

# ACADEMY OF ENTREPRENEURSHIP JOURNAL

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## LETTER FROM THE EDITORS

Welcome to the second issue of the *Academy of Entrepreneurship Journal*. As you know, the editorial mission of the *AEJ* is to publish empirical and theoretical manuscripts which advance the entrepreneurship discipline. As editors of the *AEJ*, we intend to foster a supportive, mentoring effort on the part of the referees which will result in encouraging and supporting writers. Too often differing views are never heard because of a particular bias of the editors. We welcome different viewpoints because in differences we find learning; in differences we develop understanding; in differences we gain knowledge and in differences we develop the discipline into a more comprehensive, less esoteric, and dynamic metier. In keeping with the pattern of excellence which the *AEJ* has established, this issue contains articles which will be of interest to entrepreneurial scholars.

Throughout Volume 1, and continuing with the present issue, the Editorial Board has maintained an acceptance rate for manuscripts of approximately 25%. We think that you will recognize the high standards which the Board preserves in the contents of this issue.

We have edited some of the manuscripts in this issue due to space limitations. In every instance, we have attempted to preserve the flavor of the article. When we have failed in that attempt, the authors bear no responsibility.

Authors of manuscripts published in the *AEJ* retain ownership and must provide to the Academy publication permission in which they hold the Academy harmless for any liability associated with the publication of their manuscripts. Consequently, the authors are solely responsible for the content of their articles and neither the Academy or the *AEJ* take responsibility for that content.

We invite readers to submit manuscripts for consideration by the *AEJ*. We also hope that you will join us at the National Conference of the Academy which is scheduled for April 1 through 4, 1997, in Las Vegas, and the International Conference, which is scheduled for October 14 through 17, 1997, in Maui, Hawaii. For information about the conferences, check our WEB page at:

<http://www.wcu.edu/cob/faculty/conf.html>

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# **DOES FIRM ORIGIN MATTER? AN EMPIRICAL EXAMINATION OF TYPES OF SMALL BUSINESS OWNERS AND ENTREPRENEURS**

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## **ABSTRACT**

*To complement the previous attempts to define the elusive concept of entrepreneurship, this study examines the impact of firm origin on small business owners/entrepreneurs and the characteristics of their firms. A review of previous typologies is presented along with a categorization of the groups of business owners/entrepreneurs from those typologies into three basic groupings: 1) Creators, motivated by the vision of creating a new product or service; 2) Inheritors, whose path to business ownership was paved by a family member; and 3) Operators, who are motivated by the financial aspects of business operation. Distinctions among these groups are explored on a sample of 231 business owners. The existence of certain aspects of the three groups is established by differences in goals, attitudes, knowledge, and demographic characteristics. Policy implications and future research agenda are also discussed.*

## **INTRODUCTION**

Since the earliest writings about entrepreneurship, there has been little agreement on a definition. In certain respects, there is considerable overlap between entrepreneurship and small business, if not, indeed business of all sizes. Entrepreneurship is not limited to firms of a certain size, or to certain industries, or only to some cultures. Entrepreneurial activity is carried out by people of both sexes, of all ages, and of all backgrounds. In some ways, entrepreneurship has baffled researchers in social sciences the way subatomic particles have baffled physicists. Its impact is observed, but the thing itself seems ephemeral and invisible.

Like physicists seeing the marks left on the screen of an electron microscope by the mysterious subjects of their inquiry, entrepreneurship researchers have examined the economic activity that results from entrepreneurship: the new enterprises and jobs that are created, the new products invented, and the new services that are offered. But when it comes to specifying what it is that creates these phenomenon, there is little agreement. The question of what the definition of entrepreneurship is has been central in both theory building and empirical work. A good definition will put boundaries around entrepreneurship and separate it from all other types of business activity.

Richard Cantillon, the 18th century businessman and economist, described entrepreneurs as traders who risked their own capital. For Cantillon, (Spiegel, 1983 and Barreto, 1989) the central component of the definition of entrepreneurship revolved around

the concept of risk taking, which was rarely encountered by the independently wealthy land owning class or the salaried worker. Later research carried out by McClelland (1965), McClelland and Winter (1969), and Timmons (1986), concluded that, to a moderate extent, entrepreneurs are risk takers. Other research, such as Brockhaus (1992), concluded that entrepreneurs are not risk takers.

Jean-Baptiste Say, a French textile manufacturer and economist, wrote that the human contribution to economic growth came in three types: scientists, workers, and entrepreneurs (Scott, 1933, p.4). The entrepreneur's role was to coordinate the other elements of production such as capital, labor, and land, produce products, estimate demand, and market the product.

Perhaps the most influential conception of the entrepreneur belongs to Joseph Schumpeter (1947), who wrote that entrepreneurs have a desire to "found a private kingdom, drive to overcome obstacles, a joy in creating, and satisfaction in exercising one's ingenuity." Schumpeter saw the entrepreneur playing a key role in the economic world. Improved products and more efficient processes of production were developed by the entrepreneur, leading to a stronger, more efficient economy, albeit at the expense of the older, less efficient producers. Schumpeter termed this the process of "creative destruction." Thus, for Schumpeter, the key central concept of entrepreneurship is innovation in the broadest sense of the word, leading to increased economic efficiency and well-being.

Wilken (1979) saw a continuum of innovation when he examined entrepreneurs. Some entrepreneurs, he argued, will initiate a new venture, while others, on the opposite end of the continuum, will only make minor changes to an existing one. Khan and Manopichetwattana (1989) developed a model for distinguishing between innovative and non-innovative firms. Smith and Miner (1983) showed the distinctions between "craftsmen" and "opportunistic" entrepreneurs based upon a sample of 38 business owners. Gartner, et al. (1989), as is discussed in more detail below, posited eight types of entrepreneurs based upon factor analysis of characteristics of a sample of 106 entrepreneurs which revealed different strategic orientations. Archer (1991) saw three groups of entrepreneurs: an elite, general merchants; and petty merchants. She made this distinction based upon a study of 19th century Detroit. Light and Rosenstein (1995) reject these distinctions and argue for a broad inclusion of the self-employed and business owners, including those working part-time, under the rubric of entrepreneurship. "Existing entrepreneurship theory is elitist" they concluded (Light and Rosenstein, 1995, 2).

Gartner (1989) argued similarly that the central fact of entrepreneurship is organizational creation. Accordingly, he proposed that research in the field of entrepreneurship focus on the process of new venture creation and the role entrepreneurs have at that birth. Low and MacMillan (1988) similarly defined entrepreneurship as "the creation of new enterprise." They conclude "...entrepreneurs tend to defy aggregation. They tend to reside in the tails of population distributions, and though they may be expected to differ from the mean, the nature of these differences is not predictable. It seems that any attempt to profile the typical entrepreneur is inherently futile." Cunningham and Lischeron (1991) point out that any definition focusing on business creation excludes those who inherit or purchase a business.

Clearly, many entrepreneurs are not as interested in the creation of new enterprises as they are in operating or improving existing businesses. Some are interested in creating profit through various means of financial engineering, such as restructuring the balance sheet of a business by means of a public offering. Thus, creation of a new enterprise may be too restrictive a definition to capture the broad array of entrepreneurial activity. Light and Rosenstein (1995, 3) agree, stating, "we deem it useless to distinguish entrepreneurs from the self-employed on the ground that only entrepreneurs innovate."

Carland, et al. (1984) propose a distinction between small business owners and entrepreneurs. For these authors, the distinction rests with the emphasis on an entrepreneur's focus on innovation along with goals of growth and profit, whereas the small business owner has less emphasis on innovation and sees the business as an extension of his or her personal goals.

Despite the extensive research efforts to define and delineate entrepreneurship, there has not been a study which explores and explains entrepreneurial activities based on firm origin. Thus, it is the purpose of this paper to explore the issue of firm origin and examine its impact through a survey of a diverse group of small business owners.

## THEORETICAL ISSUES

There exists a market for small business ownership. Smelser (1976, 126) says "Like all markets, the market for entrepreneurial services has a demand and supply side." The supply side, in the formulation offered here, is made up of opportunities that include businesses which are available for purchase, franchises, family businesses available for children of owners to grow into, and ideas waiting to be tested in the real world. The demand side is comprised of current and aspiring business owners who are interested in ownership of some form. Light and Rosenstein (1995, 12-25) also propose a supply and demand model. They see supply as the people and the human resource characteristics of the workforce such as ethnicity, sex, age, and education. They formulate the demand side as the financial differential between what entrepreneurs earn and salary employment.

In the model implicit in this study, the supply side made up of ownership opportunities can be described as having numerous characteristics including price, whether the businesses are franchises or independent, what industries the businesses are in, whether financing is available, and the size of each enterprise. The supply side is influenced by factors such as technology, which may give an advantage to businesses of certain size or management; the economy, which affects the demand for the product or service of each business and influences interest rates and other financing terms; and tax laws, which have an impact on the decision to sell a business by its current owner and the price a future owner is willing to pay.

The demand side is comprised of the people who want to buy or start businesses and become owners. The demand side is affected by factors such as the unemployment rate and current employment opportunities as measured by wages, benefits, and other characteristics such as flexible time that potential entrepreneurs may value, as well as the ethnic and educational backgrounds and the values of aspiring entrepreneurs. In the traditional economic

model of entrepreneurship, the characteristics such as age and education of the potential entrepreneurs are on the supply side. In this model, where the commodity is business ownership, characteristics such as age and education are on the demand side.

The interaction of supply and demand ultimately determines the types of small businesses and the characteristics of entrepreneurial activity that one observes. The size characteristics, industry focus, types of technology used, and profitability of the businesses that are created and operated under this rubric of entrepreneurship, are all products of this interaction of supply and demand.

Therefore, based on this market type of interaction, different types of entrepreneurship and small business ownership will be observed. For example, as computer and communications technology have changed, more home-based businesses have developed. As immigration by groups predisposed to entrepreneurship increases, franchise opportunities increase to meet their preference for businesses which have already been designed. Thus, the types of small business and entrepreneurial ventures that are observed are products of this supply and demand process and will change over time.

Dramatic evidence of this is provided by reading the work of early students of entrepreneurship. In the 1730's Cantillon defined entrepreneurs as traders, taking the risk of purchasing at a fixed price and gambling on selling at a higher, but uncertain price. Say, writing in the 1820's, believed that land or other natural elements were one of the essential ingredients of entrepreneurship, along with capital and human effort. Schumpeter, writing during the Great Depression, saw entrepreneurs as essential to his process of creative destruction: the tearing down of old methods and products and replacing them with better methods and products.

Other examples exist, but the point is that entrepreneurship has been defined in different ways at different times. As the manifestation of this interaction between supply and demand, entrepreneurship has been and remains a moving target, affected by the supply of opportunities and the demand created by the aspiring entrepreneurs.

This paper explores the nexus between this supply and demand that takes place when an entrepreneur makes the decision to enter the realm of ownership. At that time, the entrepreneur's preferences combine with options available to produce a course of action. For this reason, it may be critical to examine the conditions prevailing at the origin of the venture.

#### **DEVELOPING TYPES OF ENTREPRENEURS BASED ON EXISTING TYPOLOGIES**

Vesper (1980) offers a comprehensive list of potential entry strategies for ventures. He states that the selection of the entry strategy has broad implications for future success of the venture, and he provides an eleven category typology for entrepreneurial strategies. These are (1) solo self-employed individuals, (2) team builders, (3) independent innovators, (4) pattern replicators, (5) economy of scale exploiters, (6) capital aggregators, (7) acquirers, (8) buy-sell artists, (9) conglomerators, (10) speculators, and (11) apparent value manipulators.

Shuman et al. (1982) propose a ten group typology: (1) Independent, started venture from scratch, (2) Acquirer, (3) Successor in family business, (4) Successor in non-family



business, (5) Franchiser, (6) Franchisee, (7) Corporate entrepreneur, (8) Non-profit entrepreneur, (9) Self-employed, and (10) Other. Their typology, while broadly inclusive, has categories which are not mutually exclusive.

Gartner et al. (1989) performed an analysis of a sample of entrepreneurs based on their individual characteristics, the strategies they followed, the structures and processes they used, and the environments in which their organizations functioned. A factor analysis of these variables yielded eight types: 1) Those who are using entrepreneurship to escape to something new, 2) Those who put deals together, 3) Those who apply skills and contacts they have previously developed, 4) Those who purchase firms, 5) Those who use their expertise to compete, 6) Those who stress service as a competitive strategy, 7) Those who have a unique, new idea, 8) Those who adapt an existing strategy but do it somewhat better.

Analysis of these different approaches led to a conceptualization of three distinct types of entrepreneurs:

1.	<i>Creators.</i>	Creators are defined as those who have initiated a new venture with the dream of a creating a new product or service.
2.	<i>Inheritors.</i>	This group includes those who have inherited a business from a family member or who were brought into a business through a family connection.
3.	<i>Operators.</i>	Operators are those who purchase a business or a franchise. They are motivated by financial goals, lack of options, or a desire to buy an existing business or to franchise a proven formula as a way to minimize risk.

It is the aim of this research to conceptualize these three types based on the origin of the firm and to investigate the effects of these origin differences on the business operation over its lifetime. Parallels and differences between the existing typologies and the types examined here are summarized and compared in Table 1. In this study, respondents were asked to pick from a list of seven statements which best described their path into business ownership or, if none of the seven applied to them, to briefly write out their scenario for business initiation. The statements were developed based on focus group interviews and pretests of the survey instrument. The statements were not designed to be mutually exclusive, but to represent the scenario including career issues and personal motivation that most accurately described the respondents' path into business ownership. All the respondents fit one of the seven statements. The seven statements were used to capture as much variation as possible regarding the conditions prevailing at the time of venture formation, with the goal of aggregating categories to produce the following three types of entrepreneurs.

