friends or family members, thus providing useful information at a low “cost” in terms of time and willingness to help (Haas & Hansen, 2005; Hansen & Haas, 2002; Nebus, 2006).

This relationship between informal social networks and knowledge/resources may contribute to the explanation of why women-owned businesses often have lower sales and growth compared to men-owned businesses as men’s social networks tend to provide more useful information than women’s (Aldrich, 1989). Women have traditionally suffered a disadvantage in terms of formal and informal networks because men and women tend to develop different networks, with men’s being more likely to include business contacts and advisors (Aldrich, 1989; Brush, 1997; Burke, Rothstein, & Bristol, 1995; DeWine & Casbolt, 1983; Fielden, Davidson, Dawe & Makin, 2003; Ibarra, 1993). Hisrich and Brush (1986) found that men counted professional advisors, lawyers, and accountants as their most important supporters. In contrast, women considered their families (including spouses) and friends as their most important supporters. In a study of European entrepreneurs, women were more likely to have received business advice from their family and friends when starting their businesses, whereas men’s most-often listed source was professional acquaintances (Robinson & Stubberud, 2009a, 2009b). In fact, in each of the nine countries included in the study, family and friends were listed as women’s primary source of advice (a statistically significant association), and in seven of the countries, the association between gender and the use of professional acquaintances was significant (2009a).

It is clear from the literature that a business owner’s network can influence the performance of his or her business (Bruderl & Preisendorfer, 1998; Madsen, 2007; Malecki, 1997). 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 businesses are likely to vary accordingly. This situation may be particularly obvious in an industry such as construction, which has traditionally been male-dominated, and the services sector, which often has many women-owned businesses. To examine this issue in greater detail, this study analyzes gender differences in networks by examining data from the European Union regarding the sources of advice used by men and women entrepreneurs when starting businesses in construction, services or "other industry."

METHODOLOGY, RESULTS AND ANALYSIS

This study uses data from the Eurostat metadata database (Eurostat, 2009). Participants in a 2005-2006 survey regarding the structural factors of business success were people who had started businesses in 2002 and were still personally managing them in 2005. A sample of 274,605 people from six countries was used for this study, including 74,319 women and 200,286 men (Table 1). Additional countries participated in the survey, but these six countries were chosen for this study because each of them had over 10,000 participants, thus providing a large enough pool for the break-down by both industry and gender.

Country	Men	Women
Austria	9845	3772
Bulgaria	11046	7602
Czech Republic	45338	17063
Italy	108673	36652
Slovakia	15414	6608
Sweden	9970	2622
Total	200286	74319

The three industrial sectors used in this study were construction, services, and "other industry" (total industry not including construction and services). Although the services category was also broken down into more specific sectors for analysis, significant differences were not immediately observed, so only the category "total services" is presented in this study.

Entrepreneurs were asked to indicate if they had used each of the nine sources of advice listed in the survey when they started their businesses. Only four "sources" were used by people in most of the countries, and only two of these were actually sources of advice: "family and friends," and "professional acquaintances" (see Robinson & Stubberud, 2009a, for a more detailed analysis of entrepreneurs' use of all nine sources). The other two "sources" were "no access to advice" and "no need for advice." Therefore, this study concentrates on the informal

sources family and friends and professional acquaintances. As shown in Table 2, the range (between the lowest and highest percentages) across industries was calculated for each source overall and for men and women within each source. For example, the proportion of Austrians who reported using advice from family and friends ranged from a low of 34.2% in construction to a high of 45.2% in “other industry,” resulting in a range of 11%.

Table 2: Source of Advice by Industry				
	Services	Construction	Other industry	Range
Austria				
-Family and Friends	34.8%	34.2%	45.2%	11.0%
--men	31.6	34.4	41.2	9.6
--women	41.6	30.9	62.4	31.5
-Professional Acquaintances	35.9	37.9	39.4	3.5
--men	38.9	39.2	42.0	3.1
--women	29.2	14.8	28.0	14.4
Bulgaria				
-Family and Friends	66.5%	62.8%	64.6%	3.7%
--men	62.9	52.1	63.3	11.2
--women	71.3	93.5	67.9	25.6
-Professional Acquaintances	31.2	43.5	44.4	13.3
--men	31.4	47.6	47.0	16.2
--women	30.9	31.8	38.3	7.4
Czech Republic				
-Family and Friends	41.9%	41.4%	54.0%	12.6%
--men	40.1	40.9	54.4	14.3
--women	44.9	88.2	50.9	43.3
-Professional Acquaintances	32.0	29.1	28.8	3.2
--men	34.2	29.4	30.0	4.8
--women	28.2	2.0	15.6	26.2
Italy				
-Family and Friends	40.4%	36.4%	44.1%	7.7%
--men	35.4	36.8	39.9	4.5
--women	51.3	25.1	55.7	30.6

Table 2: Source of Advice by Industry				
	Services	Construction	Other industry	Range
-Professional Acquaintances	53.8	47.1	44.3	9.5
--men	58.0	47.3	51.2	10.7
--women	44.6	41.7	25.1	19.5
Slovakia				
-Family and Friends	39.8%	44.9%	43.9%	5.1%
--men	41.2	44.0	44.3	3.1
--women	38.1	43.4	41.6	5.3
-Professional Acquaintances	43.8	46.9	46.3	3.1
--men	47.4	46.4	48.0	1.6
--women	38.0	25.3	37.5	12.7
Sweden				
-Family and Friends	43.8%	47.2%	43.0%	4.2%
--men	40.6	46.9	42.8	6.3
--women	54.2	52.7	44.0	10.2
-Professional Acquaintances	40.2	42.7	39.9	2.8
--men	41.5	44.6	42.4	3.1
--women	36.3	10.0	31.0	26.3

Analysis of these results shows that the proportions of people who use each source of advice vary according to industrial sector. The degree to which use varies (range) depends on both the country and gender of the entrepreneur. In Bulgaria (3.7%), Sweden (4.2%), and Slovakia (5.1%), the range for family and friends is relatively small, indicating that there is less variation across industries than there is in the other countries such as Austria (11.0%) and the Czech Republic (12.6%), where considerably more people in “other industry” used this source of advice. In looking at professional acquaintances, Bulgaria showed the highest range (13.3%), due to the fact that only 31.2% of people in the services sector used family and friends, compared to 43.5% and 44.4% in the other two sectors. Italy (9.5%) was the only other country having a range greater than 3.5%. In contrast to Bulgaria, the Italian services sector (53.8%) used professional acquaintances more than entrepreneurs in the other two sectors did, especially in “other industry” (44.3%).

The picture becomes more complex when these data are further broken down by gender. The results of chi-square tests of association between industrial sector and source of advice within genders (see Table 3) indicate that women in Slovakia were the only group in which there

was not a statistically significant association between industrial sector and the use of family and friends. In Austria, the differences were large, as 30.9% of women in construction used family and friends but 62.4% of those in “other industry” used this source. Italian women had fairly similar proportions. Whereas men in the Czech Republic had a range of 14.3% for family and friends (the highest for men), women in Austria (31.5%), Italy (30.6%), Bulgaria (25.6%), and the Czech Republic (43.3%) had a much higher range, suggesting the use of family and friends as a source of advice varied according to industry more amongst women than amongst men.

Austria	Family and Friends		Professional Acquaintances	
-men	33	p<.001	8.1	p<.018
-women	36	.001	2.8	.245
Bulgaria				
-men	27	.001	178	.001
-women	52	.001	13	.001
Czech Republic				
-men	608	.001	107	.001
-women	92	.001	127	.001
Italy				
-men	85	.001	998	.001
-women	336	.001	524	.001
Slovakia				
-men	13.9	.001	2.1	.343
-women	3.8	.150	5.6	.061
Sweden				
-men	25	.001	6.2	.044
-women	9.3	.010	34	.000

There was usually a greater range across industries for women using professional acquaintances than for men, with the largest ranges coming from the Czech Republic (26.5%) and Sweden (26.3%), and the smallest from Bulgaria (7.4%). Bulgarian men (16.2%) showed the largest range and Slovakian men (1.6%) the smallest range. Slovakian men and women and Austrian women were the only groups in which there was not a significant association between industrial sector and the use of professional acquaintances.

	Services		Construction		Other Industry	
Austria						
-Family and Friends	105	p<.001	0.3	p<.590	26	p<.001
-Professional Acquaintances	48	p<.001	18	p<.001	12	p<.001
Bulgaria						
-Family and Friends	124	.001	107	.001	3.7	.055
-Professional Acquaintances	0.4	.517	14	.001	12	.001
Czech Republic						
-Family and Friends	92	.001	91	.001	5.3	.021
-Professional Acquaintances	163	.001	35	.000	111	.000
Italy						
-Family and Friends	2273	.001	64	.001	278	.001
-Professional Acquaintances	1561	.001	14	.001	763	.001
Slovakia						
-Family and Friends	12	.001	0.1	.920	1.4	.233
-Professional Acquaintances	120	.001	14	.001	23	.001
Sweden						
-Family and Friends	128	.001	1.2	.275	0.1	.764
-Professional Acquaintances	19	.001	50	.001	10	.001

Given these findings, it would be tempting to assert that fewer women in construction (compared to the other industrial sectors) generally used family and friends. However the results from Bulgaria (93.5% in construction) and the Czech Republic (88.2% in construction) do not follow that trend. Furthermore, within the construction industry, a statistically significant association was found between gender and the use of family and friends in only half the countries (Bulgaria, the Czech Republic, and Italy), as shown in Table 4. Similarly, within the “other industry” category, an association between gender and the use of family and friends was found only in Austria (41.2% for men vs. 62.4% for women), the Czech Republic (54.5% for men vs. 50.9% for women), and Italy (39.9% for men vs 55.7% for women). It was expected that the services industry would show the least association between gender and the use of family and friends because women are more likely to own businesses in this sector than in the other two. However, a significant association was found in each of the six countries, with the largest difference being in Italy (35.4% for men vs. 51.3% for women). In every country except

Slovakia, services sector women were more likely than men to have asked friends and family for advice.

Associations between gender and the use of professional acquaintances were evident in every industrial sector of every country except in the services sector of Bulgaria, in which the percentage of men using professional acquaintances was higher, but there was not a statistically significant association. In every country except Italy, the largest gender differences were seen in construction, with Sweden showing the most striking difference (44.6% for men vs. 10% for women). Although it may be an anomaly in the data, only 2% of women in construction in the Czech Republic obtained advice from professional acquaintances, which may be related to the fact that 88.2% used friends and family. In Bulgaria, which was similar to the Czech Republic in many ways, women in construction had an even higher use of family and friends (93.5%) but only 31.8% used professional acquaintances.

CONCLUSION

The results of this study generally support Birley's (1985) finding that entrepreneurs used different sources to obtain different types of resources. Consistent with previous research (Aldrich, 1989; Hisrich & Brush, 1986; Robinson & Stubberud, 2009a, 2009b), there was a statistically significant association between gender and source of advice in that women used family and friends more often than men, but men used professional acquaintances more often than women. However, by examining the data by industry and gender, it became clear that there are some situations in which men call upon family and friends more than women do. Regardless, men in every case were more likely to have used professional acquaintances. This is consistent with previous research indicating that women have less diverse or lower quality networks that include fewer weak ties that are likely to lead to useful business information (Aldrich, 1989; Brush, 1997; Burke et al., 1995; DeWine & Casbolt, 1983; Fielden et al., 2003; Ibarra, 1993).

As shown in this study, informal sources of advice such as family and friends and professional acquaintances are significant sources of advice. However, people in different industries and countries rely on these sources to varying degrees. There was no clear and immediate trend to indicate that people in all countries use different sources based on their industries. An association between gender and the use of a particular source of advice was found in most cases, with women usually being more likely to have asked family and friends for advice, and less likely to have used professional acquaintances as a source of advice. The degree to which women used each source usually varied by industry, with the most noticeable differences being apparent in the construction industry. A limitation of this study is the nature of the data in that only total numbers were available, preventing further analysis based on more robust statistical tests. Given the importance of both entrepreneurship and gender equality in society, this is issue that should be examined further, with a focus on how to integrate women

into important informal social networks, thus providing them with sources of advice that can assist them in business.

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ENTREPRENEURSHIP: THE BASIS FOR CENTRAL EUROPEAN ECONOMIC DEVELOPMENT

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ABSTRACT

Economic development generally flourishes under three conditions: (1) large free markets that provide the economic incentive to entrepreneurs to create goods and services to sell for profits; (2) governments generally free of corruption that ensure the market based economy will be fair, impartial, and protected; and (3) a business culture oriented toward entrepreneurship and a capitalistic structure. Instead of joining the European Union to enhance economic prosperity, we suggest that ten nations of Central and Eastern Europe may find the development of a free trade agreement a more pragmatic and successful endeavor. By developing their own free trade agreement they would be able to dramatically change their social and business policies towards an entrepreneurship friendly philosophy that has proven successful in nurturing economic development in other nations. This paper examines the steps necessary for those Central and Eastern European countries to develop a free trade agreement.

INTRODUCTION

Some nations of Central and Eastern Europe have decided that joining the European Union (EU) is a meaningful way to encourage economic development. The widening gap between the EU's economic goals and its dismal performance, however, has adversely affected the credibility of the EU. Is the EU a free market area or a fully fledged political federation? Subbacchi believes that the EU has far too many centralized policies to be a simple free market area (Subacchi, 2005). Short, Wall, & Dunn (2005) have postulated that the EU appears to be more influenced by a philosophy that tends toward socialism and anti-business policies, and thus, may not be the best model to follow for nations seeking economic development. In this article, we suggest that nations (in particular, ten contiguous Central and Eastern European nations) should consider whether they want to pursue an EU model that might continue the anti-business and socialistic policies that served them so poorly in the past under communism or dramatically change their social and business policies toward an entrepreneurship friendly philosophy that has proven successful in nurturing economic development in other nations.

PURSUIT OF AN ENTREPRENEURIAL CLIMATE

The noted economist, Milton Friedman, believed that a key factor in the economic growth of underdeveloped nations is the “release of the energies of millions of able, active, and vigorous people in an atmosphere of freedom, and a maximum opportunity to experiment in new ways of doing things.” The development of an entrepreneurial atmosphere can be achieved, according to Friedman, by providing education, information, and an environment for economic agents to be mobile and flexible. Friedman further argued that creating this environment requires a minimal administrative apparatus and very little policing other than the provision of a legal system for the enforcement of contracts (Friedman, M., 1962).

A good example of the success of Milton Friedman’s argument is Ireland. A nation known for over a hundred years for famine and emigration had in 2004 the highest GDP real growth rate, the lowest unemployment rate, and the third highest GDP per capita in the 12 original European Community nations making up the EU (United States Central Intelligence Agency, 2005). According to Thomas Friedman, Ireland achieved this significant turnaround in economic progress by bringing together the government, main trade unions, farmers and industrialists to agree on a program of fiscal austerity by slashing corporate taxes, moderating wages and prices, and aggressively courting foreign investment. Friedman suggests that following Ireland’s model for economic development is simple: make education free; make corporate taxes low, simple and transparent; actively seek out global companies; open your economy to competition; speak English; keep your fiscal house in order; and build a consensus around the whole package between labor and management (Friedman, T., 2005).

According to the United Nations, many nations are liberalizing their economic policies from inward-looking, import-substituting to outward-looking, export-substituting policies and multinational corporations (MNC) are playing a key role in bringing about economic and political change in these countries (United Nations Conference of Trade and Development, 1997; Held & McGrew, 2000). In addition to liberalizing economic policies Flores and Aguilera found that a nation’s population size plays a significant role in MNC’s decision to invest in that country (Flores & Aguilera, 2007). Thus, countries with small populations and an oppressive business climate have a built in disincentive for foreign investment. Thus it appears that both progressive economic policies and market size can combine to significantly affect economic success.

The key question is how can a nation develop an entrepreneurial friendly business environment and gain access to a large free market? Long-run economic development appears to be balanced on a three-legged stool. One leg of the stool is access to large and rather free markets. A large free market system provides the economic incentive to entrepreneurs to create goods and services to sell for profits. Another leg of the stool is a system of government generally free of corruption. The government must ensure that the market based economy will be fair, impartial, and protected. The third leg of the stool is a business culture oriented toward

entrepreneurship and a capitalistic structure. A government orientation toward a culture of entrepreneurship and capitalism provides the business community with minimum obstacles in starting, operating and closing businesses along with easy access to financing business ventures. We believe if you cut off or diminish any of these three legs, a nation cannot sustain significant economic development over the long run (Short, Wall & Dunn, 2005).

While many nations seem to agree that some form of free market system is the key to economic success, some would like to have open access to the markets of other nations while providing restricted access to their own internal markets. One of the strengths of the United States has been its huge internal market consisting of 50 separate states, uninhibited by internal borders or the tariffs and laws that would restrict internal trade between states. This market was extended through implementation of the North American Free Trade Agreement (NAFTA) to include Canada and Mexico in 1994. According to the Office of the United States Trade Representative, total trade among the United States, Canada and Mexico more than tripled, from \$297 billion in 1993 to \$930 billion in 2007 (2008). The European community, recognizing that each individual country was too small to allow efficient markets to operate, is taking action to broaden its markets. The EU is attempting to develop a large, unrestricted marketplace of almost 500 million people among their 25 current EU members. But merely having a huge internal market does not ensure economic development and the potential financial benefits that access to a large market can provide its citizens. The EU has developed two legs of the three-legged stool: access to large and free markets and a government that is generally free of corruption. The third leg of the stool—a government oriented toward entrepreneurship and a capitalistic structure—has not been the culture of many of the founding members of the EU and will probably never become the driving philosophy of the EU, thus limiting its economic success in the long run.

ENTREPRENEURSHIP DEVELOPMENT IN CENTRAL AND EASTERN EUROPE

Ten nations in Central and Eastern Europe—Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Ukraine—should consider forming a free trade agreement that could result in each nation having access to a market place of over 150 million people. Why these ten nations? They have a lot in common. First, they all have a similar background derived from years under communism. (The Central and Eastern nations of Slovenia, Croatia, Bosnia & Herzegovina, and Serbia & Montenegro have been excluded from this association, since they were previously a single nation of Yugoslavia and, although a communist state, were able to steer a path between the Warsaw Pack nations and the West.) Second, these ten nations are contiguous states, which would permit a free flow of goods from the Black Sea in the South to the Baltic Sea in the North, thereby providing easy access to ocean transportation for all ten nations. Third, these ten nations have all recently changed their governments from communism to some form of democracy. (Belarus and Moldova have been excluded from this list because, in our estimation, they do not exhibit sufficient democratic

tendencies.) Fourth, all of these nations are still struggling to find the secret to economic success, witnessed by some desiring a quick fix by joining the EU. Fifth, the previous structure to facilitate and coordinate the economic development of the eastern European countries (i.e., Council for Mutual Economic Assistance) was invalidated after the democratic revolutions in eastern Europe in 1989.

The development of an agreement between the ten selected Central and Eastern European nations to form a free trade association based upon the elimination of most restrictions of trade among these nations would satisfy the same two legs of the economic development stool evident in the EU coalition, which are access to a large, free marketplace and a system of government generally free of corruption. Satisfying the third leg of the economic development stool would require the cooperation of the governments, trade unions, farmers and business communities of each of the ten nations to develop government policies oriented toward entrepreneurship and a capitalist society. This would require a Herculean effort to convince special interest groups to forgo their own personal policy biases in order to develop governmental policies that will benefit the economic development of the nation in the long run.

There are no secrets to developing a culture supportive of economic development. A nation must only release the energies of its able and vigorous citizens within an atmosphere that facilitates entrepreneurship. The foundation for accomplishing this is well established. A system of government generally free of corruption is the first prerequisite. The next requirement is a governmental system oriented toward entrepreneurship within a capitalistic structure. This governmental system must be effectively organized and efficiently administered. The last requirement is a large and rather free market system in which entrepreneurs can create goods and services and sell for a profit. The large free market system provides the economic incentive; the government ensures that the free market system will be fair, impartial, and protected; and the government orientation toward entrepreneurship and capitalism provides the business community with minimum obstacles in starting, operating and closing businesses along with easy access to financing business ventures.

The problem in developing such a society is that all interested parties in a nation must agree to develop an entrepreneurial atmosphere in a society that has little experience with entrepreneurship. It is quite natural that most interested parties (i.e., government, legislature, judicial, unions, business, etc.) will wish to protect their own self-interest, even at the expense of the overall welfare of the nation. The EU experience has been very educational in that nations have agreed to substantial changes in their own societies in order to conform to a larger model of cooperation. We suggest that a similar model of change can be utilized in developing a strong economic engine in the ten Central and Eastern European nations of Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Ukraine through the establishment of a Central and Eastern European Free Trade Agreement.

DEVELOPING AN ENTREPRENEURIAL SOCIETY

The development of an entrepreneurial society would require two major initiatives. The first initiative would be the establishment of a free market of over 150 million people in the ten contiguous nations that would permit a free flow of goods and services from the Black Sea in the South to the Baltic Sea in the North. This process would be similar to the one used to establish EU and NAFTA. Initially, the government of each of the ten nations would have to agree to explore the concept. A committee, consisting of representatives of each of the ten nations, would be established to define the policies needed to establish the trade agreement. The objectives of a Central and Eastern European Free Trade Agreement might be similar to the 1994 NAFTA agreement among the United States, Canada and Mexico (NAFTA, 1994). That is, the agreement would strive to:

Eliminate barriers to trade in, and facilitate the cross border movement of goods and services between nations;

Promote conditions of fair competition in the free trade nations;

Increase investment opportunities in the free trade nations; and

Create effective procedures for the implementation and application of the Agreement, and for its joint administration and the resolution of disputes

(NAFTA , 1994).

The second initiative could be pursued concurrently with the first initiative and would greatly benefit a nation regardless of the success or failure of establishing a free trade agreement. This initiative would require that each nation develop regulatory, judicial and administrative systems conducive to an entrepreneurial society. That is, each nation would attempt to establish a business culture that will minimize obstacles in starting, operating and closing businesses and provide easy access to financing business ventures.

The legislative changes needed in this second initiative are easily recognized through an analysis of the Doing Business Indices. The Foreign Investment Advisory Service (FIAS) —a joint service of the World Bank and the International Finance Corporation—has developed a set of indices that rate a nation's propensity to accomplish business development through building an entrepreneurship society (World Bank Group, 2008). The Ease of Doing Business Survey rates the ease or difficulty of doing business in 181 economies and provides an objective measure of business regulations, its enforcement, as well as the regulatory costs of business. These indices can be used to analyze specific regulations that enhance or constrain investment, productivity, and growth. Since a major purpose of these indices is to advise developing nations on how to attract and retain foreign direct investment, they provide an excellent indicator of an economy's propensity to develop and prosper.