<b>Authors</b>	<b>Rogoff &amp; Lee</b>	<b>Vesper et al. (1980)</b>	<b>Shuman et. al. (1982)</b>	<b>Gartner et al. (1989)</b>
<b>Criterion</b>	<b>Conditions at Firm Origin</b>	<b>Strategic</b>	<b>Operational</b>	<b>Personal Strengths/ Situation Based</b>
	<b>Creators</b>	<b>Self-Employed Individuals Team Builders Independent Innovators</b>	<b>Independent, Started from Scratch Corporate Entrepreneur Non-Profit Entrepreneur Self-Employed</b>	<b>Pursuing a Unique Idea</b>
<b>Entrepreneurship and Small Business Types</b>	<b>Inheritors</b>	<b>Self-Employed Individuals Team Builders</b>	<b>Successor in Family Business Self-Employed</b>	
	<b>Operators</b>	<b>Self-Employed Individual Pattern Replicators Economy of Scale Exploiters Capital Aggregators Acquirers Buy-sell Artists Conglomerators Speculators Apparent Value Manipulators Team Builders</b>	<b>Acquirer Successor in Non-Family Business Franchiser Franchisee Corporate Entrepreneur Self-Employed</b>	<b>Escaping to Something New Putting a Deal Together Roll over Skills/Contacts Purchasing a Firm Leveraging Expertise Aggressive Service Methodological Organizing</b>

Table 2 shows the seven choices that respondents were offered regarding the conditions and their goals at the time they initiated their ventures and how these seven statements were aggregated to create three categories. Option 1 is the Creators, who comprise 54% of the sample. Options 2 and 3 are Inheritors, who comprise 9% of the sample. Options 4 through 7 are Operators who comprise 36% of the sample. All responses to the Other category could be easily recoded within the three categories.

Path of Initiation	Category	Respondents (n=223)	Percentage
I created this business totally from scratch. Creating a new product or service had always been my dream.	Creators	110	49%
I inherited this business from my parents. I would have chosen another career if my parents had not been in this business.	Inheritors	12	5%
I inherited this business from my parents, but always wanted to establish my own venture.	Inheritors	10	4%
I got into this business when I did not have any other alternatives. I lost my job and could not continue my career.	Operators	11	5%
I started this franchise business as a means of getting into the business world. I wanted to start a business, but I did not want to take the chance on a completely new business.	Operators	12	5%
I got into this franchise business after I retired from my previous job. I did not want to take a lot of risk.	Operators	2	1%
I bought an existing business because I saw a good opportunity with it.	Operators	67	30%

## HYPOTHESES

Table 3 shows the various hypotheses regarding how the three groups are expected to differ from each other on goals and attitudes. Creators, driven by the vision of a new product or service, are hypothesized to be oriented strongly toward creating a new product or service, utilizing their skills, and contributing to society. Creators are also expected to view themselves as true entrepreneurs and to be highly satisfied with their business. They are not expected to be motivated by financial rewards; nor are they expected to view their activity as highly risky because of their belief in their vision.

Inheritors, who have not initiated the business they now own, are expected to score lower than the other groups relative to the goals of new business and new product creation. They are also expected to be less growth oriented and less committed to contributing to society. On all other measures they are expected to be in the middle ranges.

Operators are expected to be motivated by financial rewards and the creation or purchase of the new business that will help them achieve that goal. Their knowledge scores are expected to be high because they are fundamentally business oriented. They are expected to be highly growth oriented, satisfied with their businesses, and to view themselves as true entrepreneurs. They are not expected to be oriented to contributing to society or creating a new product as a primary goal.

<b>Goal/Attitude</b>	<b>Creators</b>	<b>Inheritors</b>	<b>Operators</b>
<b>Financial</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>
<b>Replacing Current Job</b>	<b>High</b>	<b>Medium</b>	<b>Medium</b>
<b>Creating New Product</b>	<b>High</b>	<b>Low</b>	<b>Low</b>
<b>Creating New Business</b>	<b>Medium</b>	<b>Low</b>	<b>High</b>
<b>Gaining Respect</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>
<b>Utilizing My Skills</b>	<b>High</b>	<b>Medium</b>	<b>High</b>
<b>Contributing to Society</b>	<b>High</b>	<b>Low</b>	<b>Low</b>
<b>Risk Awareness</b>	<b>Low</b>	<b>Medium</b>	<b>Medium</b>
<b>Objective Knowledge</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>
<b>Growth Orientation</b>	<b>Medium</b>	<b>Low</b>	<b>High</b>
<b>Consider Myself to be True Entrepreneur</b>	<b>High</b>	<b>Medium</b>	<b>High</b>
<b>Satisfaction with Business</b>	<b>High</b>	<b>Medium</b>	<b>High</b>

## **METHODOLOGY**

In an attempt to establish the types of small business owners and entrepreneurs based on the three types discussed above, 231 small business owners were questioned about the path they followed into business ownership, goals that motivated them at the time of the initiation of their venture, current goals, various demographic factors, and facts about their businesses.

They were also given a nineteen question test of their business knowledge, asked to subjectively judge their own levels of business knowledge, and to report their level of formal education. Education has been shown to be a potent positive influence on entrepreneurship. Light and Rosenstein (1995) estimate that each additional year of education results in a .7% increase in the likelihood of a worker entering self employment. Robinson and Sexton (1994) found approximately similar results. Cooper and Dunkelberg (1987) found higher levels of education among entrepreneurs than the general population. Because education's effects can be myriad, three measures mentioned above were included in this study.

The questionnaires were distributed and collected by account executives from local radio stations in four mid-sized, eastern and midwestern United States cities. The types of businesses that participated represent an extremely broad range: from antique stores to travel agencies. The account lists maintained by the radio station account executives are a virtual census of business compiled from Chamber of Commerce lists, telephone directories, and visual inspection of the area.

Steps were taken to insure anonymity and unbiased responses. Questionnaires were distributed at random to business owners from the account lists. Participants were given the option of returning the completed questionnaires in a postage paid envelope directly to the

investigators. Approximately one third of the respondents availed themselves of this option. The balance of the respondents returned the completed questionnaires directly to their radio station account representatives. The surveys included a cover letter from the researchers describing the purpose of the study and assuring them of confidentiality. Respondents were encouraged to call the researchers directly with any questions. Of the 231 respondents, 11 called prior to returning their questionnaires to be reassured of confidentiality. The radio station account executives were instructed to give each participant up to six weeks to complete the questionnaire and to follow up at least five times to encourage completion. 49% of the questionnaires were completed, returned, and deemed usable. A follow-up survey of 38 non-respondents showed no significant differences between them and the respondents on demographic or business characteristics.

Table 4 shows the characteristics of the sample. Of the 231 respondents, 73% are male, a statistic that is stable across the four major survey cities. The respondents are predominately married (70.9%), and white (95.1%). 75.3% have beyond high school level education and the median age is 40. 83% have incomes more of than \$70,000 per year. The respondents are, in general, of a retail nature (48.7%) and locally focused (74.5%).

Characteristic	N	Percent
<b>Gender:</b>		
Male	165	73.0
Female	61	27.0
<b>Age:</b>		
Under 20	2	0.9
21 - 30	23	10.1
31 - 40	89	39.2
41 - 50	74	32.6
51 - 60	27	11.9
61 and over	12	5.5
<b>Income:</b>		
Under \$30,000	18	8.1
\$30,001-\$50,000	44	19.9
\$50,001-\$70,000	44	19.9
\$70,001-\$90,000	37	16.7
\$90,001-\$110,000	29	13.1
\$110,001-\$130,000	14	6.3
\$130,001-\$150,000	8	3.6
\$150,001-\$170,000	5	2.3
\$170,001 and over	22	10.0
<b>Education:</b>		
1-8th Grade	3	1.3
Some High School	5	2.2
High School Graduate	48	21.1
Some College	69	30.4
College Graduate	79	34.8
Graduate Degree	23	10.1

Comparing this sample to characteristics of small business in general showed some important similarities: Women own approximately 27% of businesses in the United States (Brush, 1992) and 27% of the sample is women. Based upon Internal Revenue Service reporting, 23% of businesses are corporations, but the sample is 47.8% corporations. According to 1992 Census statistics, 24.8% of businesses are of a retail nature, but the sample here is nearly half retail. Thus, it cannot be proven that the small business owners in this sample comprise a sample whose characteristics are generalizable to all small business owners.

A seven-point Likert scale with (1) being "Strongly Disagree" and (7) being "Strongly Agree" throughout the survey was used to measure attitudes and estimates of goals at the time of initiation of the enterprise. Analysis was performed using two group T tests and analysis of variance (ANOVA) in SAS.

## RESULTS

Table 5 shows the characteristics of the three groups of business owners and their businesses. There is no statistically significant difference among the three groups regarding age or education. The Creators' businesses are somewhat more focused in the service sector and the Inheritors are somewhat more focused in the retail sector. However, analysis of these differences did not reveal them to be controlling variables of what was observed as differences among the groups.

Mean income is highest for the Inheritors at \$86,200, with the Creators having a mean annual income of \$75,200 and the Operators having a mean income of \$65,200. In general, the Inheritors in the sample own the largest, longest-established businesses. The mean number of full-time employees is highest at 18.9, mean revenue is the greatest at over \$2.2 million, and mean years in existence is over 35. It is likely that the size of the ventures is what leads to the highest income on the part of the Inheritors.

Operators, with the lowest income among the sample, own the second largest firms on average. The mean number of full-time employees is 11.56, mean yearly sales revenue is \$1.9 million, and the average years in existence for their firms is nearly 15. Creators have the smallest and youngest firms with under ten full-time employees on average, an average revenue of \$919,000, and an average of 8.6 years in business.

For the purpose of the study, a firm is defined as a family firm if ownership resides within the family and two or more family members are employed. As one would expect, by definition, the Inheritors have a family connection 100% of the time. But both Creators at 46% and Operators at 60% have significant family components to their enterprises. In the case of Operators and Creators, these family connections tend to be with members of their own or younger generations, while the Inheritors always have an older generation connection.

To sum up the characteristics shown in Table 5, it is clear that the Inheritors own larger, longer established firms. As a result of this, they earn more money but are similar to the other groups in age and education dimensions. The Operators and Creators are more similar to each other, but the Operators own larger firms, with longer average tenure, yet actually earn less.

Variable	Creators (n=114)	Inheritors (n=22)	Operators (n=92)	F	p
Mean Age	35.9	33.8	36.7	0.70	.4960
Mean Education Attained	4.26 Some College	4.23 Some College	4.22 Some College	0.03	.9753
Mean Income	\$75,200	\$86,200	\$65,200	2.32	.1004
Number of Employees (6)	9.57	18.91	11.56	2.02	.1352
Sales Revenue (000)	919 a*	2,272 b	1,910 b	4.57	.0116
Years in Business	8.61 a	35.14 b	14.92 c	27.57	.0001
Family Connection to Business	No: 46%	Yes: 100%	No: 60%	2.42	.0913

\* The same superscript implies that two means are statistically the same while different superscript means statistically significant difference between the two at the 5% level.

Table 6 outlines the results when respondents in the three groups were tested as to their goals and motivations at the time of their venture initiation using a seven point Likert scale. The goal of "earning lots of money" is scored a 5.11 by the Creators, a 5.84 by the Inheritors, and a 5.12 by the Operators ( $F=1.90$ ,  $p=.1523$ ). The Inheritors' score is higher, though not statistically significant. The goal of "replacing my current job" scored highest with the Creators, at 4.40, lower with the Inheritors, at 2.25 (who often had no current job to replace as they were moving into the family business directly from school), and in the middle for the Operators, at 3.75. These findings are significant at the 0.0002 level ( $F=3.07$ ).

As one would expect, the goal of creating a new product or service is scored highest by the Creators, at 3.60, second by the Operators, at 3.06, and lowest by the Inheritors, at 2.55 ( $F=3.07$ ,  $p=0.0483$ ). The goal of creating a new venture is scored by the three groups with similar levels of statistical significance. Creators scored a 5.31, Operators scored a 5.03, and Inheritors scored a 4.10 ( $F=3.67$ ,  $p=0.0269$ ). The goal of "not losing my investment money" is scored highest by the Operators, 5.55, next by the Creators, 4.82, and lowest by the Inheritors, 4.70 ( $F=3.99$ ,  $p=0.0198$ ). This finding is consistent with the hypothesized financial orientation of the Operators, but surprisingly, the Inheritors who run larger, presumably more valuable businesses, are least concerned with protecting their investments. Perhaps this is so because ownership is spread throughout the family and their personal investments tend to be on paper rather than in the cash investments necessary to initiate a new venture, such as is usually made by the Creators and Operators.

Personal goals also show strong distinctions among the groups. The goal of "building something for my family" is scored 5.71 by Inheritors, 5.45 by Operators, and 5.05 by Creators ( $F=1.87$ ,  $p=.1559$ ). Though statistically not significant, this ranking seems to reflect the culture of the Inheritor's family, which has already passed along wealth and power to a second generation. The Operators' increased value on this goal as compared to the Creators is likely

a reflection of the Operators' greater financial orientation. The goal of "gaining respect and recognition from others" also shows significant differences among the three groups. Creators score this a 4.90, Inheritors a 4.60, and Operators a 4.26 ( $F=3.41$ ,  $p=.0349$ ). It is likely that these differences are the result of the Operators being more oriented to the financial rewards, while the Creators are more oriented to the creation of a new product or service. One can speculate that the Inheritors probably see respect and recognition as being engendered by financial attainments and social status, but that conclusion awaits a larger sample study.

The goal of "living how and where I like" is scored highest by the Inheritors at 5.95, 5.18 by the Operators, and 5.05 by the Creators ( $F=2.52$ ,  $p=.0829$ ), perhaps reflecting that the Inheritors' choice to enter their family business was based significantly upon issues of potential lifestyle. Given their highest average income, it certainly appears that the pull of a more lavish lifestyle is strongest on the Inheritors group.

"Utilizing my skills and abilities" is a goal that scored highest with the Creators, 6.09, and similarly with the Inheritors, 5.65, and Operators, 5.66 ( $F=0.68$ ,  $p=.5056$ ). This result from the Creators is directionally consistent with what would be expected from someone who holds a personal vision for the creation of a new product or service. Finally, on the goal of "contributing to society," there appears to be no statistically significant difference among the three groups. Creators score this a 4.60, Operators score it a 4.35, and Inheritors score it a 4.25 ( $F=.68$ ,  $p=.5056$ ). All three groups see the rewards of entrepreneurship in personal terms, not societal terms.

Table 6: Goals for Business Initiation for Three Types of Business Owners

Goal	Creators (n=114)	Inheritors (n=22)	Operators (n=92)	F	p
Money Goal: Earning lots of money	5.11	5.84	5.12	1.90	.1523
Job Goal: Replacing my current job	4.40 a*	2.25 b	3.75 c	8.64	.0002
Product Creation Goal: Inventing new product/service	3.60 a	2.55 b	3.06 c	3.07	.0483
Business Creation Goal: Creating a new venture	5.31 a	4.10 b	5.03 a	3.67	.0269
Not losing my investment money	4.82 a	4.70 a	5.55 b	3.99	.0198
Building something for my family	5.05	5.71	5.45	1.87	.1559
Gaining respect and recognition from others	4.90 a	4.60 a	4.26 b	3.41	.0349
Living how and where I like	5.05	5.95	5.18	2.52	.0829
Utilizing my Skills and Abilities	6.09 a	5.65 b	5.66 b	2.99	.0523
Contribution to Society	4.60	4.25	4.35	0.68	.5056

\* The same superscript implies that two means are statistically the same while different superscript means statistically significant difference between the two at the 5% level.



To summarize the results in Table 6, one can see a pattern of consistent differences among the three groups. Creators, driven by the vision of developing a new product or service, score highest on the product and business creation goals, and highest on the goals of "gaining respect and recognition from others" and "utilizing my skills and abilities." Operators, consistent with their financial orientation, score highest on the goal of protecting their investments and score strongly on the goal of "building something for my family."

Inheritors are clearly the furthest apart from the other two groups. Their money goal is the highest, their creation related goals are scored the lowest, and they scored lowest (albeit not by much) on the goals of "utilizing my skills and abilities" and "contributing to society."

Table 7 shows the scores the three groups compiled on various attitudinal questions and a test of objective business knowledge. To measure their assessment of the risk associated with small business, they were asked how much they agreed with the statement, "The risk of failure for small business is low." Since a score of less than 3 on the seven point Likert Scale represents disagreement, the Creators disagree with this statement most strongly, rating it a 1.85. Inheritors score it a 2.43 and Operators score it a 2.59 ( $F=4.41$ ,  $p=.0133$ ). Clearly, Creators seem to have an enthusiasm that is nearly blind to the realities of business risk.

As part of the research, a 19 item test of general business knowledge was administered to each respondent. The items were compiled from core curriculum material for undergraduate business majors at a large college. On that measure, Creators score 13.54 and Operators score a nearly identical 13.36, while Inheritors score 11.91 ( $F=2.21$ ,  $p=.1126$ ). It should be reiterated that Inheritors are approximately the same age, with the same mean education level as the other two groups. The respondents were also asked to subjectively rate their level of business knowledge on a seven point Likert Scale. On this measure, the Inheritors score higher, though not statistically significant at 5.55, than the other two groups, while Creators score a 5.09 and Operators score a 5.02 ( $F=1.29$ ,  $p=.2772$ ). Therefore, while the Inheritors seem to be lower in actual general business knowledge, they rate themselves somewhat higher than members of the other groups rate themselves. If true knowledge is knowing what one doesn't know, then the Inheritors group is in a dangerous position. Any conclusive difference among the groups in the area of business knowledge may require additional future research.

Regarding the growth plans for their businesses, the three groups do not score differently as a statistical matter, but the direction of the differences is suggestive of a pattern. The Creators are the most negative to the statement, "I do not intend to make my business bigger," which is consistent with entrepreneurs gripped by a vision of creating a venture as seen in Table 6. Creators rated this statement a 2.71, while Operators rated it a 2.62, and Inheritors, already owning the largest businesses of the three groups, rated it the highest at 3.14 ( $F=0.65$ ,  $p=.5234$ ).

In response to the statement, "I consider myself a true entrepreneur," Creators, who score the highest at 5.37, demonstrated that they accept Schumpeter's definition that entrepreneurs are innovators. Operators and Inheritors scored 4.86 and 4.85 respectively, showing that the Inheritors' vision of themselves may be at variance with reality.

Finally, in a measure of their level of satisfaction, the respondents rated the statement, "I am very happy with my current business." Here the Inheritors at 5.57 and the Creators at 5.47, are somewhat above the Operators at 5.22 ( $F=1.21$ ,  $p=.3000$ ), though not statistically different. In general, it would seem that the overall level of work-related satisfaction among these groups is high.

Variable/Statement	Creators (n=114)	Inheritors (n=22)	Operators (n=92)	F	p
Risk Ignorant "Risk of failure in small business is low"	1.85 a*	2.43 b	2.59 b	4.41	.0133
Objective Measure of Knowledge (# correct out of 19)	13.54	11.91	13.36	2.21	.1126
Subjective Measure of Knowledge	5.09	5.55	5.02	1.29	.2772
Growth Objective (Inverse) "I do not intend to make my business bigger"	2.71	3.14	2.62	0.65	.5234
Entrepreneurial "I consider myself a true entrepreneur"	5.37 a	4.86 b	4.85 b	2.91	.0568
Satisfaction "I am very happy with my current business"	5.47	5.57	5.22	1.21	.3000

\* The same superscript implies that two means are statistically the same while different superscript means statistically significant difference between the two at the 5% level.

Again, Table 7 shows strong differences among the three groups. Creators are the most growth oriented, the least risk mindful, and the most likely to consider themselves "true entrepreneurs." Inheritors are the least growth oriented, but the most likely to rate themselves as knowledgeable when, in fact, their level of business knowledge seems lowest of the three groups. Operators are the most cognizant of the risks of business, and are rather strongly growth oriented, but they are the least satisfied of the three groups.

Since there are significant differences in the mean size and length of existence of the three groups' businesses, the question arises if these variables are, in fact, controlling the outcomes observed. An analysis performed dividing the sample into three groups of relatively equal numbers based on size of the respondent's business, showed that business size was neither a very strong, nor a consistent predictor of goals and attitudes. A correlation analysis performed on the variables of objective and subjective measures of knowledge, years in business, and business size measured by employment and revenue, showed mostly very low correlations. The strongest correlation was between years in business and full-time employment,  $r=.321$ ,  $p=.0001$ .

## CONCLUSIONS

This study is an exploratory test of differences between three types of entrepreneurs and small business owners based upon the origins of their enterprises. Seven alternatives of new venture initiation was used and found to capture all the responses of the 231 business owners in the sample. The seven groups were aggregated into three groups: Creators, Inheritors, and Operators, and these groups were compared on measures of motivation at the time of new venture initiation, demographic measures, and current attitudes. The respondents were also given a 19 item test of general business knowledge and characteristics of their businesses were recorded.

The results support the three group categorization does lead to important discriminating findings among the groups, although many of the hypotheses, especially regarding the Operator category, are not substantiated. In addition to not being different from the other groups regarding the specific hypotheses, Operators report the lowest level of satisfaction. The hypotheses regarding Creators are substantiated except that they are as financially motivated as the Operators and not significantly more satisfied than the other two groups. Inheritors are clearly different in motivation, firm characteristics, and goals. Contrary to the hypotheses, however, they are more growth oriented, not less, than the others and are no less oriented towards contributing to society. Also, on the objective knowledge test they score the lowest, but rate themselves the highest on the subjective knowledge.

## RESEARCH IMPLICATIONS

Future research needs to focus on testing the existence of these types through longitudinal studies to see if individuals move from one group to another and for what reasons. Larger sample studies that are more representative of the general business population would be useful to confirm these findings and to explore whether there are three groups as the model of paths into business proposed here. Most importantly, having established here that there are distinct groups of entrepreneurs that can be identified based upon the origin of their firms, future research in the field of entrepreneurship should explore these constructs. Studies should be cognizant of which of these groups are, in fact, being examined.

## POLICY IMPLICATIONS

Governments at all levels invest heavily in the fostering of business development and entrepreneurship. This study demonstrates that, based on a simple categorization of paths followed to business initiation, that at least three distinct groups exist. It also shows that the growth potential and potential returns to the economy are significantly different for each of the three groups. Creators, being closest to the classic definition of entrepreneurs, are interested in developing new products and services, and are highly growth oriented. It would seem that they are most likely to generate growth and for that growth to be focused around new products and services. Operators are more conservative, less growth oriented, and are less

likely to create truly new ventures. Inheritors are the least growth oriented, least knowledgeable about business (but think they know the most), and the most oriented to the financial rewards they can receive. It would seem that Inheritors would represent the lowest potential return for government expenditures aimed at creating economic growth.

Economic policy aimed at minimizing contraction may be interested in promoting the activities of Inheritors and Operators. Policy aimed at producing new jobs, new products, new services, and enhancing the competitive advantage of an economy, would be best accomplished by fostering the activities of Creators.

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[Editors' Note: Appendix omitted due to space limitations.]

# THE USE OF FORMAL BUSINESS PLANNING BY NONPROFIT ENTREPRENEURS IN THE DEVELOPMENT OF THE NEW NONPROFIT VENTURE

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## ABSTRACT

*Entrepreneurship is defined as "the creation and management of new businesses and the characteristics and special problems of entrepreneurs" (Gartner, 1990). Despite Gartner's identification of "special problems," a study conducted by Miller and Simmons (1992) suggested that the differences between founding and non-founding nonprofit executives are very comparable to the differences found among profit oriented entrepreneurs and managers.*

*There has been very little research conducted on the activities of entrepreneurs in the nonprofit sector. The research undertaken in this study will help to provide data that can be utilized in support of future research contrasting the activities of profit oriented and nonprofit entrepreneurs in the development of new business ventures. To what extent do nonprofit entrepreneurs make use of formal business planning methods in the development of nonprofit entrepreneurial ventures? This study considered the extent of formal business planning in light of the nonprofit entrepreneurs background, education and experience.*

*A thirty-six question survey of one-hundred (100) nonprofit entrepreneurs was conducted to determine the extent of formal business planning methods employed prior to initiation of the new nonprofit venture. The survey was pilot tested to establish reliability and validity. The dependent variable considered in the study is the level and extent of formal business planning undertaken including whether formal business planning was undertaken and who conducted the planning process. Independent variables include previous business experience, management background, level of education achieved and educational background (i.e., area of interest).*

*The analysis of the data suggested that for the nonprofit entrepreneur, formal business planning is not an important factor in the development of the new nonprofit venture. Nonprofit entrepreneurs, regardless of background, seemed to put little emphasis on formal planning methods to establish the need and market for the nonprofit venture. These individuals seem to rely instead on informal discussions with potential clients, professionals in the field, input from volunteer boards and personal perceptions or feelings. This was indicated by the results of the chi-square analysis of formal planning by education and experience.*

## INTRODUCTION

**There is little written on the significance of nonprofit (non-governmental) organizations and their impact on the economy. Newman and Wallender (1978) suggest that the range of business possibilities and management processes in the nonprofit sector are similar to for**

profits. Entrepreneurship is defined as "the creation and management of new businesses and the characteristics and special problems of entrepreneurs (Gartner, 1990)." Despite Gartner's identification of "special problems," a study conducted by Miller and Simmons (1992) suggested that the differences between founding and non-founding nonprofit executives are very comparable to the differences found among profit oriented entrepreneurs and managers. The idea of the entrepreneur as a risk-taking individual seeking a track to personal wealth does is not considered to be an integrative part of public sector or nonprofit endeavors. Although the idea of the "public entrepreneur" may seem a contradiction in terms, entrepreneurs and entrepreneurial activities in the profit oriented and nonprofit sectors can and must possess similar characteristics to assure success (Ramamurti, 1986).

Vesper (1990) identifies five factors dictating the entrepreneurial needs in undertaking new ventures. These include technical knowledge of the area of business; a concept or idea of an unmet need; resource availability, including start-up capital; personal contacts that will support the new venture; and demand for the product/service translating into "orders." Vesper suggests that these factors will influence the type of venture undertaken by the entrepreneur (Vesper, 1990).

Schollhammer and Kuriloff (1979) suggest that new venture start-up represents a rational step-by-step procedure by which the entrepreneur systematically plans and enters the market. Long and Ohtani (1986) provide a sequence of events that generally occur in the creation of a new venture. This general process can be adapted more easily to a broad range of venture possibilities. Studies by a variety of researchers (Phillips & Kirchoff, 1989; Reynolds, 1986; Bruno, Leidecker, & Harder, 1986) indicate that the success or failure among entrepreneurial business ventures is dependent, in part, on the type of business chosen. Lawler (1963) and Stuart & Abetti (1988) indicate a high correlation between success and the previous experience and/or education of the entrepreneur.

The question answered through this research is: To what extent do nonprofit entrepreneurs make use of formal business planning methods in the development of nonprofit entrepreneurial ventures? This study will consider the extent of formal business planning in light of the nonprofit entrepreneurs background, education and experience.

## PROBLEM STATEMENT

Although a number of significant studies have been undertaken to establish the characteristics of entrepreneurs and the processes utilized in the development of profit making ventures, no significant studies have been identified to describe the development of nonprofit enterprises. This study will provide new information and conclusions regarding the formal planning activities of the nonprofit entrepreneur in the development of new nonprofit ventures.

## VARIABLES

The dependent variable considered in this study is the level and extent of formal business planning undertaken including whether formal business planning was undertaken and who conducted the planning process. Independent variables include previous business experience, management background, level of education achieved and educational background (i.e., area of interest).

## HYPOTHESIS

This research was expected to reveal differences in the education and experience of entrepreneurs in the nonprofit sector and the effect of those differences on business planning. The hypothesis for the study is stated below:

*The nonprofit entrepreneur's educational background and experience in business operations will influence the extent of business planning undertaken prior to new venture start-up.*

## METHODOLOGY

To accomplish the goal of this study, a cross-sectional survey methodology was employed to obtain information from a simple random sample of one-hundred (100) founders of nonprofit organizations in the State of Minnesota. Data for this study was collected utilizing a self administered questionnaire. Although previously developed surveys were reviewed, it was determined that a questionnaire needed to be custom designed for the research. The questionnaire was pre-tested utilizing a separate sample of ten (10) nonprofit entrepreneurs to estimate reliability and validity.

The questionnaire contained thirty-six (36) questions with questions covering founder background prior to initiating the development of the nonprofit organization; planning methods used in organizational development; financing of the new organization; and initial operations. Personal characteristics questions were asked to obtain data on the personalities and habits of the subjects. Questions were asked about the previous work experience of the subjects as it related to preparation for business ownership or the development of skills to operate a new business venture, as well as the educational background and preparation for business operations. Finally, questions were posed to determine the actual planning, financing and operational processes employed by the individual entrepreneurs to develop and initiate the new business venture.

Participants (N=100) for the study were selected through a simple random selection process from the membership of the Minnesota Council of Nonprofits (MCN). MCN is an association of nonprofit organizations formed in 1987 to serve as an advocate for nonprofits in the State of Minnesota sharing research, information and services with and for nonprofits, as well as acting as a vehicle for organized political action for nonprofit organizations.



The questionnaire was distributed via mail. All survey instruments were coded to allow for tracking of surveys returned and follow-up to improve the survey return rate. Returned surveys were reviewed for completeness. Background information was also reviewed to assure that the respondent is the founder of the organization. Non-compliant respondents were excluded from the sample prior to the data analysis. Chi-Square Analysis was conducted for the hypothesis to determine if the association between the independent and dependent variables was statistically significant at the .05 level.