COUNTRY ANALYSIS

Table 1 presents the rankings for the ten selected Central and Eastern European nations in relation to the 181 nations in the Ease of Doing Business Survey which provides Doing Business Indices in ten different areas that are important to developing an entrepreneurship society: Starting a Business, Dealing with Construction Permits, Employing Workers, Registering Property, Getting Credit, Protecting Investors, Paying Taxes, Trading Across Borders, Enforcing Contracts, and Closing a Business (World Bank Group, 2008). Seven of the ten nations are ranked in the top one-third of nations for their overall ease of doing business. Another two nations (Czech Republic and Poland) are ranked in the middle third, while Ukraine is ranked in the bottom one-third. Dimensions of the individual indices that make up the overall Ease of Doing Business index are explained below.

Table 1: Ease of Doing Business, 2009 Rankings*										
	Bul	Cze	Est	Hun	Lat	Lit	Pol	Rom	Slo	Ukr
Overall Ease of Doing										
Business	45	75	22	41	29	28	76	47	36	145
Starting a Business	81	86	23	27	35	74	145	26	48	28
Dealing with Construction										
Permits	117	86	19	89	78	63	158	88	53	179
Employing Workers	60	59	163	84	103	131	82	143	83	100
Registering Property	59	65	24	57	77	4	84	114	7	140
Getting Credit	5	43	43	28	12	43	28	12	12	28
Protecting Investors	38	88	53	113	53	88	38	38	104	142
Paying Taxes	94	118	34	111	36	57	142	146	126	180
Trading Across										
Borders	102	49	5	68	25	26	41	40	116	131
Enforcing Contracts	86	95	30	12	4	16	68	31	47	49
Closing a Business	75	113	58	55	86	34	82	85	37	143
*Table shows the ranking (out of 181 economies) of the ten contiguous Central & Eastern European nations in the area of overall Ease of Doing Business and rankings in each major area. Lower scores mean better performance. Source: The World Bank (2008).										

Starting a Business

The starting a business score considers the bureaucratic and legal hurdles an entrepreneur must overcome to incorporate and register a new firm. The rankings for starting a business are developed through an analysis of (a) all of the procedures required to register a firm; (b) the average time spent during each registering procedure; (c) the official cost of each procedure; (d) and the minimum capital required starting a business -- as a percentage of income per capita. The more time and the higher the cost to complete the procedure, the worse a nation is ranked. Poland and Ukraine were ranked in the worst one-half of nations assessed in the area of starting a business implying that these nations should seriously examine the process they require to start a business.

Dealing with Construction Permits

The ranking on dealing with construction permits is developed through an analysis of the procedures, time, and costs to build a warehouse, including obtaining necessary licenses and permits, completing required notifications and inspections, and obtaining utility connections. Bulgaria, Poland and Ukraine appear to take an inordinately long time to complete the building of a simple warehouse.

Employing Workers

The employing workers score measures the regulation of the employment process. The overall score is a composite of the following two factors. First is a Rigidity of Employment index, which is a simple average of the three indices: a Difficulty of Hiring index, a Rigidity of Hours index, and a Difficulty of Firing index. Second is an estimate of the cost of firing employees, i.e., notice requirements, severance payments and penalties due when terminating workers. Higher values indicate more rigid regulations. As you would expect from nations with a strong background in socialism, this is an area that some countries are struggling with. Five nations (Estonia, Latvia, Lithuania, Romania, and Ukraine) are ranked as relatively poor in their processes of hiring and firing employees.

Registering Property

Computations involving the ease of registering property include (a) the number of procedures legally required to register property; (b) the time spent in completing the procedures; (c) and the costs, such as fees, transfer taxes, stamp duties, and any other payment to the property registry, notaries, public agencies or lawyers. Only Romania and Ukraine are ranked among those nations in the worst one-half of the nations surveyed.

Getting Credit

The rankings on getting credit are derived from a Legal Rights Index, which measures the degree to which collateral and bankruptcy laws facilitate lending; a Credit Information Index, which measures rules affecting the scope, access, and quality of credit information; public credit registry coverage and private credit bureau coverage. All of the ten selected Central and Eastern European nations appear to have acceptable credit rankings.

Protecting Investors

The investors' protection measures the strength of minority shareholder protections against misuse of corporate assets by directors for their personal gain. The index is the average of three indexes that shows transparency of transactions (Extent of Disclosure index); liability for self-dealing (Extent of Director Liability index); and shareholders' ability to sue officers and directors for misconduct (Ease of Shareholder Suit index). Hungary, Slovakia, and Ukraine are ranked in the lower one-half of nations offering protection to investors.

Enforcing Contracts

The efficiency of contract enforcement is examined by following the evolution of a sale of goods dispute and tracking the time, cost, and number of procedures involved (from the moment the plaintiff files a lawsuit to the actual payment). Only the Czech Republic appears to need to examine its procedures, time requirements and costs involved in enforcing contracts.

Paying Taxes

This index consists of a number of indicators that reflect the total tax burden such as (a) total number of tax payments per year; (b) time it takes to prepare, file and pay the business income tax, the value added tax and social security contributions; (c) amount of taxes on profits paid by the business; (d) amount of taxes and mandatory contributions on labor paid by the business; (e) amount of taxes and mandatory contributions paid by the business that are not already included in the previous categories; and (f) total amount of taxes and mandatory contributions payable by the business. The paying taxes area seems to be the most problematic area with six of the ten nations (i.e., Czech Republic, Hungary, Poland, Romania, Slovakia, and Ukraine) ranking poorly. This is not surprising. Many nations view taxes solely as a means of raising funds for government operations and do not consider the adverse effect that taxes can have upon fostering a productive business climate.

Trading Across Borders

The trading across borders ranking measures the procedural requirements for exporting and importing goods. All official procedures are counted—from the contractual agreement between the parties to the actual delivery of goods—along with the time necessary for completion. It appears that Bulgaria, Slovakia and Ukraine need to examine their bureaucracy burden involving the import and export of goods.

Closing a Business

This topic identifies weaknesses in existing bankruptcy law and the main procedural and administrative bottlenecks in the bankruptcy process. The index reflects (a) the average time to complete a procedure, (b) the cost of the bankruptcy proceedings, and (c) the recovery rate, which calculates how many cents on the dollar claimants (creditors, tax authorities, and employees) recover from an insolvent firm. The Czech Republic and Ukraine appear to need to strengthen their bankruptcy laws to encourage a more robust business climate.

Table 2: Areas of Business Needing Legislative Attention*	
Areas Needing Improvement	Nations Ranked in Lower 50 th Percentile
Starting a Business	Poland, Ukraine
Dealing with Construction Permits	Bulgaria, Poland, Ukraine
Employing Workers	Estonia, Latvia, Lithuania, Romania, Ukraine
Registering Property	Romania, Ukraine
Getting Credit	None
Protecting Investors	Hungary, Slovakia, Ukraine
Paying Taxes	Czech, Hungary, Poland, Romania, Slovakia, Ukraine
Trading Across Borders	Bulgaria, Slovakia, Ukraine
Enforcing Contracts	Czech
Closing a Business	Czech, Ukraine
*Indicates those nations ranked in the lowest 50 th percentile and the areas of business in which they were ranked in this percentile grouping	

Table 2 summarizes the above information and identifies those nations needing to take some kind of corrective action to improve a particular area of business. Examination of the

specific areas that underlie the rankings for the overall ease of doing business, however, shows that each country has business areas that could be improved. In discussing the specific business areas needing improvement, we have set a very high standard to ensure that actions taken by these countries will actually result in a more productive business climate. If a country ranks in the bottom one-half of all nations in a specific area of the Ease of Doing Business survey, the area is identified as needing improvement. For example in the area of Starting a Business, if a country's ranking is 90 or higher (of the 181 nations ranked), the nation is identified as needing improvement in that business area.

CONCLUSIONS

Given the Communist history of the ten selected Central and European nations, it is not surprising that many of these nations have excessive bureaucratic and legal procedures governing starting, operating, and closing businesses. The carryover of these bureaucratic tendencies from a planned economy, however, is quite stifling in a nation wishing to develop an entrepreneurial society that can, to paraphrase Milton Friedman, release the energies of millions of able, active, and vigorous people in an entrepreneurial atmosphere to take advantage of a large, free market and the opportunity to experiment in new ways of doing business.

Development of a tentative agreement to establish an open and free market among the ten contiguous nations, although quite difficult, could be accomplished. After all, most of these nations have already had experience with a free trade-like agreement while under the influence of the USSR, i.e., Council for Mutual Economic Assistance. The development of a free trade agreement would require the chief executive officer of each nation to agree to appoint members of an international committee to investigate the development of an agreement. Once the initial Central and Eastern European Trade Agreement has been drafted, the difficult part of the process would begin. Obtaining approval by each nation's legislature and redesigning the bureaucratic and legal system of business in each country would be most difficult, since it involves changing the culture of society. All interested parties would have to agree to put aside their own special interests for the overall economic enhancement of society. Legislatures would have to establish laws that are conducive to an entrepreneurship society; governments would have to establish systems to administer the laws in a fair and timely manner; and the judicial system would have to revise their processes to adjudicate the laws in a more timely manner. The challenges to develop a free trade agreement and an entrepreneurial society are great, but the outcome would be the establishment of a dynamic free trade zone in Central and Eastern Europe and the establishment of an entrepreneurship culture that would drive the economic advancement of each of the ten member nations.

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STRESS AND COPING STYLES OF ENTREPRENEURS: A MALAYSIAN SURVEY

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ABSTRACT

The purpose of the study is to provide empirical evidence on the sources of stress among entrepreneurs in Malaysia and to examine the associated coping mechanisms. An anonymous, self-administered, mail survey was distributed to a sample of 118 entrepreneurs in various business industries. The results show that 'business skills required', 'work pressure', 'high expectation of others' and 'responsibilities' are among the main elements that generate stress. Various coping strategies were employed to deal with the problem of stress. Results reveal that 'effective communication', 'disregarding', 'diverts thinking' (by doing something else) and 'networking' assist Malaysian entrepreneurs in handling their stress level. The conclusion reached is that, to manage stress, the work assigned must be properly organized; emotions must be kept under control by disregarding unnecessary factors that create stress and spending time with friends are all crucial. The study concludes with recommendations for future studies.

INTRODUCTION

Entrepreneurs' stress

Commencing in the 19th century, when it was considered a basis for ill health, stress has been a topic for research and academic interest, and numerous studies have examined this phenomenon (Lazarus and Folkman, 1984; Cooper, Dewe and O'Driscoll, 2001). It is considered to be an internal state or reaction to anything real or imagined that an individual consciously or unconsciously perceives as a threat (Clarke and Watson, 1991). Stress is an inescapable reality of most working environments and has become a popular concept for explaining a wide range of behaviours that appear to defy explanation. Selye (1976) used the term stress to describe physiological changes induced by environmental demands. It is a process in which environmental events or forces threaten the wellbeing of an individual in society. Stress causes a disruption in the emotional stability of an individual that induces a state of disorganization in the personality and behaviour and has proved costly for individuals, companies, organizations and society (Ortqvist et. al., 2007; Manshor, 2000). For companies and organizations, the cost of stress takes many forms. These include absenteeism, high medical costs, accidents, the consequent cost of recruiting and training new workers, and a decline in productivity. Many

challenges in the work environment have resulted in higher job stress. These are characterized by heightened competition, exposure to pressure, lack of time, lack of space, continuous technological development and advancement, conflicting demands from organizational stakeholders (Hall and Savery, 1986), increased use of participatory management and computerization (Murray and Forbes, 1986), greater uncertainty and others.

Entrepreneurs are subject to stress because of the nature of their work. The role of the entrepreneur is dependent on the creation of a new venture by combining resources to create profit from a market opportunity (Shane and Venkataraman, 2000). After the venture is created, the entrepreneur bears the responsibility for its performance, which can be viewed through various perspectives i.e. financial or non-financial (Gartner, 1985). The experience of stress is more prevalent among entrepreneurs compared with other job occupations (Robinson, 2004). Empirical evidence shows that approximately 70 per cent of business owners and managers believe that it is far more stressful running their own business venture than working for other people. In the pursuit of such a business venture, entrepreneurs may work under highly stressful circumstances and are exposed to the pressure of commitments and obligations. Several researchers have categorized the role related stress experienced by entrepreneurs into three major dimensions, namely, role conflict, role ambiguity and role overload (Boyd and Gumpert, 1983; Johnson, 1995 and Harris et. al., 1999). These factors, either singularly or collectively increase the tendency for withdrawal from being an entrepreneur (Mellahi and Wilkinson, 2005; Shepherd and Douglas, 2000). Role stress holds the potential to initiate a chain of events that may ultimately lead to failure, as entrepreneurs are likely to start having doubts and become dissatisfied with their current position. In addition, researchers have determined that a lack of experience and the type of educational background may signal entrepreneurial stress. Parker (2006) supported this statement with a study on the conflict faced by a group of entrepreneurs whose inability to make such decisions arose simply because of their inability to gain and acquire experiences and because of their inadequate knowledge in certain segments. These segments include facing a new or unknown market, changes in technology or certain business ideas. As a result, the inability to cope with these challenges may create pressure on the entrepreneurs thereby generating stress. Hence, according to Solomon et. al. (1985) such circumstances have been described as 'role novelty', which refers to an undeveloped script for a specific role, which can be gained from experience or education.

Entrepreneurs' coping mechanisms

Coping skills largely determine how individuals experience stress. Coping refers to behaviour that protects people from being psychologically harmed by a problematic social experience; a behaviour that mediates the impact that society has on its members (Pearlin and Schooler, 1978; Lazarus, 1998). Much of the research on coping strategies, particularly on job

stress, has viewed coping as a mechanism to avoid or at least reduce the level and experience of stress (Folkman and Lazarus, 1980; Latack, 1986; Havlovic and Keenan, 1991).

In the context of entrepreneur's stress, researchers have found several mechanisms to cope with such experiences (Boyd and Gumpert, 1983; Johnson, 1995; Robertson, 2004). Various studies show that the antecedents of coping mechanisms among academics include networking, ignorance, delegation (Boyd and Gumpert, 1983; Robertson, 2004), effective communication, finding satisfaction (Boyd and Gumpert, 1983), exercise (Johnson, 1995; Robertson, 2004), prioritize workload, comfort food, smoking and external advice such as counseling (Robertson, 2004).

Although there have been several studies on job stress within the Malaysian perspective (see, Manshor, 2000; Kuan, 1994; Bat, 1995; Aun, 1998; Yahya, 1998, Nasuridin and Ramayah, 2005), studies on the level of stress among entrepreneurs in Malaysia and coping mechanisms for dealing with are lacking. A clear research gap is also evident in the entrepreneurship literature, where only a small number of studies focused on how entrepreneur's deal with stress and the type of coping mechanisms (Boyd and Gumpert, 1983; Akande, 1994; Miller, 2000). Understanding the factors that contribute to entrepreneurs stress is necessary for improving stress management programmes among entrepreneurs in Malaysia. In addition, understanding the efficiency of coping strategies is important for existing ventures as well as those in the gestation process. Thus, it is important to help entrepreneurs to better understand the stressors and strains, to formulate appropriate coping strategies that minimize the negative consequences of job stress. It is hoped that by exploring the sources of stress and coping mechanisms utilised by entrepreneurs, that tension can be reduced, enabling them to perform effectively and efficiently in their business undertaking. This study is expected to contribute to a better understanding of the sources of stress and coping strategies from the viewpoint of entrepreneurs based in developing countries. Given that entrepreneurship in Malaysia is important, as it provides support for the process of economic development in achieving developed nation status (Choy et. al, 2005), such knowledge is critical for both research and policy-making purposes. As previously stated, the development of entrepreneurship activity has been growing in importance. Both academics and governments appear to be concentrating on encouraging entrepreneurship, as it symbolizes innovation and a dynamic economy. Hence, the expectation from society is much higher as their contribution generates profits for their own business as well as the whole nation. This anticipation exposes entrepreneurs to great pressure as they struggle hard to meet the goals. Consequently, due to the aggravation in making such decisions, the exposure to pressure from work is highly determined (Wincent and Ortqvist, 2006). Therefore, this study investigates this issue in greater detail.

This study is organized as follows: the next section presents our research methodology, including the data sample, data collection process, and procedure to undertake in the study. We continue by reporting empirical results in the following section and conclude with a discussion

and proposed implications of the theory and practice concerning entrepreneurial stress and coping mechanisms.

RESEARCH METHODOLOGY

A questionnaire survey was used to collect the primary data from a convenience sample of 300 individuals who own either a small or medium size business in Malaysia. Respondents were given four weeks to answer the questionnaires. However, despite several reminders, only 118 were returned representing a 39.3 percent response rate. The questionnaire was self-administered in order to distribute it to a variety of locations. The owners of 300 small businesses were identified from a local business directory and personally visited or contacted via email or telephone. The entrepreneurs who agreed to take part formed the research sample. Table 1 shows the demographic characteristics of respondents.

Table 1: Summary of Respondents' Demographic Characteristics					
Profile		Frequency	Percent	Valid Percent	Cumulative Percent
Gender					
	Male	70	59.3	59.3	59.3
	Female	48	40.7	40.7	100
	Total	118	100	100	
Age					
	Below 40 years old	72	61	61	61.0
	Above 40 years old	46	39	39	100
	Total	118	100	100	
Ethnic Group					
	Malay	78	66.1	66.1	66.1
	Chinese	20	16.9	16.9	83.1
	Indian	13	11	11	94.1
	Others	7	5.9	5.9	100
	Total	118	100	100	

Table 1: Summary of Respondents' Demographic Characteristics					
Profile		Frequency	Percent	Valid Percent	Cumulative Percent
Marital Status					
	Single	38	32.2	32.2	32.2
	Married	80	67.8	67.8	100
	Total	118	100	100	
Education					
	Primary School	5	4.2	4.2	4.2
	Secondary School	24	20.3	20.3	24.6
	Undergraduate	58	49.2	49.2	73.7
	Postgraduate	20	16.9	16.9	90.7
	Professional	11	9.3	9.3	100
	Total	118	100	100	
Business Sector					
	Trading	19	16.1	16.1	16.1
	Services	48	40.7	40.7	56.8
	Construction	7	5.9	5.9	62.7
	Manufacturing	6	5.1	5.1	67.8
	Agriculture	6	5.1	5.1	72.9
	Others	32	27.1	27.1	100
	Total	118	100	100	
Years in Business					
	Below 9 years	60	50.8	50.8	50.8
	10-24 years	30	25.4	25.4	76.3
	25 years and above	28	23.7	23.7	100
	Total	118	100	100	

Based on Table 1 above, about 59.3 percent of the respondents are male and 40.7 percent are female. A total of 61 percent of the respondents are aged below 40 years old while 39 percent

are above 40 years old. The questionnaires were distributed to different ethnic groups; 66.1 percent were Malay, 16.9 percent were Chinese, 11 percent were Indian and 5.9 percent were distributed to other ethnic groups. In relation to marital status background, 32.2 percent of the respondents are single while 67.8 percent are married. The respondents are well educated, with only 4.2 and 20.3 percent completing only primary school and secondary school, respectively, while 66.1 percent have at least a bachelor's degree. No less than 9.3 percent have professional certificates. In respect to the business sector, the questionnaires were distributed to a variety of different fields. However, the service sector shows the highest, 40.7 percent, compared with the other fields. In relation to years in business, 50.8 percent of the respondents have operated their business for less than 9 years, compared with 25.4 percent between 10 and 24 years and 23.7 percent who have operated their business for more than 25 years.

RESULTS

Evaluation of Stress Variables

A wide range of responses to the stress variables was found. A total of 33 items with stress related factors were considered and asked with a range of frequency scores from 1 to 5. The means, the standard deviations and the medians for the stress factors variables based on Online Analytical Processing (OLAP) Cubes are reported in Table 2. Results show that the top five variables that generate stress for Malaysian entrepreneurs are – they have no experience in related business field or sector, no commercial experience in conducting business; they are weak and unable to make decisions; hesitate to delegate work; and are emotionally stable (not easily upset) with mean scores of 4.09, 4.08, 3.83, 3.82 and 3.77 respectively.

Table 2: The Stress Variables Based on Mean, Median and Standard Deviation			
Stress Variables	Mean	Median	Std. Dev
PART B: ENTREPRENEUR CHARACTERISTICS			
I see myself as someone who ...			
is reserved and tends to be quiet	2.91	3	1.049
prefers the conventional, traditional	3.07	3	0.899
weak and unable to make decisions	3.83	4	0.919
is emotionally stable, not easily upset	3.77	4	0.91
poor imagination	2.14	2	0.852

Table 2: The Stress Variables Based on Mean, Median and Standard Deviation			
Stress Variables	Mean	Median	Std. Dev
introvert person	2.85	3	0.944
worries a lot	2.87	3	1.091
gets nervous easily and agitated	2.75	3	1.017
dislikes teamwork	2.22	2	1.038
hesitates to delegate work	3.82	4	0.849
hesitates to adapt to change	2.79	3	1.099
PART C: ENTREPRENEURIAL SKILLS			
As the owner of a business, the entrepreneur ...			
unable to visualize life as entrepreneur	1.87	2	0.75
not confident in meeting customers	1.74	2	0.713
no experience in related sector	4.09	4	0.841
no commercial experience in conducting business	4.08	4	0.837
does not have basic regulatory/formal requirements to comply	1.91	2	0.841
is not familiar with the rules concerning the acquisition of new customers	1.86	2	0.864
is not acquainted with marketing and distribution	1.89	2	0.827
PART D: ENTREPRENEURIAL WORK AND FAMILY			
Unable to manage time with family	3	3	1.01
Distracted from work due to family worries or problems	2.83	3	0.981
Limited leisure time due to family activities	2.76	3	0.913
Too much time spent on work	3.21	3	0.936
D30. Too much work load	2.78	3	1.093
PART E: ENTREPRENEURIAL RESPONSIBILITY AND ADDED VALUE			
High expectation from others	1.69	2	0.642
Set too high goals	2.73	3	1.05
E33. Unable to accept failure	3.1	3	1.024

Evaluation of Coping Mechanism

A stepwise OLAP Cubes procedure was calculated with coping mechanisms as the dependent variable against ‘work prioritization’, ‘effective communication’, ‘disregarding’, ‘divert feeling’ (by doing something fun), ‘networking’ and ‘regular exercise’ as the independent variables. Table 3 shows the mean score, standard deviation and median results for each dimension and the overall level of coping mechanisms. The highest mean score is to ‘divert thinking’ by doing something else (3.98), whereas the highest score for standard deviation is to ‘keep fit by trying to exercise regularly’ (1.212). Based on the median results the most commonly cited factors for helping cope with stress are – keep cool and refuse to be rushed into anything (4.00), express and discuss feelings with others (4.00) and divert thinking by doing something else (4.00).