### LIMITATIONS

The limitations of this study related generally to the methodology chosen for data collection. These limitations include the fact that although respondents were limited to organizations that are not more than five years old, responses were self-reported and subject to the limitations of bias including selectivity, halo effect and selective recollection. Second, the sample was limited to nonprofit organizations in the State of Minnesota and were not necessarily reflective of the experiences of nonprofit entrepreneurs in other parts of the United States. Third, the study did not seek to provide comparisons between nonprofit entrepreneurs and their profit oriented counterparts. Alternatively, it sought to provide baseline data for future comparisons with profit oriented ventures. Finally, the study did not attempt to evaluate the extent or effectiveness of business planning methods and processes employed in the start-up of the new nonprofit venture. The measurement of success of methods and processes employed was outside the purview of this study.

### FINDINGS

The results found in the following Tables 1-4 indicate that there is no relationship between the variables of level of education, degree area, experience in the field of endeavor and management experience in relation to the degree of formal business planning at the .05 level of significance. Although the survey does not yield a reason why this occurs, clearly nonprofit entrepreneurs do not employ formal planning methods in the development of new ventures.

Survey questions 12 and 18 were considered and analyzed via chi-square testing as displayed in Table 1 above. Question 12 asked respondents to indicate the highest level of education achieved prior to start-up of the new nonprofit venture. Question 18 asked whether a formal business plan was prepared prior to organizational start-up. The chi-square test results indicate that nonprofit entrepreneurs are not more inclined to utilize formal planning methods in the development of the new nonprofit venture. Although frequencies suggest that individuals possessing a four year college degree might be more likely to employ formal planning methods, this did not significantly impact the indicated non-use of formal planning in development of the new nonprofit.

Table 1: Education by Formal Business Planning						
Formal Business Planning	High School	Some College	2 Year Degree	4 Year Degree	Graduate Degree	Row Total
Yes	1.98 2	3.29 3	1.98 3	11.52 12	8.23 7	27
No	4.02 4	6.71 7	4.02 3	23.48 23	16.77 18	55
Column Total	6	10	6	35	25	82
Chi-Square Value = 1.12642; DF = 4; Significance = .05 Minimum Expected Frequency = 9.488 Chi-Square Value (1.12642) is not greater than Expected Frequency (9.488) Accept Null: Education does not impact the extent of formal business planning						

The chi-square analysis displayed in Table 2 used information obtained through survey questions 13 and 18. Question 13 asked respondents to identify their degree area while, as stated earlier, Question 18 asks about the extent of formal business planning. Although frequencies indicate that social service graduates are more inclined to use formal planning methods, overall indications are that no degree area signified a trend towards utilization of formal planning methods.

Table 2: Degree Area by Formal Business Planning						
Formal Business Planning	General Education	Business	Social Services	Technical	Other	Row Total
Yes	6.83 4	5.20 5	9.43 11	2.60 3	2.93 4	27
No	14.17 17	10.80 11	19.57 18	5.40 5	6.07 5	56
Column Total	21	16	29	8	9	83
Chi-Square Value = 2.80708; DF = 4; Significance = .05 Minimum Expected Frequency = 9.488 Chi-Square Value (2.80708) is not greater than Expected Frequency (9.488) Accept Null: Degree Area does not impact extent of formal business planning						

The analysis presented in Table 3 utilized survey questions 2 and 18. Question 2 asked survey respondents to indicate the years of experience that the individual had in the field prior to initiating the nonprofit venture. Question 18 was described previously for Tables 1 and 2. As per the data analysis, despite the entrepreneur's level of experience in the field, no significant relationship exists between experience and a tendency to use formal planning methods. Frequency data suggests that individuals with less experience in the field are more inclined not to use formal planning than their more experienced counterparts, although

individuals with ten or more years of experience also appear strongly biased against formal planning prior to initiating the new nonprofit venture.

Table 3: Experience in Field by Formal Business Planning						
Formal Business Planning	Less Than One Year	1 - 3 Years	4 - 6 Years	7 - 10 Years	Over 10 Years	Row Total
Yes	8.78 9	5.53 3	4.23 6	1.95 2	6.51 7	27
No	18.22 18	11.47 14	8.77 7	4.05 4	13.49 13	56
Column Total	27	17	13	6	20	83
Chi-Square Value = 2.87816; DF = 4; Significance = .05 Minimum Expected Frequency = 9.488 Chi-Square Value (2.87816) is not greater than Expected Frequency (9.488) Accept Null: Years of Experience does not impact extent of formal business planning						

Analysis for Table 4 was accomplished utilizing information from questions 3 and 18 in the survey. Question 3 inquired as to the years of experience in management possessed by the nonprofit entrepreneur prior to initiating the new nonprofit venture. Question 18 was described previously. Although not statistically significant, it appears that only management experience may have some limited impact on the degree of formal business planning for entrepreneurs with limited management experience or those who have extensive experience as managers prior to initiating the new nonprofit venture.

Table 4: Experience in Management by Formal Business Planning						
Formal Business Planning	Less Than One Year	1 - 3 Years	4 - 6 Years	7 - 10 Years	Over 10 Years	Row Total
Yes	8.78 6	3.58 3	2.60 6	5.20 6	6.83 6	27
No	18.22 21	7.42 8	5.40 2	10.80 10	14.17 15	56
Column Total	27	11	8	16	21	83
Chi-Square Value = 8.36241; DF = 4; Significance = .05 Minimum Expected Frequency = 9.488 Chi-Square Value (8.36241) is not greater than Expected Frequency (9.488) Accept Null: Years of Experience in Management does not impact extent of formal business planning						

## CONCLUSIONS

Based on the analysis of the data, nonprofit entrepreneurs, regardless of background, seemed to put little emphasis on formal planning methods to establish the need and market for the nonprofit venture. These individuals seem to rely instead on informal discussions with potential clients, professionals in the field, input from volunteer boards and personal perceptions or feelings. This was indicated by the results of the chi-square analysis of formal planning by education and experience.

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# **CRITICAL BUSINESS KNOWLEDGE AND COMPETENCIES: DIAGNOSING THROUGH THE BUSINESS LIFE-CYCLE.**

**Mark R. Young, Winona State University**

## **ABSTRACT**

*Many public and private sector organizations seek to provide business assistance to small businesses. In an effort to better understand which types of assistance are beneficial and when they are needed this paper empirically investigates the classification of women-owned small businesses in the business life-cycle, the priorities and problems they face, and their usage and satisfaction with assistance providers. Support was found for the relationship between the dominate problems a firm faces and the stages of growth a firm undergoes. As a firm gains the knowledge and/or resources to successfully solve the current problems it evolves into the next life-cycle stage and faces another set of dominate issues.*

## **INTRODUCTION**

Women-owned businesses play an increasingly important role in the economic development of our society. To encourage and develop these businesses both public and private sector organizations have created and provide business assistance such as: training, literature, funding, consulting, etc. However, there is little understanding of which types of assistance are beneficial and when a particular type of assistance should be provided. Categorizing the problems and growth patterns of small businesses in a systematic way should improve the efficiency and effectiveness of the delivery of these support services. In addition, small business owners would be able to assess current challenges and anticipate key requirements as their business grows.

In response, this study empirically investigates the classification of women-owned small businesses in the business life-cycle, the priorities and problems they face, and their usage and satisfaction with assistance providers.

Haire (1959) was among the first to propose that the development of a business follows some uniform pattern. The concept of modeling business life-cycle stages is prevalent in management literature, Churchill and Lewis (1983) and Smith, Mitchell and Summer (1985) provide good reviews and discussion of the concept. This study utilizes a four stage life-cycle model (Kazanjan, 1988) that is consistent with most models found in the literature and explicitly describes stages as linked to dominant problems, see figure 1.

Cowan (1988) reviews and critic the concept and classification of organizational problems. Cowan notes that there has been little integration of empirical results around conceptually derived problem categories. Much of the research in problem classification has

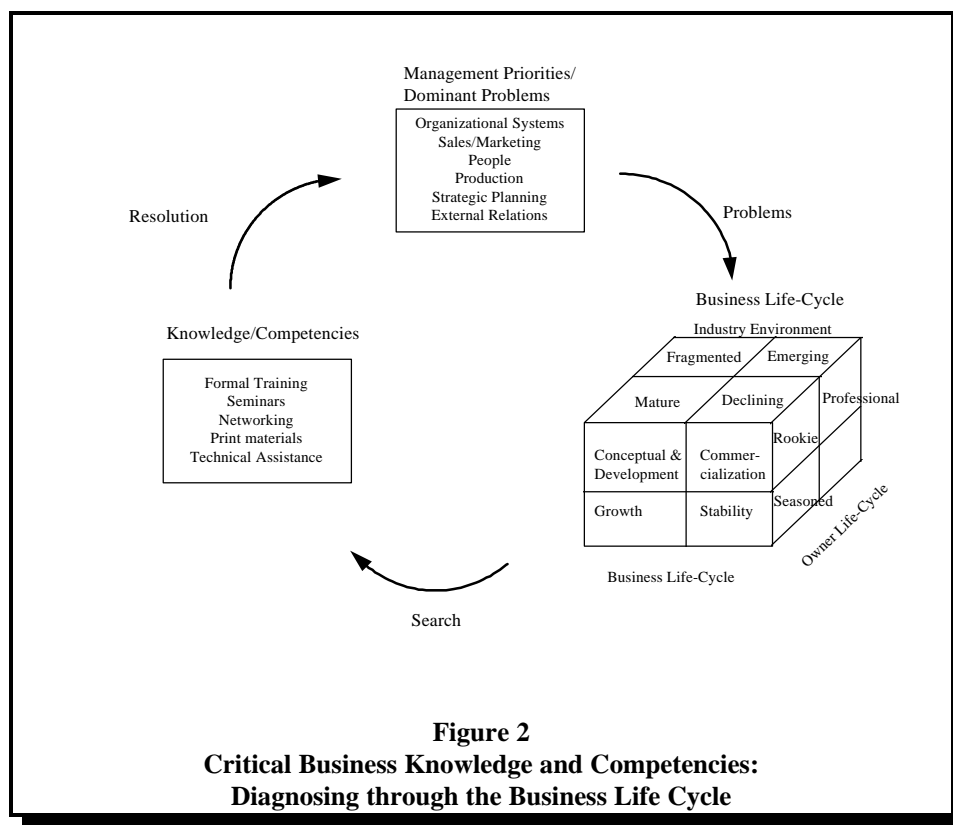
been conducted with executives in larger organizations; and therefore, may not be generalizable to women small business owners. To avoid some of the limitations of predefined problem categories this study will empirically derive a suitable problem classification.

Stage 1	Stage 2	Stage 3	Stage 4
Conception & Development	Commercialization	Growth	Stability
Resource acquisition & technology development	Production related start-up	Sales/market share growth, organization issues	Profits, controls, growth

Industry structure may have a strong influence on the nature and timing of problems a firm faces. Industries differ most strongly in their fundamental strategic implications along a number of key dimensions, Porter (1980) provides a framework for classifying industries as: Emerging, Fragmented, Mature or Declining.

<i>Emerging:</i>	The industry is newly formed or reformed by technological innovations, shifts in relative cost relationships, emergence of new consumer needs, or other economical and sociological changes that elevate a new product or service to the level of a potentially viable business opportunity.
<i>Fragmented:</i>	No firm in the industry has a significant market share that can strongly influence the industry outcome. There are a large number of small and medium-sized companies, many of them privately held. Low barriers to entry, little economies of scale and diverse market needs characterize the industry.
<i>Mature:</i>	The period of rapid industry growth has slowed to modest growth causing more competition for market share, greater emphasis on cost and service, overcapacity, and sophisticated buyers. New products and applications are harder to come by and manufacturing, marketing, distribution, and selling methods are often undergoing change.
<i>Declining:</i>	Unit sales in the industry have declined for a period of time and are not explained by business cycles or short-term discontinuities. Margins are shrinking and there are few competitors.

Little research has been conducted in the classification of business-owners and their stages of development. Therefore, an empirically developed classification system based on experience will be utilized. The major business assistance providers in the state (Minnesota) in which the study was conducted were identified and included for evaluation. Figure 2 illustrates the proposed model for linking management priorities and problems to the growth patterns of a business and to the required knowledge and/or competencies.



## METHODS

The population for this study was defined as women small business owners (50% or greater interest in the company) operating in south eastern Minnesota. Funding resources dictated the geographical boundaries of the sample. After an exhaustive search and a preliminary study it was concluded that no comprehensive listing of women business owners exists for the described population. Therefore, it was decided to purchase the listings of women business owners from American Business Information, Inc. It is recognized the listing is not the complete population, however, it does provide a representative sample of all but the smallest startup companies. A five page mail survey was sent to 3000 randomly selected women business owners on the list. After a two week response time 297 (10% response) usable surveys were returned. A follow up survey was sent to a sample (1000) of the nonrespondents which provided an additional 195 usable surveys. As a final check on nonresponse a phone survey was conducted with 25 of the nonrespondents. There was no statistically significant difference between the first and second wave of mail respondents nor the phone respondents. The results presented in this report are based on a total response of 492 respondents.

The mail questionnaire was comprised of five major sections: 1) Service Provider Evaluation, 2) Business Life-Cycle, 3) Industry Life-Cycle, 4) Problem Priorities, and 5)

**Owner and Business Profile.** Evaluations of service providers and prioritizing problems were both done utilizing 7 point scales which helps facilitates the use of multivariate statistical techniques in the analyses.

Short scenarios were developed for each of the four stages of the business life-cycle. Respondents simply checked the one that most closely matched their firm. The same self-categorization method was also used to identify the industry stage.

Eighteen problems were presented and the respondents indicated on a 1 to 7 scale the degree to which the problem was currently the focus of their attention. The final section of the questionnaire was comprised of simple fill in the blank or check the box type questions describing themselves and their companies.

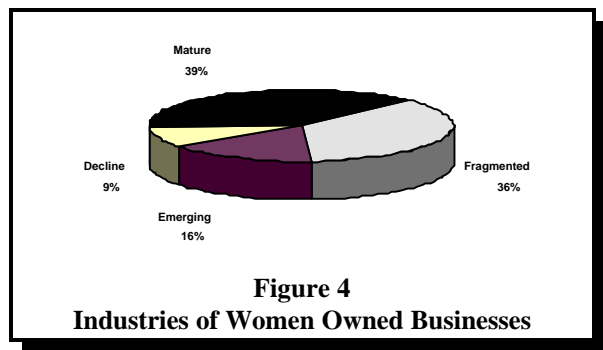
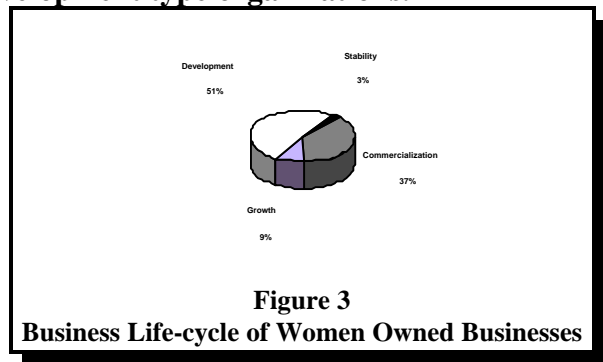
## ANALYSIS AND RESULTS

The typical respondent could be described as well educated (77% some post high school education), operating a small (fewer than 10 employees, 89%) service business (63%), for more than 7 years (60%) and is a member of the chamber of commerce (54%). It is interesting to note that only 8 percent belong to economic development type organizations.

Figure 3 presents the business life-cycle stages of the respondents. 51 percent of the women owned businesses are in the development stage while an additional 37 percent are in the commercialization stage. The measure of business life-cycle was a self-categorization, indicated by selecting one of four descriptions that most closely matched their business. The validity of the self-categorization was assessed by examining three external variables (size, age of firm, growth) with the four different stages. Table 1 presents the means for each variable within each stage. As expected, the means of age (years) and size (number of employees) increase with each stage, suggesting a movement of firms through stages. Growth (1992 sales/1991 sales) was not statistically different among the four stages, however, the pattern of the means through the stages is reasonable. These findings offer support for the validity of the stage model.

Industry stages are provided in figure 4 and indicate that 38 percent are in mature industries and 36 percent describe their industries as fragmented. Validity of industry stages was not examined.

In general, the respondents have not utilized the various business assistance available nor do they rate the providers they





have used as "very useful". Only two of the thirteen providers were used by more than ten percent of the respondents. Universities and technical colleges were used by 15 and 27 percent of the respondents respectively. Of the women who have used the services only one third rate the assistance at the higher end of the useful scale.

	Stage 1 Conception	Stage 2 Commercialization	Stage 3 Growth	Stage 4 Stability	F	p
Size	1.07	1.08	1.66	1.50	22.2	.00
Age of Firm	3.6	3.8	4.0	4.7	3.7	.01
Growth	.13	.90	.24	.06	.45	.72

Personal savings and commercial banks are the two dominant funding resources used by the women business owners in this study. It is interesting to note that over one-third of the respondents either "have not used " or have found commercial banks "not useful". Forty five percent of the respondents have utilized family or friends to financially assist their businesses. Other loan and/or grant programs remain relatively unused (less than 4%).

Finance (44%) and marketing (15%) were indicated as the two areas where they could use assistance most at the current time. It should be recognized the higher mentions of finance are probably due the emphasis and order bias created in the questions preceding the open-ended "assistance now" question.

Attaining profitability or market share is the most frequently mentioned (43%) "major issue" facing the sampled women owned small businesses. Closely related to attaining profitability was the priority of cost control (38%). Other problems rated as major issues were: Product support/customer service (36%), meeting sales targets (27%), and establishing the firms position in its product/market segments (25%). These three issues are all directly related to attaining market share their number one issue. When asked to describe their most serious problem currently facing their company the leading response was marketing (21%).

Firms were grouped by the stage of the business life-cycle and also by industry stage to see if significant differences existed on the ratings of the 18 problems. The analysis (multivariate analysis of variance) resulted in an overall significant finding for the business life-cycle ( $F_{54,957} = 1.84, p < .000$ ) suggesting there are significant differences in problem ratings across stages. Table 2 presents the means of the 18 problems across the four business life-cycle stages. The MANOVA results did not support significant differences across industry stages ( $F_{54,828} = 1.07, p < .352$ ).

Principle components factor analysis with varimax rotation was performed to better reveal the factor structure among the 18 problems. Four interpretable factors, presented in table 3, resulted and accounted for 52 percent of the cumulative variance.

	<b>Development Mean</b>	<b>Commercialization Mean</b>	<b>Growth Mean</b>	<b>Stability Mean</b>
Developing New Products/technology	2.21	2.27	3.03	2.20
Securing Financing	3.32	3.25	2.89	4.00
Acquiring Outside Advisors/Board	1.55	2.01	1.43	3.10
Product support/ customer service	4.63	4.00	4.50	2.50
Attracting capable personnel	4.18	4.00	5.00	4.00
Adequate facilities	3.11	3.27	3.57	4.60
Developing network of vendors	3.06	2.98	2.89	2.50
Production volumes to meet demand	2.64	3.12	3.74	1.60
Meet sales targets	4.02	3.67	4.09	4.00
Management depth & talent	3.35	3.07	4.08	3.70
Cost control	4.73	4.29	4.73	4.30
Organizational roles, policies	3.03	2.68	3.91	4.30
Management information systems	2.62	2.66	3.17	3.10
Profitability or market share	4.86	4.85	4.69	4.60
Penetrating new geographical areas	3.15	3.25	3.23	4.90
Administrative redtape	3.45	3.20	3.68	2.80
Financial systems & controls	3.09	3.07	3.67	2.20
Establishing firms position in market	3.85	4.00	3.68	3.70

	<b>Management</b>	<b>Marketing Sales</b>	<b>Information Systems</b>	<b>External Relations</b>
Management Depth/Talent	.72			
Cost control	.71			
Product support /service	.69			
Organizational policies & roles	.58			
Capable personnel	.50			
Profitability/ Market share		.75		
Position in market segments		.74		
Sales targets		.61		
Penetrating new territories		.57		
New products		.35		
Redtape			.76	
Information System			.64	
Cost control			.63	
Outside advisor/board				.71
Securing financial resources				.59
Facilities/space				.55
Production volume				.35

A one-way analysis of variance (ANOVA) was conducted on the factor scores and the life-cycle stages to examine different priorities among stages. Table 4 displays the results which are significant for three of the four factors.

	Development	Commercialization	Growth	Stability
Management *	.14	-.15	.49	-.22
Marketing	.10	.05	-.11	.01
Information Systems *	-.05	-.02	.41	-.01
External Relations *	-.14	.15	-.04	1.13
* Significant at $p < .10$				

To facilitate examination and interpretation of the problem factors' means across and within stages, the means have been plotted in figure 5. Eighty-eight percent of the women owned businesses were categorized in the commercialization (37%) or the development stage (51%) of the business life-cycle. It is interesting to note that the dominate factor in the development stage relates to management issues, however, management issues become of least concern in the next stage of commercialization. External relations (advise, funding, facilities, production) dominate the concerns in the commercialization stage after being of least concern in the development stage. Marketing and sales issues remain as a top priority in both early stages and again in the final stability stage.

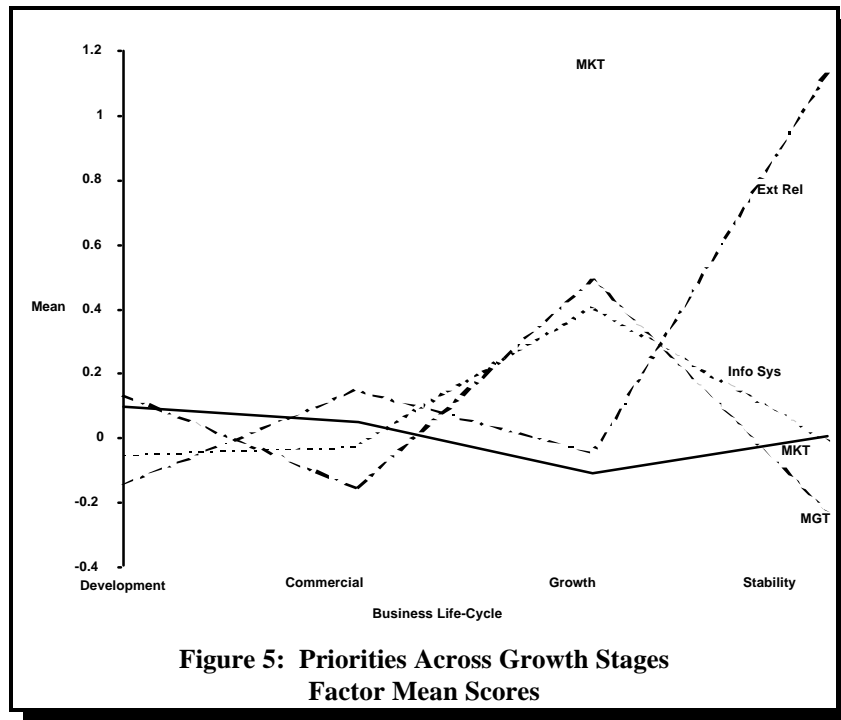
## DISCUSSION

Support was found for the relationship between the dominate problems a firm faces and the stages of growth a firm undergoes. As a firm gains the knowledge and/or resources to successfully solve the current problems it evolves into the next life-cycle stage and faces another set of dominate issues. To facilitate this organizational learning cycle external assistance can be provided. By examining the plots of dominant problem factors across stages (Figure 5) the most beneficial assistance for a given firm can be provided. Area companies could be categorized by life-cycle stage and particular assistance programs targeted at them. Targeting particular services at specific companies should improve the efficiency and effectiveness of the assistance. Targeting services would also help to inform businesses of resources that would be directly relevant. In summary, there is support for diagnosing the critical business knowledge and competencies needed for particular businesses through the use of the business life-cycle stages.

Information from this study also suggests that there is a general lack of awareness of existing business assistance and/or a confusion of where to turn for specific types of help. The end result being - not utilizing any outside help. The small percent of women involved in

economic development organizations may provide insight into the heavy reliance on personal savings as apposed to grants or alternative financial structuring of their businesses.

If assistant providers are to effectively reach out to women business owners a comprehensive listing of businesses should be developed and distributed to service providers. A newsletter providing an easy-to-follow listing of assistance and the steps necessary to obtain the assistance should be distributed on a regular basis.



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# **DIFFERENTIATING RESTAURANT STARTUPS: A CONCEPTUAL FRAMEWORK**

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## **ABSTRACT**

*Entrepreneurial research all too frequently tends to generalize conclusions across a broad number of industries. While generalities are important and necessary in research, ultimately these conclusions need to be fine tuned as they relate to a specific industry. For example, Vesper (1990) identifies five key ingredients for startup ventures. But which industry is he talking about? Is he referring to a broad range of manufacturing enterprises or perhaps retail outlets or both? The context of his book suggests that he is addressing the whole realm of industry in the startup process. Continued research in this area is critical because 53 percent of all entrepreneurial startups across all industries fail within five years (Bekey, 1988).*

## **INTRODUCTION**

Vesper's five key ingredients are important if the research uses a "shot gun" or multi-industry wide approach. But generally it is necessary to use a "rifle" or "industry specific" approach to add further credibility to this multi-industry based research. Sexton & Smilor (1986) call for industry specific research by stating, "The development of these studies should not only relate to an overall framework of individual entrepreneurship but should also be targeted to a specific population or sample instead of all venture firms, all small businesses, etc." (p. 325). This paper attempts to answer the call for industry specific research by developing a framework for researching startup and survival strategies in the restaurant industry. Because of the unique variables which make the restaurant industries operate differently from the traditional streams of entrepreneurial research, this industry needs to be studied in greater depth.

## **THE RESTAURANT INDUSTRY**

The restaurant industry is one of the most competitive industries in the world today. It can cost a half a million dollars for a restaurant just to open for business. Owners work 70 hours a week, including holidays and weekends, and still 10 percent of them fail. Although the competition is fierce and the success rate for restaurants is extremely low, restaurants keep springing up.

The fastest-growing segment of the restaurant industry is casual dining, where sales are increasing at double-digit rates. This nomenclature includes such settings as Chili's, Applebee's, and Outback Steakhouse, where the food comes with a relaxed atmosphere. The concept here is "not-so-fast food for aging boomers who may still crave a burger but now want to sit down and eat it from a plate, perhaps with a glass of wine." Nina Zagat, co-publisher of Zagat Restaurant Survey guides calls such new spots BATH restaurants -- better alternatives to home -- in that they are part of a national phenomenon of eateries designed to appeal to families where both partners work. The convenience shoppers don't weigh whether to spend food dollars at a restaurant or at a supermarket. Rather, they are shopping for meals, and they will go to whatever retailer provides the best solutions to the problem of feeding the modern, average American household. This meal-replacement segment, as it is now known, is a \$70 billion to \$80 billion market. If half that volume comes out of the supermarkets, their sales will shrink 10% (Saporito, 1995).

The restaurant industry is extremely important to the national economy. For example, according to the National Restaurant Association, in 1994 the foodservice industry sales reached some \$275 billion, accounting for 4.1 percent of Gross Domestic Product (GDP), and is growing by about 4 percent annually (National Restaurant Association, 1994). Further, more than one of every four retail outlets is an eating establishment, over 9 million people are employed in the industry, and employment is expected to reach over 12 million by 2005 (ibid.)

### STARTUP AND SURVIVAL IN THE RESTAURANT

Before discussing startup/survival variables in the restaurant industry, it would be useful to take a step back and examine the current research on startup/survival in general. Hofer (1987) identifies three areas critical to the survival of a new firm: 1. industry structure, 2. venture strategy, and 3. the behavioral characteristics of the founding entrepreneur. Hofer maintains that the new venture strategy should take advantage of the current structure of the industry as opposed to attempting to change it. Also, entrepreneurs should steer clear of ventures in industries that offer few chances of success. For example, opening a small, independently owned hamburger store on a crowded boulevard where the hamburger "giants" also have stores may be a suicide attempt unless the independent has some extraordinary characteristics which gives it a distinctive advantage or it can somehow differentiate its product.

Another important variable in the startup process is the entrepreneur's level of formal education. This variable is different from experience in that it focuses on the mechanics of entrepreneurship such as what is taught in business schools. Miller (1987) addresses this issue by stating the importance of education and stressing that business schools must be more aggressive in teaching these skills.

Because the restaurant business is such a risky type of business, banks are reluctant to lend to entrepreneurs opening eateries without ironclad guarantees. Consequently, the restaurant industry is the largest single beneficiary of Small Business Administration loan

guarantees receiving \$392.9 million in 1992. The SBA guaranteed 22,459 business loans and 1,791 restaurant loans, which was 8% of the total number of loans and 7% of the total loan amount (Oleck, 1993).

Labor and materials are the two biggest and most important expenses that restaurant businesses have in their budgets. Another challenge facing all types of restaurants is the type of menu they offer their customers. The wider the menu variety, the higher the cost is for the restaurants.