Coping Variables	Mean	Median	Std. Deviation
PART F: Coping Mechanism			
keep cool and refuse to be rushed into anything	3.48	4	1.092
express and discuss my feelings with others	3.85	4	1.067
try to keep my emotions under control	1.89	2	0.749
divert thinking (by doing something fun)	3.98	4	0.952
spend time with friends	2.04	2	0.831
try to keep fit through exercise regularly	3.25	3	1.212

CONCLUSION AND RECOMMENDATIONS

The current analysis adds to the literature concerning entrepreneurial stress, especially in the Malaysian context. The study fulfilled its purposes, one of which was to provide information about the sources of stress among Malaysian entrepreneurs. Another purpose was to study the factors associated with the coping mechanisms. The conclusions are:

- ◆ ‘Responsibility’ and ‘added values’ appear to be sources of contributing stress for Malaysian entrepreneurs. As these factors are crucial, it requires a lot of effort and skill on the part of entrepreneurs. As such, this leads to the experience of stress.
- ◆ Other predictors on the sources of stress for Malaysian entrepreneurs are ‘skills needed’ and ‘work pressure’. Entrepreneurs need to tackle these factors to

succeed. Nevertheless, focusing too much on work and the need to acquire numerous skills can cause stress.

- ◆ 'People problems' and 'family' are not considered as stress contributors for Malaysian entrepreneurs, although it is highly rated as one of the stress factors in other countries.
- ◆ Among the effective coping mechanisms to overcome stress among Malaysian entrepreneurs are 'disregarding', 'divert thinking' (by doing something fun), 'networking' and 'effective communication'. These factors are proven and supported by earlier literature as well.

While every attempt was made to control for extraneous variables, some insignificant limitations of this design might have had an effect on the results of the study. First, the group of entrepreneurs being studied in this research comes from various business operations and sectors. This current research covered entrepreneurs in a variety of business sectors including – trading, services, construction, manufacturing, agriculture and other sectors. Each sector may have different implications and definitions of generating stress for entrepreneurs. Second, the population of the research comes from various demographic backgrounds (i.e. age, years in business and marital status). The present study reviewed entrepreneurs from various backgrounds including age, years in business and marital status. The findings may not be applicable to a different demographic range. For instance, entrepreneurs that have run their business for more than ten years may be affected by stress differently and develop alternative coping mechanisms.

As noted, entrepreneurs are important as they contribute income to the country. Nevertheless, their personal and social activity appears to be important as it affects their career development. Therefore, it is important for the whole society to support the progress. As a result, by studying their stress areas, it is hoped that they can technically and tactically avoid it. The findings of this study are relevant for practicing and nascent entrepreneurs, support institutions and policy makers as empirical evidence can be used in designing entrepreneur's training and competency-building programmes.

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FACTORS ASSOCIATED WITH LONGEVITY OF SMALL, FAMILY-OWNED FIRMS

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ABSTRACT

This study reports on an empirical investigation into the factors that impact the longevity of small, family-owned firms from a developing economy. There is a dearth of empirical literature on the factors that influence longevity of firms in developing economies. Using variables from other empirical studies in other geographical jurisdiction, this study modelled the impact these variables have on the longevity of small, family owned businesses in Jamaica. The analysis drew on data for over 260 small, family-owned firms in Jamaica. Using the ANOVA statistical technique to derive results, the findings revealed that the possession of a succession plan, the size of the firm and, the location of the firm all impact on its longevity. The implications of these findings are explored in the paper.

Keywords: *Longevity, Small, Family-Owned Firms, Developing Economies.*

INTRODUCTION

It is argued that with each successive generation, the life span of family-owned businesses is reduced (Jivraj & Woods, 2002). Further, researchers have posited that only one third of family firms survive to the second generation (Ward, 2004). Indeed, it appears that the number of firms that make it through successive generations is very small. In other words, the life of many small, family-owned businesses is very short. This pattern however, has to be reversed if small and family-owned firms are to live up to their expectation as the foundation for economic growth, job creation and wealth creation, especially in small, open developing economies. To reverse this trend, it is critical that policymakers and managers in these firms understand the factors that are associated with increased longevity of small, family-owned firms. That is, they need to know what factors have helped these firms to overcome the “generational curse” and continue to operate successfully over long periods. This issue is at the heart of the research in this paper.

A plethora of work exists on the likely demographic, organisational and social factors that influence planning for continuity in family businesses (Handler & Kram, 1998). Effective succession planning is also seen as one of the strong determinants of longevity in the family business (Lank, 2001). The aim of this paper is to determine which organisational, demographic

and social factors are most critical in impacting on the longevity of small, family firms in Jamaica. The extant literature posits a number of factors that are critical for increased longevity in small firms. In this paper, this work will be extended by replicating some of the variables in the Jamaican context. The goal of the study is to determine whether or not succession planning along with other factors such as; location, industry sector, firm size and, education level of the principal (owner) influence the longevity of firms in Jamaica. The guiding research question is: **what internal and external factors influence the longevity of small, family-owned firms in Jamaica?** This issue is under-researched in the Jamaican context. A thorough understanding of it will be critical for those who manage these firms and public policymakers who want the small firm to be the driver for economic prosperity. Further, this research will provide theorists in the field of small business research with a strong basis for building an evidence base in this line of work.

The literature argues that the factors that impact longevity may vary from one geographical location to another, given the idiosyncrasies associated with firms from different geographical locations (Lank, 2001). Some critical structural and socio-economic conditions in Jamaica (e.g. high crime levels, low growth, high debt burden, high levels of migration, inefficient government bureaucracy, inadequate infrastructure etc.) make it important that a geographically-based study be done on this location. These conditions will mediate the level of impact that these factors have on the longevity of the small, family-owned firms in Jamaica. Further, a research of this nature in a new geographical context will add some new insights to the literature.

To achieve the objectives of this research, the remainder of the work is organised as follows: in the next section is presented some critical information on the social, political, economic and cultural make up of the Jamaican society. This will help to contextualize the study. Following this contextualization, a review of the literature is undertaken. This review will focus on how each of the selected variables can impact the longevity of the firm. The following sections will present the research method, the research results and a discussion of the results. The final section presents some concluding remarks.

THE JAMAICAN CONTEXT

Jamaica is a small, open economy with a small market size as measured by its total population. The population in 2009 stood at 2.7 million peoples, according to the country's statistical agency (STATIN) report on population census. The economy depends heavily on the services sector which contributes over 60 per cent of its gross domestic product (GDP) (PIOJ, 2007). Economic growth for the last two decades has been anaemic with growth for the decade of the 1990s averaging around 1 per cent per year. Additionally, the economy carries a heavy debt burden with debt to GDP ratio running at over 113 per cent. This ratio represents one of the highest in the world. The government's heavy appetite for debt has crowded out private sector

firms, including small, family-owned firms from getting access to financing from the private market that is needed to modernise their plants and deal with operational expenses. This, no doubt, will have an impact on the longevity of the firms in this location.

The social indicators in Jamaica have shown better performance than their economic counter parts. The country has a literacy rate of over 87 per cent and a HDI of 0.77 in 2009. The majority of the population (61%) is between the ages of 15-64 years old. Only 7.5 per cent is above 65 years of age, which is the retirement age for males. Blacks are the dominant ethnic group in the population, with ethnic minority making up only 7.5 per cent of the population. The majority of the population (53%) are located in the urban centres with only 47 per cent in the rural areas. The life expectancy in the country is 73.5 years. In the developed world, most of these factors far exceed those of Jamaica. Literacy rate for example, in the US is at 99 per cent while over 80 per cent of the population live in the urban centre. These social indicators will no doubt have implications for the types of management that family business will practise. This in turn will have implications for the longevity of these firms.

The level of infrastructure development in Jamaica is also critical to the longevity of all firms. This is even more so for small, family firms which are normally located in the remote areas without well developed infrastructures such as the Plain Old Telephone Systems (POTS), electricity and potable water. Recently, the country has seen a massive expansion of its sea port and airports. There is also a massive road network project underway. The north coast highway aims to connect the most eastern parish to the most western parish, while Highway 2000 aims to connect the capital city to the most western parish. The aim is to improve the efficiency and reliability in the transportation of goods and services, and also the movement of human resources. This will no doubt reduce the cost of production to the firms.

Interestingly, since the 1960s, the country has moved from a political management strategy of protectionism to one of export led growth and a massive liberalisation of the economic sectors. This has given rise to the emergence of more small firms in the local economy. A lot of these small firms are owned by families. Rough estimates suggest that over 80 per cent of the firms in the local economy are family owned. This implies that the survival of the Jamaican economy will depend heavily on the longevity of these family businesses. It is therefore critical for managers and policy makers in Jamaica to get a clear understanding of the factors that impact on the longevity of these firms.

The above discussion shows that the structural factors in the Jamaican economy will tend to moderate how certain standard variables (e.g. location) will impact on longevity of the firm. As such, context specific study is critical. The urban rural dichotomy in Jamaica is not as wide as say the USA, which will impact on where firms are located. The literature below will highlight those factors that are seen as critical in impacting longevity of firms in general. These factors will be analysed in the Jamaican context to determine the ones that are most relevant.

THE EXTANT LITERATURE AND HYPOTHESES DEVELOPMENT

A large number of factors affect the longevity of all businesses including small, family-owned firms. Some of these factors are internal to the firm (e.g. the strategy that the firm pursues, its capital structure, the age of its owners, the ethnicity of the family, the structure of the family among others) while others are found in the firms external environment (e.g. the level of political stability in the country, the level of macro-economic stability, the literacy rate in the country, the life expectancy rate etc.). These factors are generally drawn from various theoretical arguments which try to explain the longevity of firms. These arguments come from industrial economics which posited that firms react to the events in their environment in order to maintain their survival (Williamson, 1975); the resource based view of the firm which argued that the firm's stock of resources is what determines its long term survival (Penrose, 1980; Bloodgood et al., 1996); institutional theory which suggests that firms do well where there are strong enabling institutions in the macro economy (Porter, 2008) and, organisational theory which suggests that corporate leadership is what determines the long term survival of firms (Minzberg, 2007). It is from these theoretical discussions that a number of factors that can impact the longevity of a firm have emerged.

No single research would be able to capture all the factors that impact on the longevity of the firm. The choice of factors to study will narrow down to those that are theoretically robust and empirically feasible. Given the difficulty of collecting data on family business in a small economy like Jamaica¹, the paper tried to overcome this problem by focussing on factors that are identified in the extant international literatures as being critical to longevity, are easily identifiable, and for which data can be obtained in the Jamaican context. Indeed, replicating these factors from the context of other studies into the Jamaican environment will provide evidence to theoreticians in the field, to build a general theory to explain the longevity of the small family firm. This will also provide specific insights to public policy makers in Jamaica, and other similar countries (e.g. Barbados, Trinidad, countries in the Indian Ocean etc) who are interested in stimulating the growth and development of more small and family firms.

SUCCESSION PLANNING

Most researchers argue that succession planning is the most important in determining the longevity of all firms, especially family firms (Ward, 1987; Trow, 1961; McGivern, 1978). Succession is seen as the ultimate test of a family business as it affects many components (e.g. operations, capital structure, sales, strategy etc.) of the family business (Gersick et al., 1997). This issue is so important for the family business because it deals with making the necessary preparations to ensure harmony in the family and, the continuity and success of the business (Fahed-Sreih & Djoundourian, 2008). For family businesses, healthy family relationship is critical for longevity and/or success (ibid. p. 61). Healthy family relationships will help family

members who manage the business to better overcome conflicts, rivalry and incompetence and so will lead to the long-term survival of the firm given that all other conditions remain conducive for business. When there is proper succession planning in place, it helps the family to engender healthy relationships. Researchers have found that personal relationship among family members has a strong influence on succession planning even over the need for profit maximization (Davis, 1986).

When a succession plan exists, it indicates that the current leaders in the family firm already have their successor(s) prior to departure (Fahed-Sreih & Djoundourian, 2008). However, succession planning has been influenced by a plethora of factors. These include, but are not limited to: attitude of family members (Birley, 1986); personal relations among relatives (Davis, 1986); level of interest of members of junior generation (Ward, 1987; Handler, 1989); gender and age of offspring (Ayres, 1990; Kaye, 1992; Ward, 2004); trust of family members who are active in the business (Lansberg & Astrachan, 1994); individual needs, goals, skills and abilities of potential successors (Stravrou, 1999). A number of researchers have cited the failure to put in place proper succession planning as the major impediment to the survival of the family businesses (Handler and Kram, 1988). This leads us to the first hypothesis:

H₁: There is a positive relationship between firms that possess a succession plan and their longevity.

FIRM SIZE

There is a rich literature on the impact of firm size on the longevity of the firm. This literature is generally captured under the research stream which analyses the relationship between firm size and performance as measured by profitability, exporting etc. For example, Malone (2002) looked at the relationship between firm size and business continuity and concluded that there is a positive relationship. This suggests that the larger the firm, the greater is its life span. Other researchers have also weighed in on the size and performance debate (e.g. Lundvall & Battese, 2000; Glancey, 1998; etc). Glancey, (1998) for example found that there is a positive relationship between firm size and growth. The assertion is that as firms grow larger in size, they will be managed by entrepreneurs with greater management skills and as such a more professional approach will be taken to ensure the long-term survival of the enterprise. Indeed, if the firm is managed merely for life style purposes (e.g. to satisfy employment needs, to be one's own boss etc.) than for business orientated purposes (e.g. wealth generation), then as soon as the life style goals are achieved the business will fail to exist. This seems to happen in the smaller of the small firms (Stanworth & Curran, 1976). Further, other researchers have also found that larger firms are more profitable than smaller ones (Majumdar, 1997), which suggests that they have a business orientation and are better managed thus having a greater chance of survival. This leads us to the second hypothesis:

H₂: There is a positive relationship between increasing firm size and the longevity of the firm.

INDUSTRY SECTOR

An analysis of the available literature has revealed that industry sector is significant in determining longevity in small firms (Knaup & Piazza 2007; Knaup 2007). In a study of American public and private sector firms over a seven year period, Knaup & Piazza (2007) revealed that firms in the education and health sector have the highest survival rates with a 46% and 45% survival rate respectively. The information sector had the lowest survival rate with 28%. While this is important, it is not enough however, to judge the success of a sector only by its survival rates. Knaup & Piazza (2007) noted for example, that despite the fact that the information sector had the lowest survival rate, its contribution to employment was greater than the education and health services sector. Industry sector is also critical in terms of venture capital injection (Knaup 2005). Life Science and IT sectors attract larger amounts of venture capital than other sectors hence, the implications for longevity are more positive.

Further, other researchers have also argued that sectors in which there is a higher level of competition, the level of efficiency of the firm will increase, *ceteris paribus*, the longer its life span. With more competition in a particular sector, the technical efficiency of the firms will increase. With increase in technical efficiency, the firm will grow and survive, while inefficient firms will stagnate and eventually exit the industry sector (Jovanovic, 1982). From this argument, it is clear that the characteristics and structure of the industry drive longevity. Indeed, although industries appear different on the surface, long-term survival of the firms in any industry will depend on the structure of their industry (Porter, 2008). The characteristic that seems to be most important is the level and intensity of the competition in the industry. This leads to our third hypothesis:

H₃: There is a positive relationship between highly competitive industry sectors and the longevity of the firms in those sectors.

EDUCATION LEVEL OF THE OWNER

Bates (1990) noted that educational level is the most significant human capital variable for identifying business continuance. He further stated that owner's educational background is a major indicator of the financial capital structure of new firms. Mohammad Al-Zubeidi, (2005) indicated that years of formal education and age are more often linked to the success of small business than are lack of degree and being young. Entrepreneurs and small business owners are more likely to succeed and sustain a profitable business if they have a college degree and are

older, which implies business experience. In the literature, higher levels of education of business owners increased their chances for business growth and success and the likelihood of survival is uniformly greater at increased levels of educational attainment (Robinson & Sexton, 1994).

Higher levels of education will better help owners to make strategic decision about the allocation of resources (Williams, 2009; Pena, 2002). The efficient allocation of resources will lead to growth and survival of the firm (Jovanovic, 1982). Indeed, managers with higher levels of education will also take a more business oriented approach to running their firm rather than a life style approach. The business approach will lead to better strategic decision making which will lead to growth and survival than the life style approach. The business oriented entrepreneur will also have a stronger proclivity towards expanding their firm in order to improve the probability of survival (Stanworth & Curran, 1976; Glancey, 1998). Higher education is critical for better strategic thinking which is important for gaining technical efficiency that will lead to growth and survival of the firm. Hence, the next hypothesis is:

H₄: There is a positive relationship between the owner's education level and the longevity of the small, family owned firm.

LOCATION

Runyan and Huddleston (2006) found that there is some association between the location of firms and longevity. Within small communities, as environmental hostility increases, small retailers relied less on focused strategy and the increased hostility leads to decreased retailer performance (ibid). It is also argued that firms located in rural areas are normally expected to be more profitable than those in urban areas (Glancey, 1998). The idea is that in urban areas, firms face higher costs for factors of production such as land and labour. This therefore will increase their cost structure and make it become onerous for them to do business. As such, they may exit their industry. Even with urban areas, the location between uptown and downtown does impact on the growth and survival of the firm. Researchers argue that downtown areas generally have a mix of both large and small firms in their vicinity, space constraints often lead to a majority of downtown businesses being small in size and scope (Runyan & Huddleston, 2006). One advantage of being in urban areas is that firms are better positioned to take advantage of changes in market conditions (Glancey, 1998). For example, they can be closer to their market and also suppliers, information source (e.g. government agencies, banks etc). This will give them a first mover advantage when market conditions change thus, enhancing their competitiveness and survival. As such, the final hypothesis is:

H₅: There is a positive relationship between firms that are located in rural areas and their longevity.

THE RESEARCH METHOD

The Sample

This research draws upon survey data collected on the operations of over 250 family businesses² in the Jamaican economy in 2005. These businesses represent about 1 per cent of the total population of firms in the economy. Unofficial estimates suggest that there are more than 360,000 micro, small and medium sized businesses in the Jamaican economy (Jamaica Gleaner, 2009). Although the sample represents a small portion of the population of the businesses, we tried to ensure representativeness by making sure that all the 14 parishes were covered. Indeed, the data revealed from this sample is very instructive and will shed light on a very important subject in the Jamaican context.

Because there is no established sample frame for family businesses in Jamaica, the research used the snowballing technique (Babbie, 2006) to develop a list of family businesses across the 14 parishes and all polling districts. The data gathering phase began with information the researchers could ascertain on family businesses from institutions such as the Small Business Association of Jamaica (SBAJ), Banks, Private Sector Bodies (e.g. Private Sector Organisation of Jamaica-PSOJ) and other umbrella business organisations. Respondents from those firms that participated were asked to name other similar family businesses in their location. This led to a total of over 250 firms being interviewed across all the polling districts in Jamaica. The tables below provide descriptive characteristics of the study sample.

Table 1A: Age Distribution of the Firms		
Years in Operation	Frequency	Valid Percentage
3	33	12.4
4 – 5	21	7.9
6 – 9	36	13.5
10 – 19	73	27.3
20 and over	100	37.5
Non Response	4	1.5
Total	267	100

Level of Education	Frequency	Valid Percentage
Primary	42	15.8
High	77	28.8
College	62	23.2
University	70	26.2
Other	7	2.6
Non Response	9	3.4
Total	267	100

Type of Business	Frequency	Valid Percentage
Publicly listed on the stock exchange	3	1.1
Proprietorship/ partnership	119	44.7
Registered Corporation	38	14.3
Limited Liability	70	26.3
Partnership	22	8.3
Non Response	14	5.3
Missing	1	0
Total	267	100

Number of Employees	Frequency	Valid Percentage
Under 5 persons	99	37.2
5 - 15 persons	105	39.5
16 - 30 persons	20	7.5
31 - 50 persons	14	5.3
51 - 100 persons	19	7.1
100 - 200	4	1.5
Over 201	5	1.9
Missing	1	0
Total	267	100

Table 1E: Distribution of the Location of the Firms		
Location	Frequency	Valid Percentage
Urban		
Kingston & St. Andrew	91	34.1
St. Catherine	17	6.4
Rural		
St. Thomas	2	0.7
Portland	8	3.0
St. Mary	13	4.9
St. Ann	31	11.6
Trelawny	10	3.7
St. James	28	10.5
Hanover	10	3.7
Westmoreland	18	6.7
St. Elizabeth	18	6.7
Manchester	9	3.4
Clarendon	12	4.5
Total	267	100

Table 1F: Distribution of the Possession of Succession Plans in the Firms		
	Frequency	Valid Percentage
Not Stated	28	10.5
No	112	41.9
Yes	127	47.6
Total	267	100

Table 1G: Distribution of the Industry Sector in which the Firms Operate		
Industry Sector	Frequency	Valid Percentage
Agriculture	16	6.0
Manufacturing	47	17.6
Service	196	73.4
Extractive	8	3
Total	267	100

The Research Instrument

The instrument used for the interviews covered a wide range of business related issues. These include: Demographic characteristics, Business Leadership, Ownership Structure, Succession Planning, Resource Planning, Governance and Citizenship and, Generational Information. The questions were developed based on a comprehensive survey of the extant literature, feedbacks from experts in the field and feedbacks from a pilot testing of the earlier drafts of the instrument. From the data collected, a number of variables were derived based on insights from the extant literature. In fact, this method of developing the instrument allows for the derivation of variables that are comparable with previous works in the field thus better aiding other researchers to build a stronger evidence base for future works.

The Variables used in the Study

The variables in this study were categorised into dependent and independent. The dependent variable in this case is longevity, as captured by the age of the firm. The independent variables include: educational level of the founder as measured by the highest level of schooling the owner achieved, the size of the firm as measured by the number of employees; the industry sector as measured by the productive sectors in which the firms operate as defined by the PIOJ³ and, the location of the firm captured by whether or not they are located in rural or urban areas. The choice of variables was informed by what is theoretically sound but empirically feasible. Given the difficulty of collecting data on small firms in the Jamaican economy, we had to use variables that were easily identifiable and respondents were willing to share information about. These firms are privately owned so they are under no obligation to provide data on their operations. This makes it difficult to access all the desired data. Table 2 below presents a description of these variables and how they are operationalized.

Variables	Definition	Operational measures
Longevity	Age of the firm i.e. time elapsed since the firm started operation	Continuous numbers
Education level	Highest level of school achieved	1= primary, 2= high school, 3=college, 4= university, 5= other
Size	Number of employees	Continuous numbers
Industry sector	Industry sector defined by PIOJ	1 = Agriculture, 2 = Manufacturing, 3 =Services, 4 = Extractive
Location	Place where firm domicile	1 =Urban and 0 = Rural
Possession of succession plan	Dummy variable	1= possession of a plan and 0= do not possess a plan.