There is one absolute constant about the restaurant business whether it be a chain restaurant or an independent restaurant. That absolute constant is the need to go back to the basics. The basics in the restaurant or food service business is knowing how to control costs. Of course the necessity for them to focus on the needs of their guests is always present. The fundamentals of hospitality will always be the same: "a favorable location offering consistently appetizing food, friendly and attentive service, and an inviting, clean decor" (Main, 1991). Restaurants must focus their main emphasis on the customer's dining experience. If restaurants make their customers happy, the profits will take care of themselves. There are three distinct dimensions to a comprehensive cost-control appraisal: product, people, and property. Controlling food cost is the most difficult "hands-on" task in the restaurant industry. Payroll is by far the most flexible of the operating costs and provides the most immediate source of new cash flow when effectively managed (Martin, 1911). There are several other solutions to cost-control: staff cuts, earlier closing hours, more haggling with suppliers, and reduced market expenditures (Farrell, 1991)

The inverse to cost-cutting is to expand margins by generating a larger overall gross profit contribution by carefully merchandising certain menu items. Here, the idea is to develop a selling strategy that focuses on specific menu items: those that yield a more favorable gross profit margin. This type of selling strategy is developed through the menu: the size, layout, format, design, and style. All of these elements affect the customer's decision to choose one item over another. The trick is to construct a menu that will display those items that deliver a lower food cost or a higher gross profit contribution as to increase the bottom line of a restaurant. Several techniques can be used to do this: Price rounding, using a basic box technique, and reviewing menu item placement orders (Main, 1991).

The implementation of any restaurant-merchandising concept must be managed by appropriately setting prices. In order to do this, restaurant personnel must grasp the idea behind menu-item demand and the elasticity of that demand. That is, not only should they know how strong the demand is for a given item, but they should have an idea of how the demand for that item will change as the price changes (Burdett, Kelly and Kiefer, 1994). Menu pricing should also be considered as a method of managing revenue, because increasing prices without loss of volume is an important method of boosting profitability. Considering the restaurant industry's high fixed costs, a one percent improvement in price can yield as much as a 20-percent improvement in profits. (ibid). Another important reason restaurants must pay particular attention to price is because customers may be focusing their main attention on the quality food instead of the price and vice versa, and customers are ready to spend when they are dining out.

Typical menu-pricing schemes include a fixed markup over food cost, a markup over total cost, and pricing to meet a gross margin requirement. The importance of knowing demand in setting prices determines an effective pricing strategy and how well restaurants understand their customers' responses to change.

For a startup to be successful, key personnel within the organization must possess certain characteristics. Olson (1987) addresses this issue by stating that these employees should display the following characteristics: 1. a sense of role orientation, 2. a high tolerance for ambiguous, unstructured situations, 3. an ability to take the long view, 4. an acceptance of moderate risk, 5. both intuitive and analytical abilities, and 6. a high need for achievement.

A more general approach to startup has included the use of flow charts and models to describe the process. Webster (1976) designed a simple six stage startup process. Long and Ohtani (1986) conceived a more detailed ten stage model. Perhaps the most elaborate model is Swayne and Tucker's (1973) fifty seven step (in three stages) "roadmap" of entrepreneurial startup. While all of these models are useful, they are multi-industry in nature and none of them address the specifics of the restaurant industry. In fact, research in this area is vastly under-represented. For example, in Sexton and Smilor's (1986) review of the literature on entrepreneurship, only one study was found that exclusively dealt with the restaurant industry. This under-representation of the restaurant industry illustrates another reason why it is important to construct a framework by which we can begin to better research it. This industry is extremely important to the national economy.

#### **A CLASSIFICATION FRAMEWORK FOR STARTUP AND SURVIVAL**

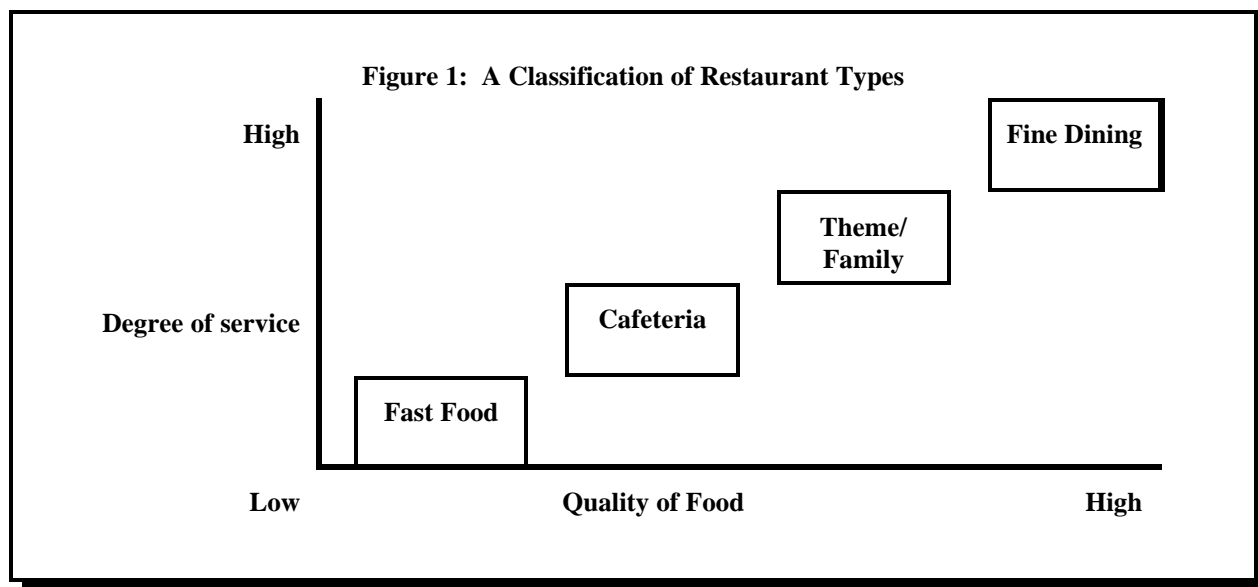
Dukas (1973) and Kahrl (1973) offer classic textbook approaches to operating in this industry. These sources are good at identifying key variables in the restaurant industry but they do not differentiate to any great degree the different types of establishments that operate in this field.

As discussed earlier, restaurants play an important role in our economy. While there are about 30,000 supermarkets and 93,000 convenience stores today, there are over 400,000 restaurants, ranging from fast food to fine dining. This range of restaurants makes it difficult to classify for research purposes. There are several ways of classifying foodservice establishments within the restaurant industry, and this distinction should be made when conducting meaningful research. The approach used here is to distinguish the operation in terms of degree of service and quality of food. The degree of service can range from a walk-up counter, (e.g., MacDonalds) to an elaborate sit-down service restaurant with a maitre d' and wine steward. The quality of the food refers to the degree of preparation needed to "manufacture" the menu item from its position in the kitchen to its appearance in front of the customer. It can include freshness, quality of ingredients and presentation and also refers to the relative cost of the item compared to other menu items. For example, a hamburger is considered lower in quality than a London Broil because the skill needed to prepare the latter is more labor intensive. Also, the cost of a flank steak (from which a London Broil is made)



is higher than the cost of ground beef used in a hamburger. Quality, as used in this example does not mean that one product is inferior to another.

The paper classifies restaurants into four groups based on the criterion discussed above. Figure 1 illustrates this classification by showing that fast food restaurants (also known as quick service restaurants) will appear in the lower left quadrant.



These restaurants can be national or regional chains, or locally owned operations. These establishments provide a minimum amount of customer service and a low quality (not necessarily inferior) product. Operations in this category include Wendy's and Hardee's. Cafeterias are differentiated next because of the increased amount of customer service offered and a higher quality menu. These establishments include Morrison's and Picadilly. The next category is theme/family (sometimes called casual dining) and contains a large number of sit down establishments with various types of food themes. The more familiar family operations include Po Folks and IHOP. Theme restaurants tend to focus more on unusual decor and tend to attract a younger clientele. Some of these establishments include Bennigan's and Hastings Place. The final category, fine dining, contains restaurants that offer the ultimate in high quality food and extensive service. This category generally includes locally owned and operated restaurants and not chains.

Obviously, this categorization is not all conclusive but it does serve as suitable starting point for the analysis of startup and survival variables in the restaurant industry. These variables are: location, management style, cost control, creativity and innovation, and capital requirements.

In the restaurant industry --as in all others-- it is possible to have the right product, but to be in the wrong location. Kahrl (1973) lists thirty three items which need to be considered before selecting a location. Some of these include: population density, potential for growth,

direction of street traffic, speed limit, access, investment cost, and competition. Even locating in the right metropolitan area should be a consideration for future operators (Birch, 1988). Out of the four classification of restaurants, location is probably most important for the fast food operator. These restaurants must be easily visible and accessible for quick entry by the customer. An establishment which is on the wrong side of the street and does not take advantage of traffic flow could be doomed for failure unless the unit is a well established chain. According to Tannenbaum, (1995) restaurant companies have begun to promote two or three themes so that consumers will still choose one of their restaurants. For example, Apple South owns the popular Applebee's and Tomato Rumba's, often in close proximity to each other. Generally the customer doesn't know that they are owned by the same franchiser, as marketers rarely advertise the linkages. Location is still a critical factor for cafeteria style restaurants, but probably not to the extent of fast food establishments. Because cafeterias are fewer in number, regular cafeteria patrons do not require the quick access that fast food patrons do. The main problem for theme/family style restaurants is that prime locations are harder to find (DeLuca, 1989). As a result, some of these restaurants such as Garfield's and TGI Friday's are working out arrangements to locate in hotels. This arrangement is especially attractive because of the lower startup costs involved. Relative to the other three classifications, location is probably the least important to fine dining operators. This type of clientele is usually willing to drive the distance as part of the "dining experience." There are examples of favorite restaurants which are located in the "middle of no where," yet are no less appealing because of the commute.

Hands-on management typically refers to the degree that the manager is involved in the day-to-day operations of the establishment. Restaurants are unique because, they require a more hands-on manager than in many other industries. The reason is that the functions of production and consumption of the product are carried out under one roof. This is rare in most other industries and as a result, greater levels of hierarchy are allowed which means the general manager does not have to get as involved in the production process. But in a restaurant, there are few levels of hierarchy which means the manager must be involved in all phases of the operation. Cole (1988) addresses this issue by citing a manager who admitted the reason his restaurant concept failed when expanding to multiple locations was because he did not stay involved in the day-to-day activities of the business.

Fast Food, Cafeteria, and Theme/Family Restaurants use hands-on managers who are actively involved in the production process. Many of these restaurants are run by chains and, as a result, have built-in controls written within their standard operating procedures (SOPs). This has the effect of letting unit managers delegate much of the control to assistant managers. Relative to the other three categories, fine dining establishments require the most aggressive hands-on management policies, because these restaurants are usually not part of a chain, but operate as independents. SOPs are less utilized and the managers are also frequently the owners. With more of a financial stake in the restaurant, these manager/owners are less willing to delegate responsibility at the risk of losing control of the operation.

Cost Control is closely related to hands-on management since the manager who is more active in the production process is consequently more involved in cost control. Cost control

is critical to the success of fast food operators since their revenues are based on smaller average checks compared to the other three categories of restaurants. Strict portion control and minimum wage labor have been traditional routes this phase of the industry has taken to build up profit margins. Cost control is still important for cafeterias, but to a lesser extent because of the higher average checks which are obtained relative to fast food operators. Those establishments which serve liquor have an added boost to profit margins and as a result, are not as dependent on controls (although controls are still necessary). Also, higher average checks on food items usually allow these types of restaurants to serve larger portions than their fast food and cafeteria counter parts. Fine Dining restaurants have the advantage of obtaining the highest average check in the industry but still must practice strict portion control because of their independent status. Large chains have cash reserves to fall back on, but the fine dining independent is up against a fickle market and few cash reserves. Lindsey (1985) discusses several such operators including Wolfgang Puck, owner and chef at Spago's in Hollywood, California. Chef Puck exercises strict cost control in the area of purchasing, often buying directly from local farmers as opposed to established produce houses, which carry a higher mark up.

The entrepreneurial process has been described as having two phases, consisting of an invention phase and an innovation phase (Olson, 1985). The invention phase involves creating new ideas. Innovation involves taking those ideas and developing them into a useable form in the marketplace. The restaurant industry requires a high degree of creativity because of the changing tastes of consumers; therefore, this variable is considered an important factor in the survival of the firm. Innovation is also important because at some point successful ideas need to be translated into bottom line profits. Creative ideas are not as numerous in Fast Food restaurants, but high cost of research and development (innovation) requires that those ideas which are generated be readily profitable. Cafeteria establishments allow a greater degree of creativity in menu planning and merchandising. Because there is less emphasis on a limited menu, innovation need not be stifled if an item is not successful because the manager can simply eliminate it from the menu. Creativity is probably more stressed in Theme/Family restaurants since food items usually revolve around flexibility menus and daily specials. Innovation is important, but not as time consuming as fast food since R & D usually takes place in a regular restaurant kitchen as opposed to a food laboratory kitchen like those used in the fast food industry. Fine Dining restaurants are the most creative of the four relative to the other three groups. Daily specials and the whim of the chef often dictate what items will be featured on the menu. At the same time, innovation barriers are low since the chef usually possesses the skills to both create and innovate at the same time.

Vesper (1990) cites several examples where the lack of initial capitalization contributed to the failure of the firm. This same threat hangs over restaurant operators.

Fast Food, Cafeteria and Theme/Family establishments typically require high start-up costs, and thus require large amounts of initial capital because of the amount of space, building, and equipment needed to construct the restaurant. For example, cafeterias especially need a vast amount of dining area because of the steady flow of customers exiting the serving line. Fine Dining restaurants have opened in hotels (which permits leasing), old houses, and existing sites

of closed down businesses. A vast dining area is not as important since service and a higher average check are emphasized. As a result, capital requirements can be much lower compared to the previous three categories.

Figure 2 summarizes this discussion. On the matrix, the high, medium, and low classifications are relative. However, within each variable a ranking of importance is given relative to the other four restaurant classifications. For example, this discussion has identified location as an important startup and survival variable for the restaurant industry. However, among the four types of restaurants, location is the most important for fast food establishments (a high ranking) and least important for fine dining operations (a low ranking).

The matrix has also grouped startup and survival variables together as opposed to distinguishing between the two because startup is basically meaningless unless survival follows. No reputable restaurant operator would concentrate exclusively on startup variables without also considering the importance of the survival variables. In this matrix, the startup variables could be considered as location and capital requirements while the survival variables could consist of hands-on management, cost control, creativity, and innovation. However, these variables should not be considered as mutually exclusive but rather as interdependent. For example, the best location in the world along with high capitalization will not insure a successful restaurant if cost controls and innovation are not up to par.