Analysis Technique

Because the variables are non-parametric, the ANOVA technique was used to capture the relationship between longevity and the independent variables. This technique is very powerful as it is able to adequately deal with variables that are not drawn from a population with a normal distribution. In this case, the population from which the variables were drawn is not known therefore, the distribution of the variables is unknown. The ANOVA technique will provide robust results, although the normality assumption is being violated. The technique is preferred to the t-test because it has the ability to analyse situations in which there are more than one independent variable. It will give some indication as to how the independent variables interact with each other and their effects on the dependent variable. SPSS version 12 was used to model the results for this study. These results are reported in the next section.

THE RESEARCH RESULTS

Table 3 below highlights the results for the relationship between the various independent variables and longevity of the firm. Here, we will merely describe the results. An analytical discussion of these results including an explanation of what the findings really mean, will take place in the subsequent section.

The results above indicate that, of the five variables identified as critical factors impacting longevity in small family owned businesses, only three have a statistically significant impact. In other words, of the five hypotheses stated, the results in this section support only three. The significant variables have p-values less than 0.05 (5%) which suggests that the coefficients are significantly different from 0. Further, the mean values suggest that higher values are associated with longer life (longevity) for the firm. For example, in the location variable, the rural versus urban dichotomy suggests that rural firms tend to survive longer than urban firms. This is indicated by the mean score which shows a higher value for rural firms versus urban firms. A full explanation behind these results will be discussed in the next section.

DISCUSSION

This research has shown empirically that; the possession of a succession plan, the size of the firm, and the location of the firm all impact the longevity or success of small, family-owned businesses. In essence, three of the five hypotheses were supported. These findings lend support to previous empirical work in the area of longevity and succession planning in the firm (e.g. Fahed-Sreih & Djoundourian, 2008, Sharma et al., 2003).

Table 3: ANOVA results with Longevity as Dependent Variable				
	Mean	df	F	Significance
Succession Plan		1	14.82	0.000**
Yes	18.03			
No	13.59			
Education		5	1.21	0.304
Primary	18.14			
High School	15.94			
College	16.16			
University	13.96			
Other	12.29			
Size		6	5.79	0.000**
Under 5 persons	13.22			
5 – 15 persons	14.77			
16 – 30 persons	21.85			
31 – 50 persons	21.43			
51 – 100 persons	19.68			
100 – 200	22.25			
Over 201	26			
Industry Sector		4	0.75	0.561
Agriculture	18.88			
Manufacturing	16.66			
Service	15.24			
Extractive	10			
Location		1	6.64	0.01**
Rural	16.94			
Urban	13.87			
**indicates variables that are significant at the 5% level of significance				

It is widely accepted that the possession of a succession plan is crucial for the success and by extension the longevity of a business (Fahed-Sreih & Djoundourian, 2008). With the possession of a succession plan, a firm indicates who should take over the reigns of the business

when the current leader(s) depart. This will help to reduce the level of uncertainty associated with succession planning and thus help to alleviate disruption that may lead to the break up of the business. Succession planning signals quite early, the person who will own the estates and control the business. This level of transparency leads to less tension among family members when there is inter-generational transfer and, in most cases, allows the most competent members of the family to operate the firm. These benefits from succession planning enable the firm to survive much longer as a result of reduced family tension and uncertainty about the future of the business.

While succession planning is critical for the firm, the bigger issue of intergenerational transfer is critical for longevity of the firm. As the business moves from one generation to the next, issues such as education level, training, global outlook of the successor, among other things have to be taken into consideration. Because these small firms want to maintain the character of the owners but are bound by family tradition, as succession occurs across generation, the successor may not have the latitude to make significant adjustments to the *modus operandi* in the business operation. This may impact on how well the business can adapt to the extant environment in which it operates. There is no doubt that the nature and characteristics of the business environment change, across generational transfers and thus the firm has to adapt in order to survive. If the successor's generation is more educated than the one before, this may see radical changes in the business operation which sometimes will conflict with family traditions and could cause some tension especially if the founder is still alive at the time of the intergenerational transfer.

The size of the firm was also found to be critical for longevity. In this case, the results show that larger firms have a greater chance of survival than smaller firms. Most of the literature on size and exporting (e.g. Calof, 1994, Philip, 1998, Hall & Tu, 2004, Williams, 2009) argue that size is important because it provides economies of scale that is critical for survival in a competitive market. Larger firms, have a greater possibility of deriving economies of scale in production, marketing and distribution. Size therefore will enhance the ability of the firm to compete and improve its ability to survive (Bernal, 2006). Indeed, size also, is a signal of resource capacity which is needed for succession planning. Succession planning requires resources to train the heir, to compensate generations that have retired among other things. Critically, there are strong benefits to be derived from having a proper succession plan which will lead to increased longevity of the firm.

The location of the firm was also found to be a significant factor that influences longevity. The results show that firms in rural areas are expected to have a longer life than firms in urban areas. This could possibly be reasoned that in urban areas, the level of competition is very intense therefore, not many family firms have the capability to withstand this competition. This will eventually lead to their withdrawal from operations. On the other hand, in rural areas, competition is less intense due mainly to the lower concentration of businesses in these areas.

Therefore, the few firms that exit are more likely to have a longer life even if they are not very competitive.

Although three of the hypotheses were supported, the data did not support two, which in some cases were expected to have a strong relationship with longevity. This is not surprising however, as there are some strong rationale why these variables were not found to be significant. The justification is explored below.

The education level of the owner and industry sector that the firm operates in were not found to be significant factors that influence longevity. This however, is not to suggest that these variables are not important for the longevity of family firms. For example, education provides the owners of these firms with a broader perspective on how to view business, deal with complex transactions and planning for survival. These attributes are important for the longevity of the enterprise. However, the operationalization of the education variable did not allow for these benefits to be captured through statistical analyses. The variable merely measured the level of qualification that the owner possesses. While qualification is important, it is not sufficient to capture those benefits to be derived from it and that are important for running an enterprise. Therefore, the statistical insignificance of the variable should be interpreted as education not being important in ensuring the longevity of a firm. The statistical insignificance seems to be derived from the very crude manner in which the variable was measured.

The industry sector was not found to have a statistically significant impact on the longevity of the small family firms in Jamaica. To put another way, the results suggest that the sector in which the firm operates does not determine its life span. On the surface of it, this may seem rational. Indeed, the business strategy literature argues that firms need to develop strategies so that they can gain a competitive advantage and outperform their industry (Porter, 1980; Ghemawat, 2002). However, as Porter, (2008) demonstrated, industry structure helps to drive performance of the firm. Industries that are highly competitive will see greater attrition of business than those that are less competitive. The intensity of the competition will be too much for some firms to handle. If the firm cannot compete effectively, it will have to withdraw from doing business, irrespective of which sector it operates in. In the case of this study, the sectors identified are not much different in-terms of structure, so the level of competition does not vary significantly across sectors. It is this reality that may explain why industry sector is not so significant in this particular study. In context where competition varies significantly across industry sectors, then it should impact significantly on longevity of firms.

CONCLUDING REMARKS

In this paper we have empirically tested five hypotheses relating to factors that influence the longevity of the small, family-owned firms. The findings support the notion that; the possession of a succession plan, the size of the firm and, the location of the firm all impact its longevity. These factors show a positive relationship with the longevity of the firm. In essence,

the interpretation is that, if a firm has a succession plan in place, it will have a better chance of being in business longer. Also the larger the small firms, the greater the chance of it being in business for a longer time. As it relates to location, firms that are located in areas that do not have a high level of competition will tend to stay in business longer than those in areas where competition is fierce and intense. These findings lend support to the theoretical and empirical literature on longevity of the family-owned firm.

The domestic environment in which firms operate will impact on their chance of survival (Etemad, 2004). Analysing longevity therefore has to take domestic environmental factors into consideration. Context specific studies are therefore germane to this area of work. In this regard, a huge gap exists for this type of work in small, open economies. This study makes a contribution to this gap. The major contribution of this work is its focus on small, family-owned firms from a small, open developing economy, Jamaica. The majority of studies on correlates of longevity focus on the developed world where socio-economic conditions (e.g. literacy rate, health care, technological advancement, macro-economic stability etc.) are more sophisticated, which create a benign enabling environment for businesses to survive. To effectively generalise the findings from these works, they will have to be tested in different geographical context. This study has done that. The findings from this work will aid theorists in the field of entrepreneurship and small business to develop a better theoretical understanding of longevity in small firm. Critically, the study also reinforces previous findings in this field of work, which will help researchers to build a strong evidence base on the subject.

IMPLICATIONS OF THE FINDINGS

The findings in this study have some implications for future research, managers in the family firm and public policymakers. Future researchers could extend the study to include a number of other variables such as family attitude, government fiscal and monetary policies, ethnicity etc. Further, with a larger sample size, more disaggregated analysis could be carried out. For example, analysis could be done at the sector level to see if the factors are consistent across sectors.

If small firms are to be the main engine for economic growth and prosperity of any nation, as most policy makers generally espouse, these firms will have to have a longer life span. The mortality rate has to be lowered. Public policymakers can help by ensuring that the correlates identified as impacting on longevity are found in the business environment. For example, there should be proper zoning laws to ensure that firms have good location where they can expand their outlet. Policymakers should also put technical support in place to help these firms to design proper succession plans and a formal organisation structure that is transparent. Generally, family firms operate with informal structures because they do not have to report to a board of directors or because they do not seek external financing; so they have no real obligation to operate formally. This informality however, is not good for long-term survival.

As for managers in these firms, they should look at the factors over which they have control and make sure they are present in their firm. For example, the possession of a succession plan is found to significantly influence the longevity of the firm. Managers should therefore make sure that they put in place a succession plan in order to improve the firm's life span. Once the business is established because exigencies may arise, owners should make sure there is some succession plan in place and communicated to stakeholders early so that there is a clear replacement if any shocks should hit the firm. The plan should not be rigid, as heirs may become uninterested or their goals have changed, so the plan must be revisited periodically in order to make sure the right person is chosen for the job when the time arises.

LIMITATIONS

Although the results from this study are robust, there are still some limitations. The small size of the sample is one such limitation. However, this does not mean that the results are not instructive. They may suffer from generalizability (a common external validity problem in most empirical studies) but they provide some insights into the phenomenon observed. Another limitation is with the operationalization of some of the variables. For example, the education variable needs to be operationalized in such a way that it is able to capture the benefits to be derived from having a formal education. Merely having a certification does not capture the benefits of education. Taking these issues into consideration would add richer insights to the study.

ENDNOTES

¹ In small economies like Jamaica, these societies are referred to as closed that is, people generally know each other very well, especially if you are in public life or business. As such business people do not tend to divulge critical information about their operations. The information that is generally given is information that can be accessed in the public domain. This does impact on the level of detail that one can study when looking at business issues in these economies. For a good understanding of the sociology of doing research in small economies like Jamaica, see Tindigarukayo (2001).

² Family-owned businesses refer to enterprises in which a family has either significant influence or control regardless of the size of the family holdings. The definition of family here includes nuclear family (spouses, off-spring, adopted children); immediate family (nuclear plus grandparents, parents and siblings); and extended family (aunts, uncles, cousins, nieces, nephews and in-laws of both offspring and adopted). The body of work on family business uses similar definitions (see for example, Donckles & Frohlich, 1999; Rosenblatt et al., 1985 etc). The advantage of the definition used is that it makes it easier to identify the unit of analysis. In the case of Jamaica, this is critical; as it is very difficult to gather data on the subject matter.

³ PIOJ is Planning Institute of Jamaica. This organisation is responsible for economic planning in the economy. The classification for industry sector was taken from their categorization.

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THE DETERMINANTS OF THE SUCCESS OF MICROLENDING: A COMPARISON OF IRAQ AND THE UNITED STATES

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ABSTRACT

Microfinance institutions (MFIs) have become fixtures of the international financial community by successfully supporting entrepreneurship and by lending money to needy people everywhere. The development of MFIs in Iraq has been actively supported by the United States (US) government, especially the United States Agency for International Development (USAID-Tijara), while US-located MFIs have received little support from the federal government. MFIs in Iraq and the US operate quite differently and under dissimilar regulatory schema. These differences have impacted their economic successes. MFIs in Iraq have been very successful in creating jobs and have experienced excellent repayment rates, while those in the US have experienced high default rates, failures in meeting program goals, and a general lack of self-sufficiency or sustainability. This article will examine the differences between microlending efforts in Iraq and the US, and compare the specific reasons for the success of the USAID programs in Iraq and the general failure of microlending and microcredit efforts in the US.

INTRODUCTION

Microfinance institutions (MFIs) have become fixtures of the international community. For over thirty years, MFIs have successfully supported entrepreneurship by lending money to needy people all over the world (Richardson, 2009). The growth of the microfinance and microlending has spawned considerable research interest in this industry and its international growth. Much of the prior research has examined the product and service offerings of MFIs, management best practices, MFI clientele, and policy issues and their impacts (see Brau & Woller's (2004) literature review of microfinance). Brau and Woller (2004) found that scholarly inquiries into microfinance and microlending have generally lagged behind industry developments.

In Iraq, the United States government through the U.S. Agency for International Development (USAID) has successfully created programs that have provided more than 132,000 microloans worth a combined value of over \$300 million. The loans have averaged \$1500 at 15-18% interest rates with a repayment rate of over 98%. (US Federal News Service, 2009). The

microfinance loans from MFIs working with USAID have resulted in more than 130,000 jobs being sustained or created (Iraq Microfinance Industry (IMFI), 2010). In contrast, microfinance and microlending, while achieving considerable success internationally, have not generally succeeded in the United States. Microlending in the US has experienced high default rates, failures in meeting program goals, and a general lack of self-sufficiency or sustainability (Richardson, 2009). Sustainability as used herein refers to survivability, not the social responsibility focus that sustainability has begun to assume.

This article will examine the factors that contribute to the success and failure of microlending efforts, and compare the specific reasons for the success of the USAID programs in Iraq and the general failure of microlending and microcredit efforts in the US.

DETERMINANTS OF MICROLENDING SUCCESS/FAILURE

Microfinance generally refers to the informal and formal arrangements that offer financial services to the poor (Brau & Woller, 2004). While it has existed for centuries, microfinance came on the international scene during the 1970s as a serious effort to create and formalize financial services for the poor (Richardson, 2009; Brau & Woller, 2004). Domestic use of the terms “microenterprise” and “microfinance” did not appear for another decade (Burrus, 2005).

A microenterprise is a business with five or fewer employees. Many of these businesses have no employees other than the owners (Burrus, 2005). The purpose of microfinance is to provide economic opportunities, including financial capital and services, to the poor in the hope that the cycles of poverty can be broken through new business development (Crabb, 2008). Microfinance offers people living in poverty access to basic financial services, such as loans, savings, money transfer services, and insurance needed to run their businesses (Consultative Group to Assist the Poor (CGAP), 2009). At best, commercial banks in developing countries serve only 20% of the population (Richardson, 2009). MFIs have stepped in to fill this void, lending to individuals that traditional lenders have ignored due to high transaction costs and risks (Richardson, 2009). There are now thousands of MFIs servicing 100-200 million of the world’s poor (Brau & Woller, 2004). The individual amount of the microloans in developing countries ranges from \$10 to over \$1000 with durations usually of less than two years. Borrowers are not usually required by microlenders in developing countries to put up collateral or undergo credit checks (Richardson, 2009).

Since the 1970s, MFIs in developing countries have been very successful, while those in the United States have seen limited success. Defining success for MFIs has been problematic. MFIs normally have dual objectives of financial development and social improvement. Financial success can be measured by the attainment of two standards: self-sufficiency and sustainability, i.e., operating without outside resources and subsidies. Whether an MFI meets the needs of microentrepreneurs or creates social improvements is more difficult to ascertain.

Theoretically, capital should flow to the poor and the microfinance industry should not be necessary (Schmidt, 2009). However, the realities of investment risk, asymmetric information for both lenders and debtors, high transaction costs, and the presence or absence of legal institutions and systems, all work to present challenges for offering microcredit by commercial financial industries (Schmidt, 2009). These challenges are compounded by over-emphasis by many financial institutions on the need for collateral, a tendency to ignore the debtor's willingness or ability to pay, a poor culture of repayment, lack of coordination and support between MFIs, business organizations and the government, and the divergent aims of microfinance itself (Knight, Hossain, & Rees, 2009).

There may be many causes for the reluctance of conventional financial institutions to serve the poor (Schmidt, 2009). There may be socio-psychological reasons, such as social prejudice, stubbornness and ignorance. More likely it is because poor borrowers are not perceived as profitable. The risk of lending to them is too high. The costs of the lending transaction are too great. The borrowers often have no collateral and no credit history. The costs to enforce the loan agreement may even exceed the amount of the loan itself (Schmidt, 2009).

Faced with exclusion by conventional banks or exploitation by loan sharks, the poor can gain access to credit through microfinance institutions: non-governmental organizations (NGOs), charitable institutions, self-help institutions, or public banks, organizations that often pursue objectives other than just making a profit. The common feature of these institutions is the pursuit of both economic (profitability) and social (impacting the lives of their clients) endeavors (Schmidt, 2009).

MFIs in developing countries have been recognized for their innovative means of delivering credit. Group lending is one way to ameliorate the problems arising from asymmetric information. Network theory recognizes that parties cooperate by virtue of the mutual benefits they will receive and reciprocate. Among networks there is a high commitment to cooperate among the interdependent parties (Scott, 2003). Under group lending, the borrowers monitor themselves, eliminating the need for providing risk information to the lender. The group networking and peer-mentoring associated with group lending add to its success (Richardson, 2009). In addition to group lending, innovations in microfinance in developing countries include flexible repayment schedules, public repayments, and flexible collateral (Armendáriz de Aghion & Morduch, 2005).

Institutional theory highlights how rules enable and/or constrain organizational decisions. The theory recognizes the importance of history in shaping the rules, routines and processes that structure an organization's behavior (March & Olsen, 1989). Rules of operation are history-dependent and can include both formally codified standards and informal routines or norms. Rules are embodied in the policies, procedures, routines, and conventions around which activities are constructed (Scott, 2003). The rules can cause institutional inertia, which along with path dependency, can inhibit innovation by financial institutions and economic expansion in developing economies (Pei & Xiangping, 2009).

Financial markets have particular characteristics which shape, and are shaped by, the transaction costs paid by both consumers as buyers and financial service providers as sellers. Transaction costs are often hard to measure in practice, and will vary uniquely for each buyer-seller exchange (Porteous, 2004). They take two main forms: 1) Ex ante costs, which include the costs of search (for both buyers and sellers) as well as the costs of contracting; and 2) Ex post costs, which include monitoring the contract during its term and enforcement of contractual rights (Porteous, 2004).

Using transaction cost, network, institutional, and competition theories, we have identified some differences between the microlending industries in Iraq and the US (see Table 1). These differences and their effects on the success or failure of MFIs are discussed in the next sections of the paper.

	United States	Iraq
Formality of Lending System	Formal Highly Regulated for Banks and Commercial Lenders (CDFIs) Unregulated for NFPs	Informal Unregulated
Economic Freedom	High	Low
Transaction Costs	High	Low
Ex-ante	Individual Business Loans	Group Loans
Risk Avoidance	Business Plan Collateral Credit History	Peer Recommendations
Ex-post Enforcement	Costly	Societal Pressures
Regulatory Regime	Usury Laws / Interest Rate ceilings Capital Holding Requirements for Commercial Lenders Conservative	Innovative
Markets (Dyal-Chand, 2005)	Formal (structurally developed) – Need for more competitive analysis	Informal (structurally under- developed)
Government Support	Mixed	Strong

US-LED MICROLENDING IN IRAQ

Microlending is a relatively new industry in Iraq (USAID-Tijara). Before 2003, there was no microfinance industry in Iraq. While loans were made to state-run enterprises and some small businesses during the Saddam Hussein regime, financial capital was often available only to those

loyal to the regime. Entrepreneurs without political connections had no sources of capital except loan sharks who charged usurious interest rates (IMFI, 2010).

Between 2003 and 2006, there were only three MFIs in Iraq and those were operated by international NGOs. The Cooperative Housing Foundation, ACDI/VOCA and Relief International were the sole providers of microfinancing in the country at that time (USAID-Tijara). Currently, there are ten microfinance institutions (MFIs) operating in Iraq's 18 governorates. The loans to micro and small business enterprises range from \$500 to \$25,000 in size with an average duration of 12 months. Interest rates vary depending on loan size and the business's location (IMFI, 2009).

The USAID began the Izdihar project in 2005; it was terminated in March 2008. The Izdihar project began the efforts to create a sustainable microfinance industry, bank lending for small and medium size enterprises, business development services and training, investment promotion, and trade reform (USAID-Tijara). In 2006, the Izdihar project, in conjunction with the US military, created and funded the first indigenous Iraqi MFIs: *Al Bashaer* in Baghdad and *Al Aman* in Kirkuk. When the Izdihar project was terminated in 2008, six additional MFIs had been established (USAID-Tijara).

The Iraqi MFIs are located in different parts of the country (see Figure 1). They adapt their financial services to local borrowers' requirements. Some Iraqis have complained about the charging of interest on loans, a violation of the Koran. In response, the MFIs have offered *murahaba* Islamic loans. The major difference between a conventional loan and an Islamic loan is that a conventional bank charges interest while an Islamic lender does not. Under the *murahaba* loan, a service charge is levied instead of interest, allowing the lender to make a profit. For example, instead of lending a home builder \$10,000 at 12 percent interest to purchase building materials, the Islamic lender will buy \$10,000 worth of materials for the builder and then sell him those materials for \$11,200. The lender still earns a 12 percent profit on the transaction. The final result is the same in both the conventional and *murahaba* loans. The latter differs only in that it follows the Koran's prohibition against charging interest (IFMI, 2009).