Figure 2 A Framework of Startup and Survival Variables in the Restaurant Industry				
	Fast Food	Cafeteria	Theme/ Family	Fine Dining
Location	High	Medium	Low	Low
Hands-on Management	Medium	Medium	Medium	High
Cost Control Required	High	Medium	Low	High
Creativity Required	Low	Medium	Medium	High
Innovation Barriers	High	Low	Medium	Low
Capital Requirements	High	High	High	Medium

The significance of this matrix is that it further defines the importance of each variable relative to the type of restaurant that is being considered for startup. For example, the fast food operator who seeks to enter and survive should put a greater emphasis on location, cost control, R & D, and capital requirements. On the other hand, the entrepreneur who wishes to specialize in a fine dining establishment should focus on hands-on management, creativity, and cost controls. Cafeteria and theme/ family operators need to concentrate on all the variables to a certain degree, but they especially need to have the high capital requirements needed to make their types of restaurants successful.

## CONCLUSION

This paper has attempted to provide a framework from which future entrepreneurial research can be launched in the area of restaurant startup and survival. The purpose of this model is to distinguish which variables are important for each type of restaurant category. Other variables will need to be added or deleted for each specific restaurant classification. The model is conceptual so that empirical testing is needed to determine if indeed these variables are significant. Up to this point, entrepreneurial research has not sufficiently addressed this issue in the restaurant industry.

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# FACTORS THAT ENCOURAGE ENTREPRENEURIAL START-UPS AND EXISTING FIRM EXPANSION: A LONGITUDINAL STUDY COMPARING RECESSION AND EXPANSION PERIODS

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## ABSTRACT

*During the recession in 1991 New England small business owners were surveyed to determine which of 42 factors encourage entrepreneurial start-up and existing firm expansion, and how satisfied they were with these factors. Three years later during the expansion of 1994 the same group was surveyed to determine if there were significant differences ( $p < .05$ ) in their responses during these two phases of the business cycle. Of the 42 factors, 3 (or 7%) changed in importance and 16 (or 38%) changed in level of satisfaction with the factors. Overall, entrepreneurs are more satisfied with these factors during expansion, however, they rated 39 (or 93%) of the factors higher in importance than level of satisfaction with the factor ( $p < .05$ ) in 1994. The significant factors are presented and public policy implications are discussed.*

## INTRODUCTION

Small business start-ups created the groundwork for the Massachusetts miracle and the New England turnaround in the 1980s. It was the willingness of small businesses to form and expand that kept the economy strong (Lamp, 1988). Birch (1987) found that the keys to job creation are entrepreneurial firms. Economies that provide the proper environment for start-ups, and existing firms to expand, grow and flourish whereas those that fail to provide such an environment languish. Porter (1991) contended that the economic imperative is the need to create vast numbers of jobs. With large businesses downsizing, rightsizing, and re-engineering, many people are looking to small business as a means of economic expansion. Dun & Bradstreet (1994a) predicted that 3.1 million new jobs would be created in 1994 with 72.4 percent coming from firms with fewer than 100 employees. In contrast, companies with at least 25,000 employees will have a net drop in employment. New small firms with fewer than 20 employees have been recognized as the nation's job creators and creators of new markets for large firms (Phillips, 1993).

During the last two quarters of 1990 and the first quarter of 1991 the United States was in a period of recession. At about the same time, the Massachusetts miracle crashed to a halt. Between January 1989 and February 1991, the Massachusetts employment rate fell by 7.6

percent. Overall, the state lost roughly 300,000 jobs making this the worst recession since the Great Depression (Stein, 1991). Unemployment in the Commonwealth reached 9.7 percent in March 1991, the highest level since 1982. Business failures more than tripled during 1990. The overall increase in failure rates outpaced the nation in every major sector (Porter, 1991). To make matters worse, between 1988 and 1989 and 1989 and 1990, new business incorporations declined by 14 and 11 percent, the third highest in the nation (U.S. Small Business Administration, 1990).

According to Dun & Bradstreet (1994b), business failures fell 19.9 percent in the first-half of 1994 reflecting a widespread recovery for business. Failures declined in all nine census regions, with the New England states reporting the greatest decrease. According to an editorial in the Boston Globe (1994), things have changed in Massachusetts: The unemployment rate has dropped by nearly a third and employment is finally back on the rise. The commonwealth's business confidence index, as measured quarterly by Associated Industries of Massachusetts, is at a five-year high.

### PURPOSE

The researchers' purpose in conducting this study was to identify the factors considered to be of major importance in the encouragement of new business formation and existing firm expansion, and to compare differences from recession and expansion periods. The identification of these factors and differences will help public policy makers enhance the potential for economic expansion through job growth. The study was designed to answer four questions:

1.	What factors do small business owners consider to be most important in encouraging new business start-ups and existing firm expansion?
2.	What is the level of satisfaction of small business owners with these important factors?
3.	Is there a significant difference between the importance of these factors and business owners' satisfaction with them?
4.	Is there a difference between small business owners' responses during the recession and their responses during the expansion period.

### SELECTED LITERATURE REVIEW

To conserve space, only the four most relevant studies relating to the first three research questions are discussed. In addition, four other less relevant studies are presented in a summary list of factors in Table 1. Matz (1979) prepared a report for the Joint Economic Committee of Congress entitled "Central City Businesses - Plans and Problems," that examined what differentiates economically successful cities from depressed cities, what inner-city businesses require to become and remain healthy, and what determines the quality of a city's business environment. Matz suggested that the perceived business climate of a city



closely parallels the perceived quality-of-life in that city. Matz found tax rates, business costs, and labor factors in general were not viewed as important as the quality-of-life characteristics. Matz concluded that improving the quality-of life in cities where it is poor, and maintaining it where it is good, can have an important impact on the decisions of firms to relocate, alter the size of their work force, and reduce or expand their operations.

Birch (1987) wrote that capital availability and economic factors are generally only part of the picture, and that quality-of-life considerations are at least as important as economic factors in determining places business will choose. Birch recommended improving buildings, roads, harbors, and schools as well as capital markets to foster business growth.

Reynolds (1989) published the results of a two-state survey of new firms in Pennsylvania and Minnesota. Reynolds concluded that the most important and effective contributions government can make are the most basic features of government: quality educational programs at all levels, provision of a reliable infrastructure (roads, utilities, and transportation), and an efficient and responsive government helping new firms with timely appropriate decisions.

Porter (1991) conducted a study, "The Competitive Advantage of Massachusetts" for the Massachusetts Secretary of State. The purpose was to provide business and government leaders with an objective assessment of past economic performance, the current competitive position of the state's industries, and the long-term future prospects for the economy. Porter contended that while business formation was successful, government at all levels must look for more ways to encourage it. Steps needed to be taken to shorten the duration of the downturn and to create an environment that allowed the creation of a more prosperous economy.

Based on the earlier review of the literature: quality-of-life, availability of highly-skilled workers, and government attitude toward business were listed as important factors. The follow-up review of the literature continues to support these same factors. According to Sahlman (1993) there is a need for capital, effective government at all levels with more consistency and standardization among regulations at the three levels, and lower health-care cost. Stein (1994 a & b) reported that costs, especially for health care, are too high, environmental regulation is too burdensome, and efforts to attract and retain business are lackadaisical. According to the Corporation for Enterprise Development (1993), which rates each state for start-up attractiveness, there are six important factors: state economic performance, business vitality, development capacity, small-business culture, state business assistance environment, and balanced/fair tax and fiscal system. Massachusetts was ranked the 22nd state based on these six factors. Gendron (1995) reported results of a survey of CEOs who suggested ways in which the Massachusetts state government could improve the business climate. The most frequent responses included: provide incentives for business expansion, reduce taxes (business and/or personal), improve the educational system, reduce regulation, improve/expand the transportation system. For a comparison of eight studies which identified if each of 42 factors does encourage start-up and existing firm expansion see Table 1.

Table 1: List of Factors Encouraging Start-up and Existing Firm Expansion								
Factors	Authors							
	Matz	Birch	Johnson	Reynolds	Porter	Atkinson	Garrity	Jacoby
<b>Capital</b>								
Availability of capital	x		x		x		x	
Cost of Capital	x		x		x		x	
<b>Taxes</b>								
Local Property Tax			x	x			x	
Personal tax rate		x	x					
Corporate tax rate			x	x				
Availability of investment tax credit				x		x	x	
Sales tax rate on equipment and materials				x			x	
Capital Gains tax				x		x	x	
<b>Quality of Life</b>								
Quality of public schools	x	x	x		x	x		
Crime level	x	x	x		x	x		
Cultural attractions	x	x	x		x	x		
Adequacy of public services	x	x	x		x	x		
Adequacy of infrastructure	x	x	x		x	x		
Adequacy of public facilities	x	x	x		x	x		
Housing cost	x	x	x	x		x		
Physical attractiveness (area)	x	x	x	x	x	x		
<b>Labor:</b>								
Availability of high skilled workers	x		x	x	x	x		
Availability of semi-skilled workers	x		x			x		
Availability of low-skilled workers								
Cost of high skilled workers		x	x	x				
Cost of semi-skilled workers		x	x	x				
Cost of low-skilled workers		x	x	x				
Cost of worker's compensation insurance				x		x		x
<b>State and Local Government:</b>								
Education and training opportunities	x		x		x	x		
Attitude toward business	x	x	x		x	x		x
Zoning and land use		x				x		
Permits and licensing		x				x	x	x
Consistency in policies	x		x			x		x
Spending on education	x		x		x	x		
Regulations		x	x			x		x
Dispute to resolution						x		x
Business assistance programs			x		x	x		
<b>Market:</b>								
Demand for product/services		x	x	x				
Access to customers		x	x	x				
Access to suppliers			x					
Access to Research and Development facilities	x		x		x	x		
<b>Operating Costs:</b>								
Transportation	x		x	x		x		
Energy costs and reliability			x	x				
Property costs			x	x				
Rental costs			x	x				
Health insurance costs				x		x		
Cost and quality of telecommunications systems	x			x		x		

x Indicates that the Author agreed that the factor encourages start-up and existing firm expansion

## METHODOLOGY

This was a mail survey research design using a quasi-experimental longitudinal design. The 42 factors that encourage business start-up and existing firm expansion were used to answer the four research questions. In 1991, a period of recession, 220 questionnaires were received from New England small business owners rating these factors that encourage business start-ups and existing firm expansion and how satisfied the owners were with each factor. In 1994, a period of expansion, the same small business owners, minus those that failed, were re-surveyed to identify changes in the importance of these 42 factors, and their satisfaction with each factor. In 1994, 135 usable surveys were returned. The responses of 1991 were compared to the 1994 responses to determine significant differences ( $p < .05$ ).

Because there are so many more small businesses than large businesses, and the majority of new jobs come from small businesses, the survey was limited to small businesses. For the purpose of this study, a small business was defined as one that is independently owned and operated, not dominant in its industry, and employs fewer than 500 workers. This definition is adopted from the Small Business Act (SBA) of 1953 and the SBA's employment size classifications. The membership list of the Smaller Business Association of New England (SBANE) was selected for use. The SBANE membership list used included 1,204 firms in 1991. In 1991, 220 questionnaires were returned for a response rate of about 19%. In 1994, the same questionnaire was mailed to the same 1,204 businesses. However, 316 were returned, and the assumption was made that about 26% of the firms went out of business during this three year period. Of the 888 remaining business owners, 145 returned surveys for a 16% response rate. However, ten were not completely filled out and not used for statistical comparisons.

The characteristics of the sample were compared to the population to ensure reliable and valid representation. Using the Chi-square test, there were no significant differences ( $p < .05$ ) between the SIC industry population classification and the sample. In other words, all industries are represented by about the same percentage in the sample as the population. The 1994 sample and the 1991 sample were compared using the Chi-square test to ensure that the industry representation and size of business were not significantly different ( $p < .05$ ) over the two time periods; there were no significant differences. The average percentage of respondents (1991 and 1994) from each SIC industry classification were: 2% construction, 23% manufacturing, 1% transportation/communication/utility, 14% retail and whole trade, 49% services, 11% financial/insurance/real estate. The size of the businesses are measured by number of employees. In the sample (average 1991 and 1994) 59% of the businesses employed 0-19 workers, 30% employed 20-99 workers, and 11% employed 100-499 workers. About 50% of the small businesses in New England are in Massachusetts. Although the survey was mailed to the Smaller Business Association of New England, over 90% of its members are from Massachusetts.

Each survey question was measured using a seven point Likert scale. To answer question 1: How important is each factor in encouraging business start-up and expansion? small business owners simply circled the number 1-7 for all 42 factors listed in Table 1. The ordinal measurement range was 1 not important to 7 very important. To answer question 2:

How satisfied are you with each factor? the small business owner simply circled the number 1-7 for all 42 factors in the column to the right of question 1. The measurement range was 1 dissatisfied to 7 satisfied. Several spaces were provided so that factors not listed but considered important could be added. Other questions sought information about the current business environment, future plans, and demographic information.

To compare the level of importance to the level of satisfaction for each of the 42 factors (research question 3) for the 1994 respondents, the Wilcoxon matched-pairs signed-ranks test was used. The Mann-Whitney U independent groups test was used to determine if there was a significant change ( $p < .05$ ) in importance or in satisfaction for each of the 42 factors (research question 4) from 1991 to 1994.

## RESULTS AND DISCUSSION

To answer research question 1 (What factors do small business owners consider to be most important in encouraging new business startups and existing firm expansion?) descriptive statistics for all factors were calculated. See Table 2-for a rank order of factors ranked by means for 1991 and 1994. Note that property cost and access to suppliers dropped from the top ten listing from 1991 to 1994. These were replaced by the crime level, cost and quality of telecommunications, and consistency in policy.

The findings are logical because as revenues increase during expansion periods funds become available for property which may be closer to suppliers. As revenues increase the small business owner has more to lose, and therefore, is more concerned about crime. Cost and quality of telecommunications continues to increase in importance. Business planning is easier and more reliable when government policies are consistent.

For the answer to research question 2 (What is the level of satisfaction with these important factors?), descriptive statistics for all factors were calculated. See Table 3 for a rank order of factors small business owners were most dissatisfied with in 1991 and 1994. Note that availability of capital, attitude towards business, and housing costs dropped from the top 8 from 1991 to 1994. These three were replaced with the corporate tax rate and consistency in policy.

The findings are logical because as revenues increase during expansion periods capital becomes more readily available and housing costs are easier to finance when the business is doing well, and attitude towards business tends to be more positive when times are good. During expansion periods, businesses tend to make larger profits making tax an important issue, and consistency in government policy makes planning for growth easier and more reliable.