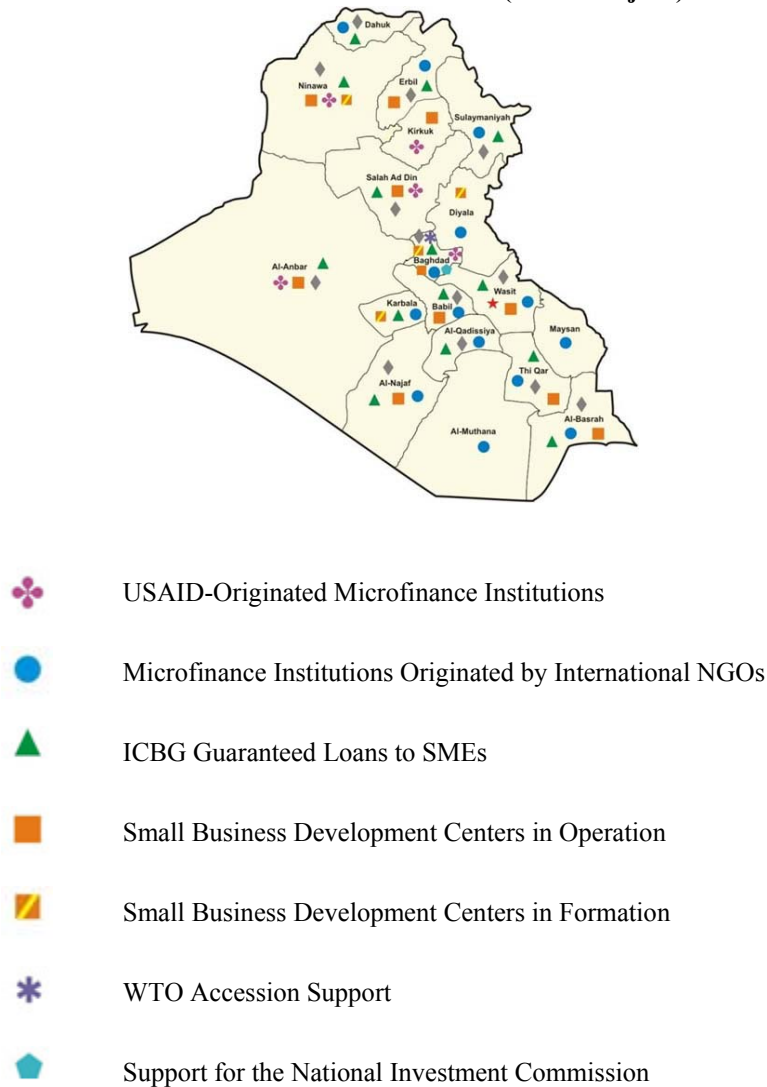
Since July 2003, when the first MFI working with the USAID began operation, some 200,000 loans worth more than \$370.7 million have been made (IFMI, 2009). Over 75% of the microloans were made to start or improve businesses in production, services, agribusiness, and trade. The remaining loans were for home improvements which supported home-based and cottage industries. Private residences are often the locales for many neighborhood businesses, such as barbers, cosmetologists and seamstresses (USAID-Tijara)

Microloans make differences in peoples' lives. The following stories are not uncommon, but are more the norm for modern day Iraqi businesses.

Adla Saleh Azez in the city of Dohuk used three microfinance loans to create the Havel Academy of Sewing where Adla teaches professional sewing skills to Iraqi women. "These women come to me to learn how to make a living sewing," explains Adla. "Most return to their villages to set up their own businesses." Adla plans to apply for a fourth loan which she will use

to purchase patterns and equipment in Turkey to make wedding dresses. She adds: “The [MFI] loans ... have made a real difference in the lives of dozens of women, myself included.” (IFMI, 2009).

Figure 1
USAID-TIJARA Outreach Activities (USAID-Tijara)



Muthana Idan Kabul is an Iraqi citizen who owns and operates a tea café in the Karkh area of Baghdad. During the worst of the sectarian fighting, insurgents would steal his café’s furniture and even set his shop on fire. This did not stop him from operating his business. He received a \$2,500 (US) loan from a USAID-backed MFI to improve his business. He has since opened a bigger shop and bought new tables and chairs (Block, 2009).

Hamzi Abid Ali grows grapes in the town of Balad. He has grown grapes there for many years, starting during the time under Saddam Hussein. He stated that his income has more than quintupled since receiving a \$2,400 (US) loan from the Al-Baydaa Centre, a US-backed microcredit institution. He was able to buy a new irrigation system and well pump that has allowed him to expand his business operations and help him speed up repayment of the loan (Fifield, 2009).

In 2008, the Tijara project became the successor to the USAID's Izdihar project. *Tijara* means trade in Arabic. The Tijara project is a three to five year program funded by the USAID to promote private enterprise growth and employment in Iraq. The project focuses on Iraqi communities and provides services that will stimulate businesses and provide greater access to loans and financial services (USAID-Tijara). The mission of the Tijara project is: "to promote economic growth and employment in Iraq by increasing private sector access to finance, in particular for micro, small and medium enterprises. This objective is fulfilled by stimulating microfinance institutions and private banks to increase loan volume and diversify their services and clients; by creating and supporting indigenous providers of business development services; and by working with the Government of Iraq to develop an improved enabling environment for increased trade and investment in the private sector." (USAID-Tijara).

USAID-Tijara and the Iraqi government have created Small Business Development Centers (SBDCs). The SBDC services range from offering microloans to develop new businesses to offering basic business training courses to help educate the Iraqi citizenry about how to manage a business. The SBDCs have created a voucher system to provide individuals with the financial resources to pay for the business education programs. The SBDCs also offer assistance for creating business plans and help entrepreneurs develop businesses from the ground up in areas that vary from taxi drivers to new hospitals (Small Business Development Centers in Iraq). Further, SBDCs sponsor business conferences, host trade fairs, and provide business and consulting services. While the SBDCs have not attained sustainable status, this is a long-term goal. The most critical service SBDCs perform, however, is linking aspiring and struggling entrepreneurs with microfinance institutions and banks that have capital to invest in the local business economy. It is interesting to note that in the Frequently Asked Questions section of SBDC's website, the agency was asked if there was an age limit on receiving assistance from the SBDC. The response was intriguing: "We would expect that a person who wants to create a business or has an idea should be 15 years of age or older." (Small Business Development Centers in Iraq).

To reduce risk and ensure repayment, Iraqi MFIs often require borrowers to provide a guarantor, who usually is a government employee. This safeguard has caused many of Iraq's poorest citizens to be excluded because they lack friends within the government. To include more borrowers and reduce transactions costs, MFIs working with USAID-Tijara program offer group loans. These loans are structured so that a borrower can receive a small loan (typically \$650) by forming a group wherein each member serves as a guarantor for the others. During a

four month period of 2009, 8,345 Iraqis (of whom 17% were women) received group loans collectively totaling \$8.9 million (IMFI, 2009). In order to help the very poor, microfinance institutions in Iraq now are offering solidarity group loans to eight people or fewer. The group's collective promise, that every person will repay his or her loan, serves as the collateral for the loan. Group loans have been made to women's groups, handicraft associations and people referred from Iraq's 12 SBDCs that are supported by USAID-Tijara and Provincial Reconstruction Teams (IMFI, 2009; USAID-Tijara).

The Iraqi government has recognized the need to grow a strong private sector. The government understands that a modern free market economy and a favorable legal environment are necessary for Iraq to join the global economy. There has been substantial progress in the government's efforts to establish a business climate conducive to economic growth (USAID-Tijara).

As of February 2010, there are 58,852 outstanding microfinance loans in Iraq with a total value of \$82,855,717 (US) (USAID-Tijara). The primary goal of the Iraqi microfinance industry is to provide quality financial services, mostly through loans, that will stimulate economic growth and create new and higher-paying jobs. The Tijara program assists in these endeavors by providing business development services and creating a sustainable microfinance industry (USAID-Tijara). Despite operating under the challenges of an insecure political environment, including continued sectarian violence, inadequate sources of human capital, and an underdeveloped legal and regulatory schema, MFIs in Iraq have displayed significant portfolio growth and high loan repayment rates – they are succeeding.

MICROFINANCE IN US

Despite the success that microlending has experienced internationally, efforts to support entrepreneurship of poor people in the US have been generally less successful (Burrus, 2005). US MFIs have been neither efficient (they have failed to become self-sufficient), nor effective (they have reached less than 1% of US microentrepreneurs) while suffering higher default rates than their international counterparts (Richardson, 2009).

US microlending began in the 1980s modeled after the programs established in the international context. Microfinance is a relatively young industry with most MFIs being created since 1995. The industry is very fragmented with many smaller lenders (Burrus, 2005). US MFIs are typically not-for-profit organizations (NFPs) that make loans usually for under \$25,000 with the average loan about \$10,000. The demand for microlending services in the US far outweighs the suppliers (Burrus, 2005). There are over 13 million microentrepreneurs in the US. Most are self-employed individuals who have no or few employees (Burrus, 2005). Many cannot obtain loans from traditional commercial banks due to the requirements of those institutions for a credit history or collateral. Unlike their international counterparts, US microfinancers usually do not make group loans, thus failing to utilize the benefits of networking (Richardson, 2009).

The US MFI industry is usually broken into two types: either credit-led – primarily offering credit and financial services, or training-led – primarily offering training and technical services. Training-led MFIs are concerned with business plan creation (Burrus, 2005). Training-led organizations often offer courses for feasibility studies, business plan development, and general individual preparation for operating a business. Additionally, classes or one-on-one assistance in tax preparation, marketing, technology utilization, and finances are available (Burrus, 2005).

While the need for microfinance in the US may never be greater, traditional financial institutions have not provided loans to microentrepreneurs. Most commercial banking institutions will not lend to individuals who lack a credit history or collateral. The US microfinance industry has been characterized by scale economies; larger lenders are more efficient and cheaper to run. However, MFI inefficiency, as measured by the lack of MFI self-sufficiency and sustainability, also characterizes the industry (Burrus, 2005).

While most not-for-profit microlenders in the US are unregulated – the only restrictions are general prohibitions within the Internal Revenue Code, state corporations laws, or consumer protection acts – US commercial lenders are highly regulated. These regulations increase transaction costs. The US microlending market suffers from both high ex-ante and ex-post transaction costs. It is expensive to gather the necessary information on potential borrowers, as well as to monitor and enforce loan repayments. The norm for US banks is to require borrowers to provide collateral, credit histories, and/or business plans in order to secure loans. These policies and procedures increase transaction costs. Information asymmetries occur on both sides of transactions. MFIs lack information about borrowers, an ex-ante cost, and borrowers have limited knowledge of or experience in financial or credit markets. US MFIs have failed to adequately address the information deficiencies of borrowers (Richardson, 2009). The lack of collateral affects both types of costs. Ex-post transaction costs are also quite high in the US. The costs to enforce a loan agreement through the court system in the US can be prohibitive. Further, state usury laws prevent lenders from charging higher interest rates to offset these expenses. The limits on interest rates limit lenders' returns and have adversely affected MFI sustainability (Richardson, 2009).

Further, the regulatory schema is severely restrictive. Under capital holding requirements, banks are required to hold portions of their capital against each loan they make. “The more risky the loan, the greater the amount of capital the bank must hold.” (Richardson, 2009: 932). These requirements make it more difficult for conventional financial institutions to make microloans.

Previous research (Richardson, 2009; Dyal-Chand, 2005) has attributed the differences in the success of MFIs between developing countries and the US to differences in market structures. MFIs in developing countries have had greater success because the markets in which they are located are “less formal” – lacking in entry barriers and market saturation. The informality allows entrepreneurs to transact business more cheaply, i.e., without extensive transaction costs. In contrast, US markets are more mature in structure and in product offerings.

US entrepreneurs need more market information and are required to perform more analyses, especially of the feasibility of their business models.

Lastly, government support for the US MFI industry has been previously mixed. There has been a general lack of federal funding for MFIs due to budget deficits. Plus, the Bush administration was criticized for its general lack of interest in microlending (Burrus, 2005).

The transaction costs present in US MFI industry together with regulatory restrictions on financial institutions have hampered the development of MFIs. While there have been calls for regulatory reform (Richardson, 2009), due to the structural and operational norms of financial institutions, MFI success in the US has been spotty.

CONCLUSION

The United Nations declared 2005 as the International Year for Microcredit to promote and increase the public's understanding of microfinance and microlending (UN, 2005). Muhammad Yunus and his Grameen Bank, a microlender in Bangladesh, won the Noble Prize in 2006 (Nobel Prize, 2006). Microfinance and microlending are now mainstays of international finance (Richardson, 2009). While microlending has positively affected the lives of hundreds of millions of people, there are still many more who have had no access to the services of MFIs (Crabb, 2008).

There are substantial differences in the operations of MFIs in Iraq and the US, ranging from how each approaches transaction costs and innovation to differences in their markets and the presence of governmental support. In Iraq, MFIs appear to have achieved considerable success. The experience of MFIs in Iraq supports the theory that a factor in the success of microlending is the presence of free markets (Crabb, 2008).

A study by the United Nations found that Iraqi men between the ages of 15 to 29 faced an unemployment rate near 30%. Microfinance loans made through the joint efforts of USAID-Tijara and Iraqi MFIs were instrumental in creating or sustaining 130,000 jobs. The study found that people with jobs did not join militias. Many of the group loans were held by former members of the Mahdi army who were able to earn more money as business owners than they did serving religious extremists (IMFI, 2010).

Despite the prior lack of government interest and support for microlending in the US, government support for microlending in Iraq stands in sharp contrast. Structural differences in markets are not the only answer. US regulation of financial lending institutions severely restricts microlending. The need for regulatory reform is great (Robertson, 2009). The current recession should provide opportunities for microlenders as the declines in the job market have forced many laid-off individuals to seek self-employment as a solution. However, the operational and regulatory structures of the US MFI industry have impeded its efficiency and effectiveness.

Microlending globally has positively affected many lives (Crabb, 2008). "We make around 220 loans a month that are collectively worth about \$228,000," says *Al-Mosaned*

Executive Director Wakkas Noori. “Our loans keep widows in their homes and allow young men to turn their dreams into businesses.” However, Wakkas Noori observed that the biggest difference between microfinance and banking is one of social responsibility. For him, “[b]anking is all about money, [but] [m]icrofinance is about people.” (IMFI, 2009). While much has been done, there are still many more people who have no access to the services of MFIs. This will continue to be the challenge for both Iraq and the US on both the operational and policy levels.

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THE PERCEIVED STRATEGIC VALUE OF E-COMMERCE IN THE FACE OF NATURAL DISASTER: E-COMMERCE ADOPTION BY SMALL BUSINESSES IN POST-KATRINA NEW ORLEANS

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ABSTRACT

Because small businesses rely so much on the local economy, those in New Orleans have struggled to survive in the face of the mass population exodus from the New Orleans area following Hurricane Katrina. The adoption of e-commerce would seem to be a natural coping strategy for these businesses while waiting for their local customer base to return to the area. However, even with the emergence of e-commerce as a phenomenon with many potential advantages and benefits for business, many small businesses do not see the strategic value of e-commerce, resulting in limited adoption in the small business sector. Within this context, this study examined the factors that influenced the perceived strategic value of e-commerce in small businesses in New Orleans following the natural disaster of Hurricane Katrina. The results showed that organization compatibility, entrepreneurial mindset, and industry competitiveness influence perceptions of the perceived strategic value of e-commerce by small businesses.

INTRODUCTION

The impact of Hurricane Katrina has resulted in serious implications for small businesses in New Orleans, leaving those businesses as one of the biggest commercial casualties. With the instant complete loss of markets due to this natural disaster, the greatest challenge for these small businesses by far has been the need for displaced residents to return. Because small businesses rely so much on the local economy, they have not been able to recover at the same rate as larger businesses and corporations. Hurricane Katrina has made these businesses modify the way that they sell, market and produce goods; technology has also called for businesses to transition the way they do business (Bring New Orleans Back, 2008).

Among the barriers faced in the post-Katrina era by small businesses in New Orleans are the reduced rate of tourism to the city and the inability to reach consumers outside the bayou. This is where e-commerce can be an effective tool in rebuilding the small businesses of New

Orleans. A phenomenon that is emerging rapidly among businesses all over the world, E-commerce can be described as the process of buying, selling, or exchanging products, services, or information via computer networks, including the Internet (Chaffey, 2004; Turban et. al, 2006). The benefits of e-commerce to an organization include access to new global customer markets, the creation of new selling channels, and reduced costs of doing business (Chaffey, 2004; Saloner & Spence 2002; Chaudhury & Kuilboer, 2002; Turban et. al, 2006).

Despite the benefits of e-commerce, its adoption by small businesses has remained limited (Gallup, 2008). Although some research has been conducted on the adoption of e-commerce in small businesses (e.g., Grandon & Pearson, 2003; Mirchandani & Motwani, 2001), the post-Katrina impact on the small business environment in New Orleans has produced a unique case in e-commerce adoption among small business. Also, much of the research in e-commerce studies has focused on e-commerce consumers rather than on small business owners who fund and make the ultimate decision on in e-commerce adoption of their organizations. The purpose of this research is to identify the factors that influenced perceived strategic value of e-commerce adoption by small business in post-Katrina New Orleans.

LITERATURE REVIEW

The Technology Acceptance Model (TAM) has been widely used to explain adoption of e-commerce. TAM was originally developed as an information systems theory by Davis (1989) to model how users come to accept and use a technology. Specifically, TAM proposes perceived ease of use (PEOU) and perceived usefulness (PU) as influencing factors for technology acceptance. Since its introduction, TAM has provided a basis for explaining adoption behavior in various contexts (Venkatesh et.al., 2003).

Another popular theory that has been used to explain technology adoption is that of diffusion of innovation. According to Rogers (2003), diffusion of innovation is the study of how, why, and at what rate new ideas and technology spread through cultures. Diffusion of innovation theory proposes that decision makers (i.e., management and owners) within a business or organization will evaluate an innovation's characteristics such as relative advantage, compatibility, complexity, trialability, and observability and that their perceptions of these characteristics will determine whether the organization or business will adopt this innovation.

PERCEPTION OF STRATEGIC VALUE IN E-COMMERCE

The concept of strategic value in this study is defined as the summation of perceived benefits from e-commerce minus the summation of perceived costs of e-commerce over a period of time. The potential benefits of e-commerce implementation include an increased number of new customers, better service to loyal customers, and increase in profit and market share. The strategic value of e-commerce can be illustrated as a value-driver model with four factors

driving value creation of e-commerce: transaction efficiency, complementarities, lock-in, and novelty (Amit & Zott, 2001). The paper agrees that the adoption of e-commerce is primarily determined by the owner's/manager's perception of how much strategic value an innovation can bring to the organization.

ORGANIZATIONAL READINESS

In relation to organizational readiness for e-commerce adoption, Mirchandani and Motwani (2001) identified factors that differentiate e-commerce adopters from non-adopters. The factors include advantage perceived from e-commerce, the knowledge of the company's employees about computers, enthusiasm of the top management, and compatibility of e-commerce with the work of the company. In a study executed by Zhu, Kramer and Xu (2002), an organization's size has also been identified as an adoption facilitator, where larger firms were found to be more likely than small businesses to adopt e-business because the larger firms (1) tend to have more slack resources to facilitate adoption, (2) are more likely to achieve economies of scale, (3) are more capable of bearing the high risk associated with early stage investment in e-business, and (4) have more market power to influence trading partners to adopt e-commerce technology. Grandon & Pearson (2004) found that compatibility with the company's work environment, enthusiasm of top management, perceived advantage from e-commerce and knowledge of the company's employees about computers were significant factors that differentiated between adopters and non-adopters of e-commerce. Therefore, small businesses considering the adoption of e-commerce should have top managers who are willing and ready to implement innovation.

ENTREPRENEURIAL MINDSET

Another factor potentially impacting the adoption of e-commerce is entrepreneurial mindset. An entrepreneurial mindset has been described as "a way of thinking about your business that captures the benefits of uncertainty" (McGrath & MacMillan, 2000, p. 1). Owners/managers have been found to exert a strong influence when it comes to an organization adopting e-commerce (Seyal & Rahman, 2003). Thus, it is reasonable to hypothesize that a small business owner's entrepreneurial mindset is expected to influence attitude toward innovations.

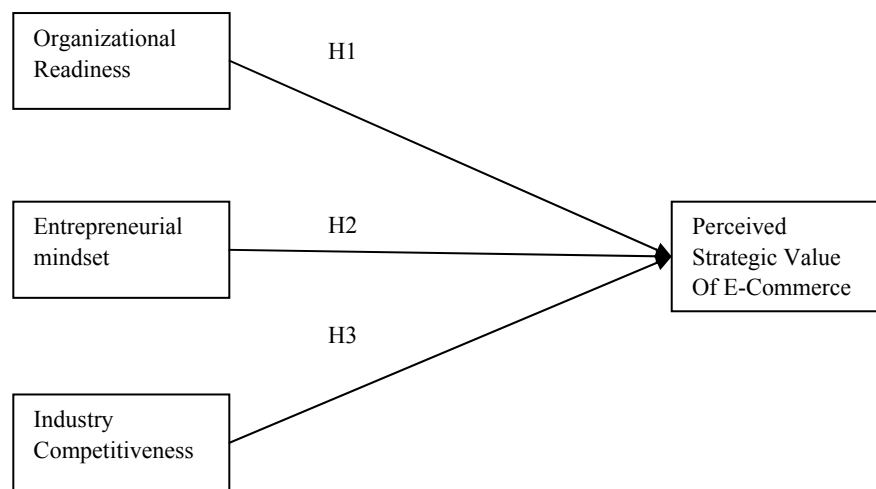
INDUSTRY COMPETITIVENESS

Another issue encountered in the technology adoption literature is external factors. An external factor that has been recognized as a positive force for e-commerce adoption is degree of competitiveness within the industry (Corbitt & Tanasankit, 2002; Lertwongsatien & Wongpinunwatana, 2003). This supports an assertion that businesses adopt e-commerce not only

to achieve best practices, gain operational efficiencies, and to obtain strategic value, but also to cope with competitive forces within the industry.

Based on the preceding discussion of issues potentially influencing decisions on e-commerce adoption, this study proposes that the perceived strategic value of e-commerce is influenced by organizational readiness, entrepreneurial mindset, and degree of competitiveness within the industry. The following hypotheses were developed for this study, as illustrated in Figure 1:

Figure 1. Research Model



H1: Organizational compatibility has a positive effect on the perceived strategic value of e-commerce in small businesses in New Orleans.

H2: Entrepreneurial mindset has a positive effect on the perceived strategic value of e-commerce in small businesses in New Orleans.

H3: Industry competitiveness factors have a positive effect on the perceived strategic value of e-commerce adoption in small businesses in New Orleans

RESEARCH METHOD

INSTRUMENT

The instrument used for data collection in this study contained two initial filter questions to assure that, first, the businesses were from New Orleans and, second, that the business would be properly classified as a small business. Four demographic questions were next used to

collect information about the participants, which included gender, age, education, and level of familiarity with e-commerce. These questions were followed by four general questions about the organization. The remaining questions were those adapted or modified from previous research and used to measure the topical constructs of this study: organizational readiness, entrepreneurial mindset, and external factors.

PARTICIPANTS

For this study, owners/managers of small businesses were targeted throughout New Orleans. According to the Seyal & Rahman (2003) study, small business characteristics include small management teams and a strong owner influence. Different agencies and businesses use different criteria to determine whether a business is small, such as the number of employees, annual income earned and relative dominance in their industry. Different ranges of employee size (size standard) for small businesses are encountered in the literature, depending on the source this number can fall anywhere between 50 and 500 employees. For the purpose of this study, the number of employees was used as the determining factor for classification as a small business: firms that employed 100 or less individuals were considered as small businesses.

DATA COLLECTION

Data was gathered by utilizing an Internet-based survey that was created at www.freeonlinesurveys.com. The web address of the survey was sent to small business email addresses collected from a local telephone directory and The Yellow Pages.com, an online business directory. Following the initial email request, two e-mail reminders were sent to the selected businesses asking them to complete the survey for the research.

CHARACTERISTICS OF THE SAMPLE

There were 198 respondents in this study: 66 indicated that they were e-commerce adopters and 132 indicated that they were not adopters (see Table 1). Of the 198 respondents, 60.6 percent are male, 51 percent are in the age range of 30-39, and 55.6 percent reported holding a bachelor's degree. The majority of the e-commerce adopters were in retail and service businesses (40.9% and 28.8%, respectively), while among the non-adopters the majority were in service and construction businesses (39.4% and 34.8%, respectively). The majority (67.2%) of total respondents indicated that their PCs are used for clerical work. It is of interest to note that the majority (58.3%) of non-adopters do not have a website. The overwhelming majority of all respondents (86.4 percent) indicate they are either very familiar or somewhat familiar with e-commerce.

Sample Characteristics Questions	Adopters N=66		Non-Adopters N=132		All N=198	
	No	(%)	No	(%)	No	(%)
Gender						
Male	45	68.2	75	56.8	120	60.6
Female	21	31.8	57	43.2	78	39.4
Age						
20-29	12	18.2	28	21.2	40	20.2
30-39	42	63.6	59	44.7	101	51.0
40-49	12	18.2	33	25.0	45	22.7
50-59			12	9.1	12	6.1
Education						
High School			19	14.4	19	9.6
Technical College	3	4.5	56	42.4	59	29.8
4-Year College	56	84.8	54	40.9	110	55.6
Masters Degree	7	10.6	3	2.3	10	5.1
Type of Business						
Manufacturing	5	7.6	2	1.5	7	3.5
Wholesale	8	12.1	1	0.8	9	4.5
Retail	27	40.9	27	20.5	54	27.3
Construction	5	7.6	46	34.8	51	25.8
Service	19	28.8	52	39.4	71	35.9
Other	2	3.0	4	3.0	6	3.0
PC use						
Clerical Support	32	48.5			133	67.2
Process/production support	18	27.3	101	76.5	44	22.2
Decision making support	13	19.7	26	19.7	18	9.1
Strategic support	3	4.5	5	3.8	3	1.5
Website						
Have			55	41.7	121	61.1
No	66	100.0	77	58.3	77	38.9
Website Done						
In-house	39	59.1	14	10.6	33	27.3
Outsourced	27	40.9	41	31.1	88	72.7
Familiar with e-commerce						
Very familiar	21	31.8	13	9.8	34	17.2
Somewhat familiar	45	68.2	92	69.7	137	69.2
Not familiar	-	-	27	20.5	27	13.6

DATA ANALYSIS

Partial Least Squares (PLS) analysis was used to test the proposed research model. PLS is a multiple regression-based technique for testing a research model with multiple-item constructs and direct and indirect paths. It has been considered appropriate for exploratory study and testing predictive models. PLS, as a structural equation modeling technique, recognizes two parts of model testing: a measurement model and a structural model (e.g., Barclay et al., 1995; Fornell & Larcker, 1981). In order to test a research model, the measurement model first has to be

evaluated, and then the structural model has to be tested. The assessment of both models was conducted for this study using SmartPLS 2.0.

The measurement model addresses the relationship between the constructs and the items used to measure them. The test of the measurement model consists of the estimation of the convergent and discriminant validities of the measurement instrument. However, reflective and formative measures should be treated differently. Formative items are considered to form or cause the construct to measure. Thus, these items are not expected to correlate or show internal consistency (Chin, 1998). For this reason, the item weights for formative measures have been used to test the relevance of the items to the constructs (Barclay et al., 1995; Wixom and Watson, 2001). Table 2 shows the relationship between the constructs and the items in this study. Perceived Strategic Value, which is only dependent construct, was considered Reflective.

Constructs	Model	Relationship
Organizational Readiness (OR)	Exogenous	Formative
Entrepreneurial Mindset (EM)	Exogenous	Formative
Industry Competitiveness (IC)	Exogenous	Formative
Perceived Strategic Value (PSV)	Endogenous	Reflective

RESULTS

MEASUREMENT MODEL

Although formative and reflective constructs are treated differently, the loadings are used for interpretive purpose and for the calculation of reliabilities. However, it has been suggested that an absolute value of factor loadings of .30 is considered to meet the minimal level, loadings of 0.40 are considered more significant, and loadings of 0.50 or greater are considered very significant (Hair et. al., 1998). Average variance extracted (AVE) of 0.50 or above has also been used to support the convergent validity of the constructs (Fornell & Larcker, 1981).

Table 3 shows individual item loadings and associated weights for the related construct. All of the composite reliabilities exceed 0.7. For the reflective construct of perceived strategic value the loading on some items may be considered weak, but none of the items shows a loading of lower than absolute value of 0.4. This shows some evidence for internal consistency. Table 5 shows an AVE of 0.48, which is below the acceptable level. For the formative constructs, some of the items show negative weights. Formative items are considered to form or contribute to the construct. The negative weights indicate a contradiction to the original expectation. The items with negative weights are OR3, OR5, OR9, EM4, and EM7.

Table 3. Weights and Loadings		
Variables	Weights	Loadings
Organizational Readiness	Composite Reliability = 0.79	
OR1	0.60	0.75
OR2	0.10	0.51
OR3	-0.24	0.08
OR4	0.43	0.57
OR5	-0.11	0.24
OR6	0.01	0.12
OR7	0.31	0.52
OR8	0.15	0.28
OR9	-0.13	0.24
OR10	0.21	0.61
Entrepreneurial Mindset	Composite Reliability = 0.71	
EM1	0.41	0.66
EM2	0.41	0.72
EM3	0.30	0.64
EM4	-0.01	0.40
EM5	0.13	0.35
EM6	0.24	0.39
EM7	-0.21	-0.02
EM8	0.36	0.30
Industry Competiveness	Composite Reliability = 0.75	
IC1	0.74	0.90
IC2	0.30	0.58
IC3	0.16	0.58
IC4	0.19	0.37
Perceived Strategic Value	Composite Reliability = 0.87	
PSV1	0.08	0.44
PSV2	0.14	0.62
PSV3	0.09	0.47
PSV4	0.15	0.64
PSV5	0.22	0.81
PSV6	0.20	0.78
PSV7	0.19	0.71
PSV8	0.15	0.68
PSV9	0.24	0.70

Table 4. Cross Loadings				
	OR	EM	IC	PSV
OR1	0.75	0.27	0.23	0.45
OR2	0.51	0.26	0.21	0.31
OR3	0.08	0.28	0.14	0.05
OR4	0.57	0.04	0.31	0.34
OR5	0.24	0.31	0.36	0.15
OR6	0.12	0.26	0.24	0.07
OR7	0.52	0.28	0.41	0.31
OR8	0.28	0.11	0.14	0.17
OR9	0.24	0.15	0.13	0.14
OR10	0.61	0.21	0.43	0.37
EM1	0.12	0.66	0.26	0.28
EM2	0.25	0.72	0.36	0.30
EM3	0.07	0.64	0.22	0.27
EM4	0.11	0.40	0.19	0.17
EM5	-0.02	0.35	0.05	0.15
EM6	0.11	0.39	0.12	0.16
EM7	0.02	-0.02	0.00	-0.01
EM8	0.10	0.30	0.05	0.13
IC1	0.32	0.33	0.90	0.44
IC2	0.35	0.09	0.58	0.28
IC3	0.34	0.41	0.58	0.28
IC4	0.21	0.18	0.37	0.18
PSV1	0.28	0.03	0.14	0.44
PSV2	0.37	0.16	0.23	0.62
PSV3	0.22	0.09	0.17	0.47
PSV4	0.34	0.26	0.28	0.64
PSV5	0.46	0.38	0.46	0.81
PSV6	0.48	0.25	0.39	0.78
PSV7	0.43	0.37	0.34	0.71
PSV8	0.37	0.22	0.24	0.68
PSV9	0.50	0.47	0.47	0.70

	OR	EM	IC	AVE(SQRT)
PSV	0.60	0.42	0.49	0.48 (0.66)

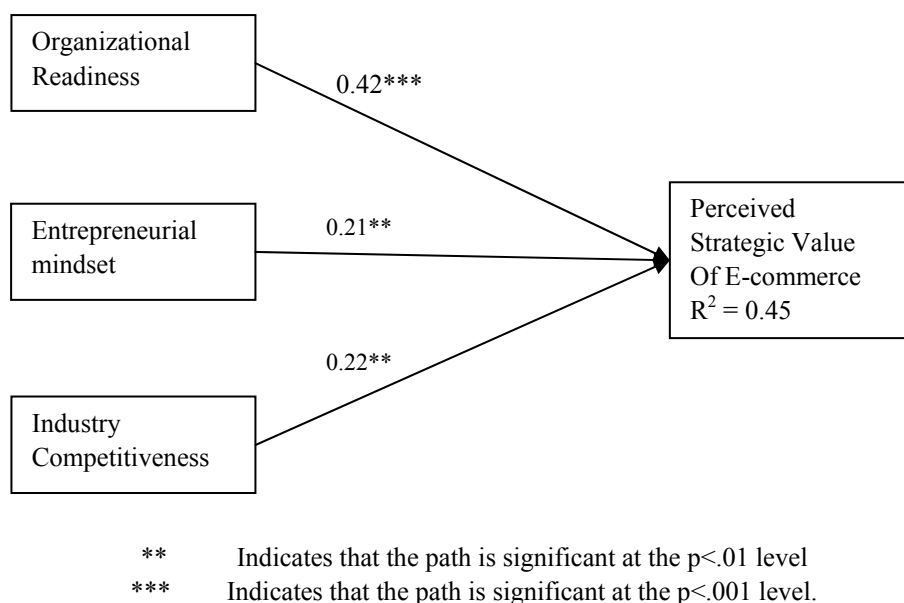
Discriminant validity is adequate when the average variance extracted from the construct is greater than the variance shared between the construct and other constructs. Table 5 shows correlations between constructs and square root of AVE. The square root of AVE for the perceived strategic value variable is greater than the correlations with other constructs. Also, the cross loadings in Table 4 show that items for perceived strategic value are loaded higher on that construct than on other constructs. This indicates some evidence for discriminant validity.

STRUCTURAL MODEL

In order to improve the validity of the results, the items with negative weights were removed when the structural model was tested. As a result, OR3, OR5, OR6, OR9, EM4, and EM7 were dropped to estimate the structural model. Figure 2 shows the significance and the strength of the relationships between the constructs and R^2 , which indicates the predictive power of the model. As hypothesized, organizational readiness, entrepreneurial mindset, and industry competitiveness were positively associated with perceived strategic value of e-commerce with path coefficients of 0.42, 0.21, and 0.22 respectively (H1, H2, & H3). And 45% of variance of perceived strategic value of e-commerce was explained by the three proposed constructs. Organizational readiness shows the highest positive path coefficient with perceived strategic value. Table 6 summarizes the results of the hypotheses in this study.

Hypotheses	t-Statistic	Results
H1: Organizational readiness has a positive effect on perceived strategic value of e-commerce.	5.54	Supported
H2: Entrepreneurial mindset has a positive effect on perceived strategic value of e-commerce.	2.38	Supported
H3: Industry competitiveness has a positive effect on perceived strategic value of e-commerce.	2.78	Supported

Figure 2. Results



CONCLUSIONS

This study investigated factors that influenced e-commerce adoption among small businesses in post-Katrina New Orleans. The demographic and organizational characteristics data collected from the participants paints a very clear picture of the adopters: all of the adopters were either very familiar or somewhat familiar with e-commerce and over ninety-five percent of the adopters indicated their level of education to be at least four years of college. In addition, forty percent of the adopters worked in organizations doing business in the retail industry. The results of this study show that organization readiness, entrepreneurial mindset, and industry competitiveness influenced the participants' perceptions of the perceived strategic value of e-commerce. Previous research has indicated that small businesses show a low rate of e-commerce adoption compared to larger corporations. In order to promote e-commerce adoption by small business, especially those small businesses that play a major role in New Orleans' post-Katrina recovery efforts, government agencies aiding those businesses need to emphasize the potential importance of these factors. A major finding of this study is that improving the organizational readiness of small businesses for e-commerce is a key to successfully promoting its adoption.

LIMITATIONS

There are several limitations to this study. Because of the weak validity of the items to measure the constructs in the model, interpretation of the results requires some caution. In addition, the wordings of questions on the survey instrument create the possibility of ambiguity considering the respondents' characteristics. Because the respondents to the instrument used in this study were business owners/managers and not customers who are the typical users of e-commerce, this might have misled the respondents in responding to some of the survey questions. Finally, while three constructs were considered in the study, there are many other possible factors previously recognized by other studies.

IMPLICATIONS FOR ADDITIONAL RESEARCH

For future research on this topic, a replication of the basic premise of this study with a refinement of the survey instrument could be done in another city that has experienced similar problems. Additional research efforts could be made to examine other previously recognized factors such as computer literacy, types of industry, etc. Finally, it would be also interesting to expand the findings of this study by examining the impact of the variables on the level of adoption of electronic commerce.

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Appendix A: List of Items		
Constructs	Items	Description
Perceived strategic value of e-commerce		Implementing e-commerce would:
	PSV1	Enable my organization to generate new business opportunities.
	PSV2	increase the availability of our products or services to our customers
	PSV3	help my organization to reach new customers
	PSV4	enable my organization to provide better service to my customers
	PSV5	enable my organization to process transactions at a lower cost
	PSV6	enable my organization to reduce the cost of doing business
	PSV7	enable my organization to expand its market share
	PSV8	Provide my customers with a more satisfying shopping experience.
Entrepreneurial Mindset	PSV9	Enable my organization to increase sales to existing customers.
	EM1	How entrepreneurially oriented is your organization?
	EM2	Compared to your immediate competitors, how entrepreneurially oriented do you think your organization is?
	EM3	How well does your organization find new business or markets to target?
	EM4	How well does your organization enter new markets before your immediate competition.
	EM5	How well does your organization introduce new products or services before your competitors do.
	EM6	How well does your organization strive to lower costs faster than your competitors.
		Agree or disagree with the following statements:
EM7	The risk of missing an opportunity is just as important as the risk of failure.	
EM8	I must be willing to accept at least a moderate level of risk of significant losses.	
Organizational Readiness		E-commerce is compatible:
	OR1	with the needs of our business
	OR2	with other systems my organization uses
	OR3	with the culture of our organization
		My organization has:
	OR4	The financial resources to implement e-commerce.
	OR5	The financial resources to support e-commerce.
	OR6	The technological resources to implement e-commerce.
	OR7	The technological resources to support e-commerce.
	OR8	The logistics necessary to support e-commerce.
OR9	The personnel to implement e-commerce.	
OR10	The personnel to support e-commerce.	
Industry Competitiveness	IC1	Competition will make it necessary for our organization to implement e-commerce.
	IC2	In order to be leader in my organization's industry, we need to implement e-commerce.
	IC3	Competition is forcing my organization to implement e-commerce.
	IC3	The government provides incentives for my organization to implement e-commerce.

THE LESSON OF MISS ARLENE'S OVEN: ENTREPRENEURSHIP AT THE BASE OF THE ECONOMIC PYRAMID

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ABSTRACT

Five years of intermittent exploration in Nicaragua led three interdisciplinary professors to discover diverse enterprises in communities throughout the second-poorest nation in Latin America. Our observations and subsequent analysis addressed whether entrepreneurial individuals representing true positive change agents are evident in Nicaragua. The enterprises observed are examined here through the structure of the interdisciplinary initiatives of Estelí Innovation, which include coffee, ecotourism, education, environmental science & ecology, human health & health services, Programa de Inovacion Estelí, and water quality & supply. Some of the enterprises exhibit true entrepreneurship by positive change agents, while others better represent invention, innovation, or small businesses. Nevertheless, the entrepreneurial spirit appears to be alive and well at the base of the economic pyramid in Nicaragua, exemplified by the ingenuity of Miss Arlene's oven applied to her vision for a better economic future. Based on our observations, we recommend initiation of more studies of entrepreneurship at the base of the economic pyramid in a diversity of developing nations to better understand how to support potential entrepreneurs living and working there. Guidance leading to a better understanding of how entrepreneurship works could enable independent or community-based entrepreneurial efforts to benefit many in need.

INTRODUCTION

We are three interdisciplinary professors at Grand Valley State University who, for five years, have explored Nicaragua's geographical diversity and developed a series of initiatives with faculty and administrators of two Nicaraguan Universities. During these travels, we met Miss Arlene in an out-of-the-way location on the remote Little Corn Island; she had a lot for us to learn. As her husband's lobster fishery declined due to over fishing, she was striving to create a small business to sustain her family. Through ingenuity and persistence she had engineered her own oven to bake home-made goods offered for sale to local residents, but dreamed of one day catering to tourists drawn to the island for its natural beauty. Tourism is on the rise on Little Corn Island, whose unspoiled beaches and high-quality coral reefs attract both novice and

experienced divers (Spalding and Ravilous 2004; Pedersen and Pedersen 2007; Wedner 2007). Miss Arlene's inventiveness, vision and drive were creating an innovative and successful enterprise right in front of our eyes. She was an inspiration, especially because her efforts were budding so early in the island's economic development. For us, she embodies the entrepreneurial spirit that sometimes flourishes at the base of the economic pyramid, providing a positive change agent for her community.

GETTING TO MISS ARLENE: THE HISTORY OF *ESTELÍ INNOVATION*

Involvement by Grand Valley State University (GVSU) faculty in Nicaragua dates back to 1998 when Hurricane Mitch devastated a vast area of Central America, including the mountainous northwestern region of Nicaragua, where rural residents grow coffee and other crops on small-scale farms (or *fincas*). Faculty, students and staff from the Kirkhof School of Nursing at GVSU organized and led Health Brigades to provide relief to approximately 4,000 residents of the protected landscape of *Reserva Natural Mirafior* in early 1999 (Jewell 2007). During their travels, they developed relationships in Managua, Estelí and Mirafior. They befriended residents of several of the isolated communities in Mirafior, who subsequently helped organize and assist in additional Brigades that continued through 2003; this involvement empowered many of the women in the rural communities (Jewell 2007).

Wishing to extend these positive relationships, a diverse group of faculty members formed in 2004 to explore the potential for an interdisciplinary program in Nicaragua. In addition to the Health Brigades, GVSU already operated a faculty-led program in Psychology to a San Marcos branch campus of Ave Maria University of Naples, Florida. The interdisciplinary group conducted an exploratory trip and generated some good ideas, but these ultimately did not come to fruition and the group disbanded. Two of the faculty members, one in engineering and the other in marketing/entrepreneurship, elected to continue their work independently and returned to revisit some of the people they'd met during the exploratory trip and develop additional contacts. During this trip, they generated the concept of developing a program in innovation for Nicaraguan students to help them develop products needed by Nicaraguans and made by Nicaraguans using local resources. A year later, they were joined by a faculty member from the biology department, further expanding the interdisciplinary breadth and scope of the team's work.

Today, we three faculty members sustain seven interdisciplinary initiatives in Nicaragua under the umbrella structure called *Estelí Innovation* and supported by multiple, annual trips by groups of committed faculty members, alumni, students, and community members (Table 1). Altogether, the authors have completed more than a dozen expeditions to Nicaragua. It was during one of these expeditions, in May, 2008, that we met Miss Arlene. She serves as the central metaphor of this paper, representing the entrepreneurial spirit that can flourish at the base of the economic pyramid even in one of the poorest countries in the western hemisphere. She

and others like her serve as the change agents of entrepreneurship in Nicaragua. Note: while the tradition phrase is “bottom of the economic pyramid,” we prefer to express the concept as the *base* of the economic pyramid, which implies a strong, foundational relationship to an economy and avoids the negative connotation often associated with the word “bottom.”

BREADTH, SCOPE AND STRUCTURE OF *ESTELÍ INNOVATION* IN 2009

Although *Estelí Innovation* continues to grow and expand, its genesis resides outside the official structure of Grand Valley State University. One of its hallmarks is its diversity: the authors represent three units housed in three different colleges, and virtually all of the initiatives are interdisciplinary. Currently, some of the initiatives fall under Continuing Education, and all are supported and assisted by the GVSU’s International Center. Faculty members from any discipline in GVSU are welcome to participate in the existing initiatives or to develop new ones. Table 1 provides an overview of the seven existing initiatives, which will serve as the framework for our discussion of business, innovation, and entrepreneurship in Nicaragua.

Within *Estelí Innovation*, individual trips may target a specific initiative or project, such as developing curriculum with our faculty partners in Estelí, or consist of a geographically broad expedition to develop additional contacts as we explore Nicaragua’s diverse ecosystems and cultures. Most trips bolster all seven initiatives or a significant subset of them. Over the years our expeditions have traversed much of Hispanic Nicaragua found in the nation’s western lowlands and throughout the Western Cordillera’s mountainous spine that separates west from east (Kritcher 1999), but also parts of Nicaragua’s Caribbean region (Figure 1). During our May 2008 expedition we traversed the *Region Autónoma Atlántico Sur* (RAAS), visiting Bluefields, a number of communities adjacent to Pearl Lagoon, and the Corn Islands (Figure 1). Here we interacted with individuals of diverse ethnicities and cultures, including those of Miskito, Rama, and Afro-Caribbean descent, and met Miss Arlene on Little Corn Island. Other journeys ventured south to the Costa Rican border, north to the Honduran border, and west to the Pacific Ocean. Though we have learned much from our expeditions and studies, our main lesson is that we have only begun to learn; perhaps the greatest epiphany is how much our Nicaraguan hosts have taught us and have yet to teach us.

As a consequence of these collective experiences, we developed- for all seven initiatives- the guiding principle that it is not the job of a university or collaborative team to bring about changes to make Nicaragua more like the United States. Instead, we communicate with the Nicaraguans to learn what they want or need, and work with them to achieve their goals, cooperating with local faculty members, community leaders and university administrators. With this principle guiding us, we can better foster innovation and entrepreneurship in Nicaragua, not by effecting changes ourselves, but by supporting our Nicaraguan collaborators who can serve as local change agents.

Table 1. The seven initiatives of <i>Estelí Innovation</i> in Nicaragua, showing current projects in each area. Each initiative involves participation by some combination of university faculty members, alumni, students, and administrators as well as community members from the region	
Seven initiatives of <i>Estelí Innovation</i> in Nicaragua	Current projects (2009-10)
Coffee	Identifying <i>story coffees</i> for on-line sales. Working with cooperatives, e.g., UCA Mirafior. Developing products and markets for green coffee beans – a different pricing structure for farmers.
Ecotourism	Collaboration with FAREM faculty to develop curriculum and enhance tourism in the region. Working with cooperatives and individuals working in ecotourism.
Education	International, interdisciplinary geotourism exploring the many cultures & ecosystems of Nicaragua. Emersion language learning. Delivery of student educational supplies. Inclusion of local students in programs. Developing internship programs for US Students
Environmental Science & Ecology	Collaboration with FAREM faculty to develop curriculum & research projects, and share materials & pedagogical practices. Obtain & deliver scholarly resources. Work supported by NSF and internal grants.
Human Health and Health Services	Direct aid delivering medical supplies to ten clinics serving the poor. Volunteer tourism in naturopathic medicine on <i>Isla de Ometepe</i> . Collaboration with UPONIC administrators to develop a service-learning program in naturopathic medicine for Nicaragua & <i>extranjero</i> (international) students.
<i>Programa de Inovacion Estelí</i> [note: the Spanish name distinguishes this from the overall initiative]	Experiential class in innovation offered annually in Estelí. Workshops on teaching & learning for faculty. Problem-specific entrepreneurial workshops. Development of engineering Coop program.
Water quality and supply	Examining water purification practices and improving design of appropriate purification technologies for use in the local economy. Developing a business model to produce & distribute potable water.

THE WILD SPIRIT OF ENTREPRENEURS AT THE BASE OF THE ECONOMIC PYRAMID

Entrepreneurs effect change (Schumpeter 1934, Schumpeter 1961, Drucker 1985). In his classic work “The theory of economic development: an inquiry into profits, capital, credit, interest, and the business cycle,” Schumpeter (1934) introduced the idea of innovation in the context of creative destruction, and held the view that innovation and technological changes

come from the “wild spirit” of entrepreneurs, whose definitive characteristic is their emphasis on innovation (Dees 2001, Zhao and Siebert 2006). Peter Drucker (1985) carried forward the idea that cyclic change links to innovation in his work “Innovation and entrepreneurship: practice and principles,” emphasizing that change is usually market-focused and market-driven. In the midst of the world’s current state of ecological degradation and economic downturn, some contemporary scholars urge entrepreneurial innovation that creates long-term value, conserves resources, and causes less environmental and social disruption while creating more jobs and economic growth (Bhide 2008, Dees 2009). We embrace these ideas, and attribute to entrepreneurs the quality of acting as positive change agents.

Why some individuals become entrepreneurial change agents is an interesting question, and in recent years scholars have examined links between entrepreneurship, psychological traits, and culture (e.g., Thomas and Mueller 2000, Stewart and Roth 2001, Stewart and Roth 2004, Collins et al. 2004, Zhao et al. 2005). Zhao and Siebert (2006) found that entrepreneurs are characterized by *Openness to Experience*, tending to be creative, innovative, imaginative, reflective, nontraditional and intelligent, especially in ways linked to creativity and divergent thinking. Entrepreneurs in the study also exhibited *Conscientiousness*, a tendency towards organization, hard work, and motivation towards accomplishing goals (Zhao and Siebert 2006). Subtle differences in goals can correlate with propensity towards specific personality traits. In a meta-analysis comparing managers and entrepreneurs, entrepreneurs were significantly more likely to embrace risk than managers, and those whose primary goal was venture growth exhibited greater risk propensity compared to those targeting growth in family income (Stewart and Roth 2001). Thus, individuals holding entrepreneurial goals and expressing personality traits associated with creativity and independent thinking may be more likely to serve as change agents within a community compared to others in the same population.

Cultural context may influence the personality profile of entrepreneurs. Within the context of the firm, entrepreneurs express judgmental decision-making based on knowledge (public and private) in a fashion analogous to scientists sorting among competing hypotheses to determine which experiments to conduct (Casson 2005). In their cross-cultural, international study, Thomas and Mueller (2000) defined the entrepreneurial profile with these four traits: (1) innovation, (2) risk-propensity, (3) internal locus of control and (4) energy level. They found the propensity for innovation was present in entrepreneurs across all cultures examined, but that expression of the other three traits differed for entrepreneurial individuals among nations in ways that reflected cultural norms (Thomas and Mueller 2000). Entrepreneurs who were distinctive from others in their communities were found in all cultures studied, but the ways in which they pursued entrepreneurial activities were influenced by the context of their cultures. In developing nations such as Nicaragua, whose cultural norms differ from those in the United States, we expect entrepreneurship to be present, but not necessarily to “look” the same as in does in the United States. Thus, striving to remain open-minded during our expeditions, we sought and observed the activities of some of Nicaragua’s current and potential entrepreneurs.

In our work in Nicaragua we have met many people in community development, economic development, poverty alleviation, education, health care and other areas whose efforts are focused on fostering positive change. Some of these individuals pursue work associated with traditional entrepreneurship; others dedicate themselves to work more closely aligned with social entrepreneurship (Dees 2001, Bhide 2008, Dees 2009). We have also observed a diversity of business endeavors which, while affecting the Nicaraguan economy to a greater or lesser degree, do not appear to foster change. It is this diversity of activities we examine and discuss here. For the purposes of this paper we will define entrepreneurs as intentional change agents who effect positive changes that benefit themselves, their families, their communities, and potentially even their nation. In Nicaragua, such change agents, when and where present, are frequently working at the base of the economic pyramid.

NICARAGUA AT THE BASE OF THE ECONOMIC PYRAMID

Nicaragua, home to more than 5.89 million people, lies south of Honduras and north of Costa Rica and occupies an area roughly the size of New York State (Figure 1; CIA, 2009). Bordered by the Pacific Ocean and Caribbean Sea, Nicaragua is a beautiful land featuring live and dormant volcanoes, abundant freshwater ecosystems such as *Cocibolca* (Lake Nicaragua), the second-largest lake in Latin America, and high biodiversity supported by diverse ecosystems that include cloud forests, fire-maintained savannas, lowland rainforests and mangrove swamps (Belt 1985, Kritcher 1997, Weaver et al. 2003, Van Perlo 2006, Arghiris and Leonardi 2008, Reid 2009). Despite crushing poverty, the people of Nicaragua are open, friendly, welcoming and gracious. The population age structure forms a broad-based pyramid dominated by young age classes under the age of 21 (33.8% of individuals are 14 years of age or younger), and though this structure is gradually shifting, individuals 65 years of age or older still compose only 3.3% of the population (CIA, 2009).

Although Nicaragua experienced economic gains during the 1990's, it continues to have the second-lowest per capita income in the western hemisphere behind Haiti (Tejerina 2006, CIA 2009). Nicaragua suffered slowed economic growth during 2009 as a consequence of decreased demand for exports from international markets, declining prices for a number of agricultural commodities exported from Nicaragua, and suppressed remittances from citizens working in other nations (CIA, 2009; Atwood Burney 2007; World Bank 2006). Unemployment is chronically high and underemployment worse, estimated at 46.5% in 2008 (CIA, 2009) and probably higher in 2009-10 following the global economic downturn. Underemployment and unemployment inevitably link to poverty: in 2005, well before the current gloomy global economic state, nearly half of Nicaragua's population lived below the poverty line (2005 data; CIA, 2009). The proportion of Nicaraguans struggling to survive in poverty currently is not known, but doubtless represents a large majority of residents.

Coupled with this widespread poverty, and in a pattern similar to that observed in fully industrialized nations, the wealth in Nicaragua is not well distributed (Tejerina 2006). The richest 10% of the population consumes 33.8% of the GDP, while the poorest 10% of the population exists on only 2.2% of the GDP (CIA, 2009). Nicaraguans experience poverty exacerbated by a prolonged civil war followed by political instability and a series of natural disasters including Hurricane Mitch in 1998. These events undermine efforts- local and national- to regenerate and invigorate the nation's economy. Despite these challenges, this beautiful nation remains a candidate for economic growth supported by innovative, entrepreneurial leadership, including growth in ecotourism, which represents "a potential gold mine for Nicaragua (Weaver et al. 2003, pg. 3)," and a diversity of other economic sectors.



Figure 1. Topographic map of Nicaragua, showing the Corn Islands east of Bluefields in the Caribbean, *Isla de Ometepe's* dual volcanic peaks rising out of *Lago de Nicaragua*, the spine of Western Cordillera mountains that divide the seasonally dry western region from the wetter lowland forests of the eastern region, and many of the communities visited during the authors' expeditions, including Estelí, Somoto, Matagalpa, Rivas, San Juan del Sur and Bluefields. Map from: <http://nicaragua-pr.com/nicaragua-maps.html>

DOES THE BASE OF THE ECONOMIC PYRAMID GENERATE ENTREPRENEURS?

Why focus on Nicaragua? The metrics above certainly support the view that many, if not most, Nicaraguans live at the base of the economic pyramid, and we perceive it to be an ideal location for study of entrepreneurship in such a context. Our collective observations from multiple expeditions to Nicaragua reveal plentiful examples of current and incipient entrepreneurial activity. Serendipity led us to initiate work there, but we persist in part because Nicaragua has received much less scholarly, scientific and economic attention compared to other developing nations in Latin America and elsewhere. Travels to some of these other nations would doubtless yield additional observations, and had we focused on scholarly initiatives other

than the seven featured in *Esteli Innovation* we would have encountered different examples than those reported here. Nevertheless, the diverse, sometimes surprising activities we did discover provide a rich mining ground to explore the degree to which entrepreneurship is generated and sustained at the base of the economic pyramid, and to contemplate how to best foster entrepreneurial leadership there.

We considered the predominant nature of each observed activity to assign it to one of four categories: (1) invention, (2) innovation, (3) entrepreneurship, and (4) small business. We adopt definitions of Roberts (1989), Carland et al. (1984) and other scholars for these terms, where *invention* involves creating a new idea and developing a workable prototype, but not pursuing introduction of the invention to a market (Roberts 1989). In contrast, *innovation* is an invention coupled with commercial development, application, and transfer such that the invention is exploited or adopted in a market (Roberts 1989, Ravichandran 1999); subsequently, the invention may succeed to a greater or lesser degree within the market(s) to which it is introduced. *Entrepreneurship* is business activity that focuses on change (Schumpeter 1934, Schumpeter 1961, Drucker 1985, Zhao and Siebert 2006), as discussed in the introduction, and which embraces a rather broad range of positive-change activities when it includes social entrepreneurship (Dees 2001, Bhide 2008, Dees 2009). Although entrepreneurship may be associated with small business ownership, they are not synonymous (Carland et al. 1984, Stewart et al. 1999). *Small business* activities consist of established businesses that are independently owned and operated and may be successful, but are not extraordinary for their innovation or potential for effecting change. Some of the activities we observed might reasonably be assigned to more than one category, but we restricted each to placement within a single category and attempted to select for each the one most appropriate. Arguably our definitions might be altered such that the categorization changes for some activities, but of greater importance here is our examination of the degree to which activities characterized by invention, innovation and entrepreneurship are flourishing at the base of the economic pyramid in Nicaragua.

It is important not to confuse *categorization* with *valuation*: we do not value one category of endeavor above another. Small businesses, for example, are how many families survive at the base of the economic pyramid. We found countless examples of enterprising individuals toiling on hot, crowded buses hawking homemade candies, chicken or corn *pupusas*, peeled and sliced mangoes, sweet cornbread, drinks in tiny plastic bags, sunglasses, pharmaceuticals, nutraceuticals, and other products. These micro-businesses are ubiquitous, and an integral part of Nicaraguan society and commerce. Also common are small street vendors with stalls or carts selling food, services and a variety of goods. A table, a few rickety, unmatched stools and a smoky fire on the side of the road comprise many an enterprise in Nicaragua, equivalent to our fast-food, and more than once provided us with a delicious and much-appreciated repast.

Larger in scale and slightly more formal in structure than street vendors are the *pulperias* found within many corner shops or street-facing rooms, and even on front porches. These tiny shops are Nicaragua's convenience stores. Each offers its own unique and eclectic mix of

products, which might include chilled, bottled drinks (soft drinks, juices, purified water, sports drinks, and local concoctions), baked goods, toiletries, produce, or notebooks- typically only a small array of offerings that differs from the shop just a few doors down the street. *Mercados* offer more specialized commerce: clothing, office supplies, cameras and electronics, groceries, often on a small scale and frequently family-owned. Similarly, *comedores* are small, family-owned, cafeteria-style restaurants consisting of a few tables with a small buffet of rice, vegetables, meats and perhaps a little salad.

From the candy-hawking kids on buses to automotive repair shops, all represent bustling business activity, but they lack the element of change or creative destruction of one thing to be replaced by another, i.e., they lack the core of entrepreneurship Schumpeter (1982) and Drucker (1985) address in their writings. The question is not whether enterprising business activities exist at the base of the economic pyramid- clearly they do. Rather, do business activities representing *change*, as suggested by Schumpeter (1934, 1961) and Drucker (1985), occur among the poor within developing nations? Is true entrepreneurship generated at the base of the economic pyramid?

These questions are not trivial. Support for providing microfinance services to those living in poor communities has grown since its inception in the 1970's and was exponentially fueled by the United Nation's 2005 *Year of Microcredit* (Robinson 2002, Dichter 2006, Banerjee et al. 2009, International Year of Microcredit 2009). Hope remains high that microloans and other microfinance services will enable many to work their way out of poverty through entrepreneurship (Robinson 2001, Lieberman 2002, Karlan and Valdivia 2009, International Year of Microcredit 2009), but some of the recent literature on microfinance seems to dash these hopes. Dichter (2007) raises concerns that a great deal of microcredit fuels consumption rather than investment in entrepreneurial endeavors, and an evaluation of the effects of new microcredit in India showed the "fate" of individual microloans depended in part on whether borrowers were currently business owners, aspired to become business owners, or exhibited a low propensity for entrepreneurship (Banerjee et al. 2009).

We are not experts in microfinance and will not address whether (or how) microfinance services influence the development of entrepreneurship at the base of the economic pyramid. But the concerns raised by Dichter (2007) and Banerjee et al. (2009) substantiate the importance of asking whether entrepreneurship is bubbling up from the base of the economic pyramid. We address this question in Nicaragua, where poverty is widespread, but where entrepreneurship at the base of the economic pyramid has not been thoroughly investigated (Tejerina 2006). We organized the diverse business activities we observed according to the structure of the seven initiatives of *Estelí Innovation* (Table 2). The examples in Table 2 are discussed in more detail in the narrative below.

Table 2. Observations of business and entrepreneurial activities in Nicaragua 2006-2009.			
These examples relate to the seven initiative of <i>Estelí Innovation</i> . Columns detail the location of each observed activity, brief explanatory comments, and the authors' categorization of each activity. Categories are defined in the text below; abbreviations are: INV = invention; INN = innovation; ENT = entrepreneurship; SBU = small business.			
Initiatives of <i>Estelí Innovation</i>	Activities observed (or reported) that may be Entrepreneurial.	Where observed (or reported)	Comments & Categorization (see above for abbreviations)
Coffee	<i>El Bosque Coffee</i> : founded by faculty & students of FAREM	Estelí (FAREM is the public university)	INV: a creative, substantive change for local retail markets.
	Bicycle-powered machine: removes <i>pulpa</i> from coffee beans	Remote mountain farm near Yali	INV: eases difficult work of removing <i>pulpa</i> from the bean.
	Cooperatives: provide new technologies to members	Coffee-growing region of NW	SBU: e.g., UCA Mirafior & others
Ecotourism	UCA Mirafior & Mirafior residents www.mirafior.org/	Mirafior	SBU: Family-based services offered to tourists & locals.
	Pueblo Hotel, Isla de Ometepe (Moyogalpa-based)	Los Angeles & other pueblos.	ENT: Women's coop. In-home, immersion accommodations
	Finca Magdalena www.fincamagdalena.com	Isla de Ometepe	SBU: organic agricultural coop with hostel, restaurant & tours.
	Hotel Hacienda Mérida www.hmérica.com/	Mérida, Isla de Ometepe	ENT: emphasizes sustainability, adventure-, volunteer- and eco-tourism and service learning.
Education	UPONIC	Managua & multiple satellite campuses	ENT: linked to <i>Inovacion Estelí</i> ; novel, market-driven programs
	Wawashang Environmental & Agroforestry Education Center	Wawashang River, off of Laguna Perla	INN: Intercultural, residential; NGO-funded to date (NUPI).
Environmental Science & Ecology	Biogenerator (large scale)	Ebenezer Farm	INV: community farm; family plots
	Alternative, renewable energy In Bluefields (East Coast)	BlueEnergy, www.blueenergygroup.org/	INN Wind & solar; U.S. & Nica personnel; assoc. w/tech school
Human Health & Health Services	Naturopathic Medicine	Moyagalpa & Los Angeles, Isla de Ometepe; Estelí, Managua	ENT: Trains island residents, interns & volunteers in their clinic; works cooperatively in Moyagalpa's public hospital.
	Botanicals: worm composting to dried crop to packaging & sales of herbal teas & remedies	Farm north of Estelí ; Manufactured & sold in Estelí	ENT: unique, locally driven, many employees, incl. handicapped
Innovation & Programa de <i>Inovacion Estelí</i>	Sawdust Stove	Estelí	INN: developed in response to local fuel shortage & marketed
	Plough constructed of rebar	Mirafior	ENT: European design adopted by welders to serve a local need
	Eco-fogon stoves	Managua	INN; uses wood more efficiently; international NGO- sponsored
	Miss Arlene's oven Miss Arlene's business	Little Corn Island	INV; see Figure 2 ENT; see text for explanation
Water Quality & Supply	Small, plastic bags of water sold by street vendors	Managua	ENT: convenient, inexpensive, safe source of drinking water
	Sand & clay water filters	Estelí & Mirafior	INN: none of them used widely

EXAMPLES FROM THE SEVEN INITIATIVES: DESCRIPTION AND ANALYSIS

INITIATIVE 1: COFFEE

Many of the activities we observed demonstrate the creativity of invention, but not necessarily- at least, not yet- entrepreneurship. For example, the machine designed to remove the *pulpa* from coffee beans is an invention, but not yet an innovation or example of entrepreneurship. Most of Nicaragua's remote coffee-producing farms lack a reliable electrical source, and at times have no access to electricity. Lacking a reliable source of electricity, muscle power is required for many tasks. Current *pulpa*-removing techniques rely on upper-body muscles, which are relatively small, but the bicycle-like *pulpa*-removing machine harnesses the greater power of large leg muscles to get the job done. This efficient machine has the potential to effect real change. If widely implemented, it would represent innovation- and its entrepreneur a true change agent. Unfortunately, to date only a single *pulpa*-removing machine has been shown at a coffee trade show, with none in production. Its promise has not come to fruition, awaiting an entrepreneurial change agent to recognize its potential and follow through with production and marketing to deliver the new technology to the legs of hard-working coffee *finca* workers. While inventiveness is present, missing are Thomas and Mueller's other three fundamental qualities associated with entrepreneurial activity (Thomas and Mueller 2000).

The second example may not at first seem earth-shattering. Flavored coffee is ubiquitous in North America and Europe, but it is not to be found in Nicaragua. Thus, the students and professors who developed *El Bosque* to design and market flavored coffees have the potential to change the Nicaragua's retail coffee market significantly. *El Bosque* started with three spices familiar to Nicaraguans: vanilla, cinnamon and cardamom, each of which can be ground with the coffee.

It is a concept that should be successful, an invention developed to the stage of innovation within in Nicaragua, but it hasn't yet progressed into entrepreneurship. *El Bosque* has brought a little product to the marketplace, sold mostly among a relatively small circle of acquaintances. Individuals involved in its inception were initially students who graduated, became faculty of the university and owners of the fledgling business. They have not pushed to get the products to a broader market- and potential exists for an international market. Two years ago the authors requested samples of the cardamom coffee, an unusual and creative choice for U.S. markets, for a U.S.-based, on-line coffee company but have not yet obtained any. The U.S. faculty members have tried to remove barriers and facilitate the fledgling Nicaragua company in several ways (e.g., by conducting market research and offering to transport samples to the U.S.). Despite these efforts, the company owners have not embraced the challenges and risks necessary to shepherd these promising products through the transition to higher-volume production and international sales.

INITIATIVE #2: ECOTOURISM

Elsewhere in Nicaragua we found examples much more supportive of an entrepreneurial model. While businesses like *Finca Magdalena* on Isla de Ometepe and family-run homestays we enjoyed in Miraflores target ecotourists in the small-business tradition common to many enterprises in Nicaragua (Arghiris and Leonardi 2008, Berman and Wood 2008), others pursue a distinctly different vision.

Hotel Pueblo consists of cooperatives in a number of villages on Isla de Ometepe in Lake Nicaragua (Berman and Wood 2008). We became acquainted with the dozen or so women-often heads of households- running the cooperative in the tiny, impoverished hamlet of Los Angeles on the road to Charco Verde. Each offers in-home accommodations and meals to guests visiting the island. Individually, these women have very little in terms of material wealth or power, but together, through cooperation, collaboration and synergistic creativity, they are creating business success and a degree of economic autonomy. The women empower one another and develop their vision through regular meetings where they discuss standards of cleanliness, food handling and preparation, quality of the visitor's experience (e.g., ambience), and fees. They offer immersion home stays that appeal to geotourists (Honey 2008; National Geographic 2009) pursuing service learning & volunteer tourism, community-based tourism, ecotourism, and nature/adventure tourism (for definitions and discussions of these diverse but related forms of tourism see Bjork 2007, Higham 2007, Honey 2008, National Geographic 2009, Wearing and Neil 2009).

This women's cooperative has created something very positive that can accommodate the needs of travelers from individuals to medium-sized groups, such as those who volunteer with the local naturopathic clinic (see below). It may not seem innovative that guests can form expectations about their accommodations that will be met, but in small communities at the base of the economic pyramid, developing and implementing such a model is remarkable. By banding into a cooperative that works together to learn more about what international visitors need and expect, these women have developed a fine and growing collective of businesses that competes successfully with hotels in nearby Moyagalpa. Their offerings are so good that one of the authors sat at table sipping a predawn cup of hot, freshly-brewed coffee thinking *where in the world in 2009 can you go to a tropical island and be treated like a king for \$15.00 a day?* The accommodations are humble, but the families' care of visitors truly royal, and guests can reasonably expect this quality of experience because the cooperative works hard to make it so.

Located on land once owned by the wealthy and powerful Somoza family, *Hacienda Mérida* represents another entrepreneurial endeavor located on *Isla de Ometepe*. Much more than just another backpacker's hostel, this family-run enterprise emphasizes sustainability, social equity, and community service, and accommodates travelers representing diverse nationalities, interests and backgrounds, from college students to families and retirees, and including individuals with physical handicaps (highly unusual in rural Nicaragua). Hosts Alvaro and

Esther connect with their international clientele via a bilingual web site and maintain a solar-powered internet connection available to guests for a small fee. Their mission statement conveys just how differently they approach their business, including their vision of developing “a model alternative education system directed towards sustainable development in Ometepe and other parts of Nicaragua” and their desire “to promote united communities and tropical forest conservation, advocate positive behavioral changes and improve the quality of life for the local population and foreign visitors alike.”

In harmony with these goals, *Hacienda Mérida* offers fresh, locally produced, mostly vegetarian cuisine that ranks among the best meals we’ve enjoyed in Nicaragua. When serving animal products, they offer locally caught fish, homegrown poultry and eggs, and dairy products, but never beef because of its negative environmental effects. Visitors may pursue muscle-powered recreation (hiking, kayaking, swimming, bicycling, horseback riding), nature-based tourism (e.g., birdwatching), and service learning (e.g., participation in conservation and research projects, veterinary brigades linked to Oregon State University, or bilingual education in their school), or simply relax on the quiet veranda designed for rest and reflection- and perfect for journal-writing. Local residents and schoolchildren, employees, other tourism operators on Ometepe and guests all play roles in supporting their worthwhile projects. Profits fuel their many community and conservation projects, and guests may defray costs of long-term room and board through volunteer work. Finally, these visionary entrepreneurs work to improve their practices continuously, unwilling to allow “good enough” to suffice. From mission statement to reinvestment of profits into projects benefiting Ometepe’s ecosystems and human communities, *Hacienda Mérida* exemplifies entrepreneurship at the base of the economic pyramid, albeit in an idyllic setting.

INITIATIVE #3: EDUCATION

A two-hour *panga* journey from the village of Pearl Lagoon northwest across the brackish waters of Laguna de Perla and up Rio Wawashán leads to the humble wooden dock of the Wawashang Environmental and Agroforestry Education Centre (CEAA). Established in 2004 and run by the *Fundación para la Autonomía y el Desarrollo de la Costa Atlántica de Nicaragua* (FADCANIC), the CEAA is a residential school serving children of diverse ethnicities who speak a variety of languages and come from villages throughout Nicaragua’s South Atlantic Autonomous Region (RAAS). Each village is predominated by one of the diverse cultures of the intercultural and multilingual RAAS, including Mestizo, Creole, Miskito, Garafuna, and Rama, among others (Arghiris and Leonardi 2008, Borchgrevink 2009). Classes are taught almost exclusively in Spanish. Although the dropout rate has been high for first-year students (understandable, given their young ages, upbringing in small, isolated villages, challenges of living in a multicultural and multilingual setting, and the program’s rigorous

curriculum), the program has successfully produced graduates with a diploma of *Técnico Básico Rural*, most of whom have found employment in their chosen field (Borchgrevink 2009).

Everything about this school is innovative, and its philosophy centers around the goal of producing positive change-agents whose work will bring about economic, agricultural and environmental sustainability. The school's structure and goals target gender and cultural equity as well as a hands-on, inquiry- and outcome-based curriculum. The agricultural and forestry techniques taught include innovative, low-tech agroecology methodologies that rely on local, renewable resources to produce a diversity of crops while conserving soils, biodiversity, and ecosystem integrity. The ecologist in our trio of faculty members was simply amazed at what the school's director and teachers were accomplishing on the school's lands, and the quality of work being done by the students.

From 2004-2009, CEAA was funded entirely by the Norwegian Students' and Academics' International Assistance Fund (SAIH; Borchgrevink 2009), but the school represents only part of the entrepreneurship-fostering activities of the FADCANIC, which include a microcredit program to facilitate sustainable agroforestry, a teacher-training program to improve the quality of primary education throughout RAAS, and the establishment of *La Reserva Natural de Wawashán* and its biological station (Borchgrevink and Rodriguez 2003, Berman and Wood 2008, Borchgrevink 2009, FADCANIC 2009). FADCANIC was founded in the early 1990's by Creole leaders to facilitate sustainable development within RAAS (Berman and Wood 2008, FADCANIC 2009), emphasizing agroforestry (ecologically sound, sustainable forestry practices). In addition to SAIH, the work of FADNIC is supported by its partners Horizont 3000 (the Austrian government's organization for development cooperation), the Embassy of Norway, Hilfswerk (Austria), and AIR/USAID (FADCANIC 2009). Though its work is subsidized by these governmental and NGO partners, FADCANIC well-deserves its designation as an entrepreneurial organization because of its sustained vision and multifaceted efforts to bring about positive changes and foster the development of new entrepreneurs.

Similar in spirit to FADCANIC, but entirely different in its structure, funding sources, and methodologies, the *Universidad Popular de Nicaragua* (UPONIC) is a private university with courses in agriculture, business, education, engineering, information technology, law, technology, naturopathic medicine, and a diversity of other disciplines that continue to expand. With fourteen regional campuses located in Managua and communities throughout western Nicaragua, UPONIC serves more than 14,000 students. Forward-thinking, ambitious and creative, some of the UPONIC administrators are deeply involved with *Inovacion Estelí*, selecting a new cohort of students for the innovation workshops each year and supervising their progress as they develop products for market, developing with us an internship program that will include both Nicaragua and U.S. students, and applying what they've learned to the design and implementation of new innovation centers in several campuses. In addition to developing and offering highly up-to-date curricula, some of the faculty members and administrators of UPONIC have themselves pursued the development and marketing of new products on a small

scale. Their simultaneous pursuit of offering private post-secondary education in business and entrepreneurship, developing curricula that is quite novel within Nicaragua, and embracing the challenges of developing products for market shows that these entrepreneurs are filled with Schumpeter's "wild spirit" of innovation.

INITIATIVE #4: ENVIRONMENTAL SCIENCE AND TECHNOLOGY

Some of the enterprises we observed take considerable pains to reduce their "ecological footprint" in the interests of sustainability. For example, Hacienda Mérida's emphasis on locally grown, organic produce, vegan protein sources, and relatively sustainable animal protein sources such as homegrown poultry and wild-caught fish minimize energy use and pollution while providing healthier meals for their guests. The CEAA teaches and develops organic, alternative agroecological methods using local resources and low-carbon input, small-scale, sustainable techniques. They emphasize crop diversity and soil conservation to increase the well-being of fincaros while conserving the forests and other natural resources of RAAS.

In addition to the conspicuously "green" efforts of these enterprises, other organizations target sustainable solutions to problems that impact Nicaraguans and their environment. The acquisition and use of energy resources often degrades ecosystems, but some technologies have the promise of providing energy in an earth-friendly, sustainable manner. Bluefields-based blueEnergy provides wind- and solar-powered electricity to remote villages of Nicaragua's Caribbean coast that have no public electrical supply, and recently expanded their efforts to address water quality as well (Luttrell 2008, blueEnergy 2009, BlueNews 2009). With unbelievable luck, we happened to visit blueEnergy Nicaragua's facilities and meet its Director Guillaume Craig on the very day they hosted a United Nations delegation headed by Alfredo Nissair, Resident Coordinator of the U. N. Nicaragua Development Programme (BlueNews July 2008). Mr. Craig kindly invited us to attend the planned presentations, and we eagerly accepted. During the event we saw first-hand how blueEnergy partners with the *Instituto Nacional de Tecnología* (INATEC) to train technical students, design, build and install wind turbines, and develop curriculum for a technical degree emphasizing renewable energy.

Like CEAA, blueEnergy's support base consists largely of grants and awards from international for-profit and not-for-profit organizations bolstered by material and service donations (e.g., solar panels from BP Solar, deep-cycle batteries for RE systems from Trojan), and financial contributions by individual and corporate donors (Cohn 2008, blueEnergy 2009). Work is accomplished by a complex network of Nicaraguan employees and a revolving collective of international volunteers and interns (many from France, the U.K. and the U.S.) led by a Board of Directors that includes blueEnergy founders (and siblings) Mathias and Guillaume Craig. To date, blueEnergy has completed a dozen installations in six communities totaling 12kW capacity. These projects include an 800 watt hybrid (solar and wind-powered) system in Pearl Lagoon that fuels a multidisciplinary auditorium in the FADCANIC-run school, and dual

hybrid energy systems in Kahkabila that provide electricity to the community center, school, medical clinic, and doctor's residence, enabling proper storage of medications and immunizations that require refrigeration (blueEnergy 2009).

BlueEnergy is working with INATEC to create the *Centro Ecologico Regional de Capacitacion Ambiental* (CERCA), where residents of communities throughout RAAS can receive technical training in renewable energy, sanitation and water purification technologies (blueEnergy 2009). This ambitious project supports their mission is to improve "lives in marginalized communities using a holistic approach to sustainable energy and related fundamental services" by developing infrastructure and empowering "local people by making them central figures in the design, construction, and implementation of...energy systems and other solutions (blueEnergy 2009)." Change agents, indeed.

INITIATIVE #5: HUMAN HEALTH AND HEALTH SERVICES

Ethnobotanical, natural medicines are found throughout Nicaragua, but are a specialty in Estelí (Berman and Wood 2008). Nestled upslope from the PanAmerican highway just north of Estelí, *La Finca El Cortijo* grows diverse medicinal herbs organically, combining ancient and modern technologies. Earthworms compost organic material, beginning the organic farming process, then finca workers hand-sort the precious worms from the resulting topsoil to start the cycle anew. Once harvested from the small, hand-sown beds, leaves of medicinal herbs (including chamomile and a diversity of mints and oreganos) are air-dried in a massive, solar-heated, passively vented structure. The dried leaves are ground (the only step using fossil fuels on the farm), bagged, and transported to the ISNAYA processing plant and laboratory in Estelí .

Everything at the plant is done by hand, including preparation and bottling of medicines, but products are tested in their modern laboratory. The friendly, hardworking employees included a man with Down's Syndrome who was carefully gluing boxes for the teas and medicines sold in a tiny retail outlet adjacent to the plant and in stores throughout Nicaragua. It was eye-opening to witness every step in the complex process, from earthworm composting to packaging, in a single day, and equally impressive to observe workers diligently completing their particular steps in the labor-intensive operation. ISNAYA, managed by the *Centro Nacional de la Medicina Popular Tradicional*, provides affordable, traditional alternatives to expensive "western" medicines, produced locally start-to-finish, and employing many residents in the process. Given the inconsistent electrical supply, high unemployment rate, and low wages predominant in Nicaragua, it makes sense to use human labor rather than mechanization for manufacturing products like medicines linked to folk traditions.

Nicaraguans embrace diverse approaches to human health, from herbal folk remedies to modern western medicine. Within this broad range of health practices works Dr. Tabatha Parker, Head of *Naturopathic Doctors International* (NDI) in Nicaragua. Dr. Parker is an *extranjero* from the United States, but this creative, energetic innovator has adopted Isla de Ometepe as her

home. Here, she works with staff in Moyogalpa's modest, government-run hospital and several tiny clinics located strategically along the bumpy public bus routes around the island. In addition to these duties, Dr. Parker runs a local clinic in Los Angeles, home to the women's cooperative *Hotel Pueblo* discussed earlier, and a service-learning program that links brigades of volunteers from developed nations to the clinics of Isla de Ometepe. Volunteers pay a fee, donate medical supplies, stay with *Hotel Pueblo* families, and work in the clinics providing naturopathic and traditional western medical care. During their stay, they visit local tourist destinations, learn about farm and island life, and experience an intensive internship learning naturopathic practices in a remote location within a developing nation. The educational experience is life-changing for many.

Dr. Parker, a tiny, visionary powerhouse, has developed a program that intertwines the local communities she serves with brigades of volunteers. Community members house, feed, transport and host the volunteers, while the volunteers bring supplies, energy, technical knowledge needed by the island communities, and, of course, funding that supports the clinics and local communities. The local residents support the clinics and enrich the brigade volunteers by sharing their food, families, homes, farms, and knowledge with the volunteers. Further, Dr. Parker also provides medical training for some island residents, who then bolster the ranks of the local medical personnel. All benefit and grow from participation in this model. The unseen, magical components are Naturopathic Doctors International (NDI), a private, non-profit organization, and Dr. Parker, who single-handedly organizes and runs the internship program while working full-time in the clinics and hospital. Her entrepreneurial spirit drives the synergy that yields better health care for the island residents, an invigorated community spirit and economy, health care training and employment for locals, and priceless service learning experience for the brigade participants.

INITIATIVE #6: INNOVATION

Even a simple welding shop can produce entrepreneurship when someone with an astute and creative mind recognizes a dire local need and uses ingenuity to address that need. Imagine the dilemma: local farmers (*fincaros*) used heavy plows constructed of metal, which broke, or wood, which was time-consuming to configure into a plow. Following the civil unrest of the 1980's, often families were headed by women, who had to wield the heavy plows; thus, the plow's mass was even more problematic. Local welders knew of a European design that was superior, but unfamiliar to the *fincaros*, and not readily embraced because of its unfamiliarity. The entrepreneurial-minded individuals constructed plows out of rebar, promoted the design and located distribution channels to help the new design spread. The new style of plow worked well behind teams of oxen and met other requirements of *Reserva Mirafior*, home to thousands of small-scale, family-owned *fincas*. Today, the new style of rebar-constructed plow is pulled by

oxen teams throughout Miraflor, because some entrepreneurial-minded individual recognized the significance of a European engineer's design and facilitated change.

Fostering some kinds of change is not only potentially profitable, but of vital importance if families are to remain healthy, keep hunger at bay, and spare critical ecosystems from ruin. In Nicaragua, almost all meals are cooked over wood-burning stoves, each of which combusts a considerable amount of wood on a daily basis. *Gallo pinto*, the beans-and-rice staple eaten three meals a day, every day, by many Nicaragua families is characterized by its salty, smoky flavor imparted by the smoke of the burning wood, but fuel wood is both environmentally unsustainable and detrimental to human health (McCracken et al. 2003, Trees, Water and People 2009a). Deforestation is rampant in Nicaragua, greatly exacerbated by the harvest of fuelwood (Weaver et al. 2003), and the smoke from cooking fires poses a serious health hazard to Nicaraguan women (McCracken et al. 2003).

Stoves using alternative fuels could alleviate these problems, but are often dismissed because they are too expensive, the fuels used may be inaccessible or unaffordable, and the stoves fail to impart the critical, familiar smoky flavor essential to much traditional Nicaraguan fare (personal observation of authors). Nicaraguans will not readily abandon their wood-burning stoves, but perhaps a more efficient design would satisfy the cultural and economic needs for traditional cooking (*gallo pinto* is delicious, nutritious, and relatively affordable) while causing less harm. Such a set of alternatives, called Ecofogon stoves, is manufactured and distributed by PROLEÑA, the Association for Biomass Energy Promotion (Prolëna 2009).

PROLEÑA is a nonprofit NGO working towards sustainable fuelwood production and use in the Pacific region of Nicaragua (Proleña 2009). Ecofogon stoves, based on a design developed by their NGO partners Aprovecha and Trees, Water & People, are constructed locally from local resources, and use only 30-35% as much wood compared to traditional open-fire cooking stoves (Trees, Water and People 2009a). The improved efficiency results in a significant cost savings to families (up to 10% or more of income for the many families living on less than \$2/day), reduced carbon emissions (about 1 ton/year/stove), and reduced demand for fuelwood that may slow deforestation (Trees, Water and People 2009a). Further, the design reduces carbon monoxide and particulate emissions, protecting the health of women who spend many hours a day cooking (McCracken et al. 2003, Trees, Water and People 2009a). Since 1999, Prolena and their NGO partners have installed nearly 8,500 Ecofogon stoves- including one at *Finca Magdalena*, demonstrating their commitment to being environmentally friendly- and planted more than 1,800,000 trees in Nicaragua (Trees, Water & People 2009b). These efforts alone won't save Nicaragua's tropical seasonal forests, but they might stay the hand of the forests' complete destruction, giving environmental scientists, natural resource managers and policymakers more time to develop and implement protective measures (Weaver et al. 2003, Trees, Water & People 2009b).

INITIATIVE #7: WATER

Water beautifully exemplifies the need for entrepreneurial change agents. Globally, many millions lack of access to clean, safe water, a crisis threatening progress towards the U.N. Millennium Development Goals, and nearly two million children die annually due to diseases caused by poor sanitation and unsafe water (Dervis 2006). Clean, public water sources are scarce in Nicaragua, yet hot, dehydrated travelers need inexpensive, cold, purified water. Throughout our travels, street vendors sold small, sealed, plastic bags of ice-chilled water for 1-2 Cordobas (5-10 cents USD). Thirsty travelers bite off the bag's corner and suck out the contents- a very practical design. The pioneer of this practice is long forgotten, but someone realized the need for low-cost, clean water and the little plastic bags are now ubiquitous.

Clean water can be even more elusive in rural areas of Nicaragua (García Altamirano 2008), a need long recognized by national and international agencies and NGO's (Gorter et al. 1991, Macy and Quick 1998). In our travels we see remnants of a variety of water filters provided to families by well-meaning organizations, but often the filtration material (sand, etc.) is missing and the container being used for some other purpose, such as holding trash or feeding livestock. This pattern holds true even in areas with known ground- and surface-water contamination (e.g., the area whose water quality is reported in Garcia Altamirano 2008). Why don't the families use the filters? It isn't clear whether individuals do not understand the degree to which local water sources are contaminated with disease-causing organisms (though most we interviewed seem knowledgeable about local water resources and their problems), have not been taught how to properly use or maintain the filters, dislike the work involved in using and maintaining them, abandon devices that fail after some period of use, lack access to parts that break, or abandon them due to some other impediment.

Most filters are provided under a philanthropic model (e.g., see HydrAid, LifeStraw, Potters for Peace) where devices are distributed and (hopefully) their use explained, but little to no support is provided thereafter, and therein may lay the problem. Innovation and entrepreneurship leading to a more market-based model might be more effective than the current philanthropic model. Individuals might purchase water trusted to be purified when the only free water available is contaminated. Such an enterprise might yield profits to the entrepreneur and health benefits to members of the community, who are unlikely to use their limited resources to purchase water unless it is tested regularly and somehow certified as "clean." The cost of maintaining a consistent, tested source of purified water would thereby be born by many community members, guaranteeing access to safe water to all, though at a cost.

WHY IS MISS ARLENE SO SPECIAL?

These examples bring us once again to Miss Arlene and her oven on Little Corn Island, which supports fewer than 1,000 residents and has no roads or cars- only footpaths. We did not

attempt to pigeon-hole her work, allowing it to exemplify both invention as well as budding entrepreneurship. Hunger drove us to Miss Arlene. Searching for bread at the end of a long day of snorkeling and island-exploration led to one stop that yielded two loaves, and another with none, with the explanation that they could only bake six loaves at once and were sold out. Rounding a bend in the path, we were greeted by a table laden with baked goods: coconut bread and ginger bars, spice-scented and heavenly. How was this bounty possible? Miss Arlene, tiny, quiet, and unassuming, led us unceremoniously to the back of her house, where stood a tall, handmade oven capable of baking up to 24 loaves of coconut bread or dozens of ginger bars with a single load of charcoal (Figure 2). Strewn nearby were her earlier, less-successful attempts at designing a bigger, better oven, for that was exactly what she'd done: recognized the constraints of the island's traditional ovens, the potential for expanded commerce if that constraint could be overcome, and the ingenuity and persistence to invent alternatives until she was successful. This oven was her creation, an invention that allowed her entrepreneurial talents to blossom.



Figure 2. Miss Arlene's oven, Little Corn Island, Nicaragua.

With the expanded capacity, Miss Arlene provides delicious, locally produced food for both community members and passing tourists, thereby earning money to support her family. Her vision was larger than her current enterprise, however. Aware that wealthy tourists such as ourselves immediately headed towards expensive waterfront restaurants to buy overpriced coffee to accompany her homemade goodies, Miss Arlene is developing a small café next to the footpath where she can sell coffee along with her baked goods. Little remained to bring her vision to fruition: a small thermos and a few cups and saucers would convert her table of bread to a corner destination for locals and tourists alike. Lacking any competition, Miss Arlene invented

the oven needed to produce her unique and delicious baked goods for sale in bulk and will soon offer a relaxing café experience where none currently exists- right along the island's major thoroughfare. Her entrepreneurial vision, drive and persistence are bringing change to her neighborhood, currently only marginally linked to the growing tourism of Little Corn Island.

SO WHAT?

Clearly, as these many and diverse examples demonstrate, both small business practices and true entrepreneurship are flourishing and wonderful in Nicaragua. But sometimes we observed invention or innovation where we just as easily might have witnessed entrepreneurship. Good ideas that could benefit families and communities remained just good ideas. Why are some activities in Nicaragua entrepreneurial while others seem mired in early stages of development?

True entrepreneurship in Nicaragua is sometimes driven by pull factors, such as seen with Hacienda Mérida, EcoFogon stoves, the re-bar constructed plow, and others. Elsewhere, entrepreneurship is driven by push factors such as the need to support a family. Miss Arlene's inventive oven that led to entrepreneurship is a perfect example. These good ideas were sometimes generated within Nicaragua and sometimes elsewhere, but in each case it was within Nicaragua that the "wild spirit" caught hold and a creative idea transitioned into entrepreneurship that subsequently transformed lives. Whether tapping into push or pull motivations, one of the great challenges in Nicaragua is to transition more of these good ideas, such as the *pulpa*-removing machine or blueEnergy's designs for electricity generation in remote villages, to entrepreneurship.

What factors might contribute to greater entrepreneurial activity in Nicaragua? Creativity and inventiveness are not lacking in Nicaragua- they are readily witnessed when entering homes, gardens, and public spaces (the murals of Estelí are legendary, for example). Bringing about change through development and marketing of innovative products and services does not come easily to Nicaraguans, however, who tend to be community-oriented rather than independently driven. We have observed that even the most energetic, talented and creative individuals in Nicaragua are generally not great risk-takers and lack a strong internal locus of control. In comparison, community-oriented enterprises such as the *Hotel Pueblo* cooperative seem to have a better chance of thriving. Perhaps more entrepreneurial organizations are needed, or perhaps entrepreneurship should be encouraged through cooperatives and other community-based efforts rather than through individuals. In our opinion, it is in such a milieu, one of social cooperation or collaboration rather than independence, where Schumpeter's "wild spirit" of entrepreneurship is most likely to take flight.

We recommend that future studies of entrepreneurship at the base of the economic pyramid be undertaken in Nicaragua and other developing countries to understand better how to enable entrepreneurs living in challenging economic situations in diverse societies. Miss Arlene

should be encouraged to develop her bakery and coffee shop, even to consider broader application of her oven design, and others like her should be supported in pursuing their own visions of benefiting their families and communities. With some guidance and a better understanding of how entrepreneurship works, these untapped “wild spirits” of entrepreneurship, working independently or within community-based or cooperative efforts, could benefit many living at the base of the economic pyramid.

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