To answer research question 3 (Are there significant differences [ $p < .05$ ] between how important the factors are compared with how satisfied the small business owners are with each factor?), the Wilcoxon matched-pairs signed-ranks test was calculated. Of the 42 factors, 39 (or 93%) were rated significantly higher in importance than in level of satisfaction in 1994 compared to 40 (or 95%) in 1991. In 1991, cultural attractions and availability of low-skilled workers were not significant. The three non-significant factors in 1994 were: cultural

attractions, availability of low-skilled workers, and access to research & development facilities. Therefore, only access to research & development facilities is a new finding in 1994. Due to the large number of significant differences, only the top 10 discrepancies are presented in Table 4. See Table 4 for a listing of the top 10 largest discrepancies between importance of and satisfaction with each factor. Note that availability of capital and demand for product/service dropped from the top 10 list, and that personal taxes and housing costs were added to the top 10 from 1991 to 1994.

The above findings are logical because as economic activity increases during expansion periods, capital is more readily available and demand for products and services increases. Personal taxes become more important to the small business owner as profits increase during expansion periods. Housing cost may go up during an expansion period, but this cost may be offset by increased business profits.

To answer research question 4 (Is there a difference [ $p < .05$ ] between small business owners responses during the recession and their responses during the expansion period?), the Mann-Whitney U test was used. Question 4 has two parts: A. importance of and B. satisfaction with each of the 42 factors. See Table 5 for a listing of the 42 variables, and the significant difference ( $p < .05$ ) in importance and satisfaction between 1991 and 1994.

To answer part A of question 4 (Which factors are important?), only 3 of the 42 factors (or 7%) changed significantly from the recession period to the expansion period: The personal tax rate, the crime level, and cost and quality of telecommunications systems. All three increased in level of importance. This seems logical because as profits increase during expansion periods small business owners become more concerned about taxes and protecting assets. Cost and quality of telecommunications increase in importance as the global economy continues to expand.

To answer part B of question 4 (How satisfied are you with each factor?), 16 of the 42 factors (or 38%) changed significantly ( $p < .05$ ) from the recession period to the expansion period. Of the 16 changes, 15 increased in level of satisfaction, and one decreased in level of satisfaction. The 15 factors that increased in satisfaction level included: availability of capital, cost of capital, availability of investment tax credit, quality of public schools, crime level, adequacy of infrastructure, housing cost, cost of semi-skilled workers, cost of low-skilled workers, cost of worker's compensation insurance, attitude towards business, spending on education, business assistance programs, demand for product/service, and health insurance costs. The single factor that decreased in satisfaction level was quality of cultural attractions.

## PUBLIC POLICY IMPLICATIONS

Governments are often not sure whether to intervene to help companies, and if they do, governments are not clear what the best ways are (McGahey, 1990). According to Gittel (1990), public policy can take at least two contrasting approaches to business: Take no action thereby allowing firms to solve their own problems or become a business failure, or take an active role and intervene to help solve business problems. The results of the survey suggest that there could be benefits from public policy intervention. When making public policy changes,

the priorities should come from the ranking of important factors (Table 2), the ranking of satisfaction level with the factors (Table 3), the difference between the factors most important in encouraging business start-ups and existing firm expansion and business owner's level of dissatisfaction with these factors (Table 4), and differences between periods of recession and expansion (Table 5).

The importance of the factors that encourage start-up and existing firm expansion, and the level of satisfaction, change over the business cycle recession and expansion periods. During this three-year period of time between surveys, 316 firms (26%) went out of business. Therefore, public policy makers should be aware of the need to provide small business owners with additional and different types of support during recession periods to help small businesses continue to operate until the next expansion.

The need for capital during recessions was ranked 4th in difference between importance and satisfaction (Table 4). However, during the expansion period, it dropped from the top ten list of discrepancies between importance and satisfaction. An important implication for public policy makers is to make capital available to small business owners during periods of recession a high priority and less of a priority during expansion periods. The Small Business Administration (SBA) is doing the opposite. During the recession the SBA was not making many loans, but in 1995 during the expansion the SBA placed making loans a top priority. Public policies were in contradiction. At the same time the SBA was making loans available to stimulate the economy, the Federal Reserve was raising interest rates to slow down economic growth. During periods of expansion, the emphasis should change away from making loans and toward further development of the infrastructure and other factors listed.

Based on prior public policy, small business owners should not personally spend money earned during expansions without keeping some reserves for a recession or expand the business too quickly during expansions to the point of having insufficient funding during the next recession period when capital is more difficult to obtain. The small business owner should refine systems and watch costs at all times keeping fixed cost down to allow more flexibility during recessions.

Personal taxes also changed in discrepancy between importance and satisfaction during recession and expansion periods (Table 4). Personal tax did not make the top ten during the recession period, but was ranked third during the expansion. From the political perspective, the best time to cut taxes may be during expansions. However, at this time a cut in taxes may not be needed to stimulate the economy. The best time to cut taxes is during the recession to increase consumer demand and stimulate sales. This is illustrated (Table 2) with demand for product/service ranked first in importance during the recession and second during the expansion. The need for sales is always a concern, but more so during a recession. Once again, the public policy makers were in contradiction. Congress was considering a tax cut to stimulate the economy during the expansion of 1995 while the Federal Reserve was increasing interest rates to slow down the economy.

Overall, business owners are more satisfied with these 42 factors during expansion periods than recession periods. However, when comparing importance to satisfaction, the level of satisfaction with each factor is rated significantly lower ( $p < .05$ ) than importance during

both stages of the business cycle. Of major concern (Table 4) during both periods is the costs of health insurance and worker's compensation. The present health insurance benefit gives every business a tangible reason to reduce the number of employees. As Garrity (1990) stated, worker's compensation and unemployment systems are disgracefully administered. If public policy makers are concerned about creating future economic growth they need to listen to the needs of small business owners who are the source of new jobs and economic expansion. New small firms have been recognized as the nation's job creators and creators of new markets for large firms (Phillips, 1993). Also important during both stages of the business cycle are: crime, the attitude towards business, consistency in policy, regulation, and taxes. The crime rate directly affects business performance. Many potential customers will not transact business in high crime areas, and many businesses who cannot stay open at night lose sales. Public policies that reduce crime are beneficial. As Garrity (1990) describes, government attitude towards business at best tolerates entrepreneurial virtues for the tax revenues they provide, and at worst is anti-business. People need to be educated to realize that business is not the bad guy or the enemy. Without business there are no jobs in the private sector to pay for the jobs of the people who work in the public sector. When public policy makers give help to small businesses they also help employees and consumers. Consistency in policy is also needed for stability. In sports rule makers do not continually confuse the player by changing the rules dramatically, nor should public policy makers. It would be helpful to business if government at all levels had consistent long-term strategic policies to promote businesses' ability to compete and adapt in a global marketplace. Regulations are oppressive to small business (Garrity, 1990). Regulation discourages small business owners who often feel as though they work for the government with all the forms they have to fill out. Fewer and better regulations can help stimulate business. It is tempting to shift the burden of payment for the large budget deficit to business through taxes. However, as history has shown, business tend to pass the cost along to consumers with negative overall inflationary results.

Public policy intervention addressing these issues of small business owners that coordinate activities between different levels of government and public, nonprofit, and private sectors can result in an increased quality of life for all.

<b>Tables 2 and 3</b>			
<b>Descriptive Statistics: Rank Order of Factors by Importance</b>			
<b>Factor</b>	<b>Mean</b>	<b>Median</b>	<b>Mode</b>
<b>Most Important Factors in 1991</b>			
Demand for product/service	6.18	7.00	7.00
Health insurance cost	6.17	6.00	7.00
Attitude towards business	6.01	6.00	7.00
Access to customers	5.97	6.00	7.00
Availability of capital	5.96	6.00	7.00
Cost of worker's compensation	5.84	6.00	7.00
Availability of high-skilled workers	5.71	6.00	6.00
Quality of public schools	5.66	6.00	7.00
Property cost	5.50	6.00	6.00
Access to suppliers	5.49	6.00	6.00
<b>Most Important Factors in 1994</b>			
Health insurance cost	6.22	7.00	7.00
Demand for product/service	6.02	7.00	7.00
Access to customers	5.98	6.00	7.00
Attitude towards business	5.91	6.00	7.00
Cost of worker's compensation	5.90	6.00	7.00
Crime level	5.88	6.00	6.00
Availability of capital	5.80	6.00	7.00
Quality of public schools	5.79	6.00	7.00
Cost and quality of telecommunications	5.70	6.00	7.00
Availability of high-skilled workers	5.64	6.00	6.00
Consistency in policy	5.64	6.00	7.00
<b>Descriptive Statistics: Rank Order of Factors by Level of Satisfaction with Factor</b>			
<b>Factors Least Satisfied With in 1991</b>			
Health insurance costs	2.08	2.00	1.00
Cost of worker's compensation	2.21	2.00	1.00
Availability of capital	2.83	3.00	3.00
Capital gains tax	2.87	3.00	4.00
Regulations	2.99	3.00	4.00
Personal tax rate	3.00	3.00	4.00
Attitude towards business	3.01	3.00	2.00
Housing costs	3.02	3.00	3.00
<b>Factors Least Satisfied With in 1994</b>			
Cost of worker's compensation	2.73	3.00	1.00
Health insurance costs	2.74	3.00	2.00
Regulations	3.04	3.00	4.00
Personal tax rate	3.14	3.00	4.00
Capital gains tax	3.20	3.00	4.00
Corporate tax rate	3.22	3.00	4.00
Consistency in policy	3.24	4.00	4.00



<b>Table 4: Differences Between Factor Importance and Satisfaction Levels</b>				
<b>1991 Factors (Number of Cases = 220)</b>	<b>Z</b>	<b>Mean* -Ranks/ # of cases</b>	<b>Mean** +Ranks/ # of cases</b>	<b>Ties***</b>
Health insurance costs	-12.3	103/202	22/2	/16
Cost of worker's compensation	-12.1	104/197	34/6	/17
Attitude towards business	-11.8	98/186	27/5	/29
Availability of capital	-11.7	102/191	53/8	/21
Demand for product/service	-11.5	91/175	17/3	/42
Crime level	-11.3	93/173	30/7	/40
Consistency in policy	-11.2	87/168	24/3	/49
Regulations	-11.2	91/172	41/6	/42
Corporate tax rate	-11.1	90/171	51/6	/43
Property costs	-11.0	90/170	53/6	/44
<b>1994 Factors (Number of Cases = 135)</b>	<b>Z</b>	<b>Mean* -Ranks/ # of cases</b>	<b>Mean** +Ranks/ # of cases</b>	<b>Ties***</b>
Health insurance costs	-9.58	62/122	0/0	/13
Cost of worker's compensation	-9.15	61/111	15/6	/18
Personal taxes	-9.01	60/108	15/6	/21
Crime level	-8.87	58/110	35/4	/21
Attitude towards business	-8.74	53/102	17/2	/31
Consistency in policy	-8.55	52/99	22/3	/33
Property cost	-8.53	50/96	9/2	/37
Housing cost	-8.51	56/100	21/7	/28
Regulations	-8.43	52/97	22/4	/34
Corporate tax rate	-8.36	57/102	31/8	/25
<p>* - mean ranks: satisfaction ranked &lt; importance  ** + mean ranks: satisfaction ranked &gt; importance  *** ties: satisfaction ranked = importance  The significance level for each factor comparison is (p &lt; .001)</p>				

Factor	Importance			Satisfaction		
	1994	1991	p	1994	1991	p
<b>Capital:</b> Availability of capital				229	149	.000
Cost of Capital				193	181	.044
<b>Taxes:</b> Personal tax rate	195	170	.024			
Availability of investment tax credit				199	168	.003
<b>Quality of Life:</b> Quality of public schools				200	167	.003
Crime level	202	167	.001	194	171	.034
Cultural attractions				161	191	.007
Adequacy of infrastructure				194	171	.036
Housing cost				203	165	.001
<b>Labor:</b> Cost of semi-skilled workers				193	171	.041
Cost of low-skilled workers				195	170	.020
Cost of worker's compensation insurance				202	166	.001
<b>Government:</b> Attitude toward business				197	169	.001
Spending on education				202	166	.011
Business assistance programs				195	170	.023
<b>Market:</b> Demand for product/services				210	161	.000
<b>Operating Cost:</b> Health insurance costs				211	160	.000
Cost and quality of telecommunications	194	171	.034			

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## A COMPARISON OF FOUR SCALES PREDICTING ENTREPRENEURSHIP

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### ABSTRACT

*Four scales that have been used in entrepreneurship research were compared as to their relative efficacy in discriminating between entrepreneurs and non-entrepreneurs. The Entrepreneurial Quotient (EQ), Entrepreneurial Attitude Orientation (EAO), Myers-Briggs Type Indicator (MBTI), and Herrmann Brain Dominance Instrument (HBDI) were used to discriminate between entrepreneurs, owner-managers, and non-entrepreneurs. Senior and graduate students distributed the four scales and two demographic questionnaires to friends, family, and acquaintances (n=335), who served as subjects. The EQ was the most efficient discriminator and the EAO was second best. The EQ/EAO/MBTI was the best overall combination predictor of group membership. The strengths and weaknesses of each of the scales for entrepreneurship research are discussed.*

### INTRODUCTION

Over the past 30 years a variety of scales and instruments have been used in the study of entrepreneurship. Some scales were intended primarily as predictors (Sexton & Bowman, 1984, 1986), others were intended to provide understanding (Boyd & Gumpert, 1984; Singh, 1989; Welsh & White, 1981). Some scales were entrepreneurship specific (Dandridge & Ford, 1987; Hornaday & Vesper, 1982; Scherer, Brodzinski, & Wiebe, 1990), others were broad measures of general characteristics (Begley & Boyd, 1987; Fagenson & Marcus, 1991; Hornaday & Aboud, 1971; Sexton & Bowman, 1983). Virtually all of these studies used only one scale (Sexton & Bowman, 1985 is a notable exception to this). This raises the research question of whether prediction and understanding of entrepreneurship might be enhanced by using several different types of scales in a multi-scale study. Such a comparison would allow entrepreneurship researchers to see which of the scales best discriminates between an entrepreneurial group and other groups. To the extent that the scales are different from each other, such a comparison could guide researchers in selecting the scale(s) most appropriate to their specific research question.

Four scales are used in this study. The Entrepreneurial Quotient© (EQ) and the Entrepreneurial Attitude Orientation© (EAO) were designed and validated to discriminate between entrepreneurs and non-entrepreneurs. The Myers-Briggs Type Indicator© (MBTI™)

and the Herrmann Brain Dominance Instrument© (HBDI™) were designed and validated as general indicators of a person's preferred ways of thinking and behaving.

The EQ was selected because it was short, had face validity, and was specifically developed to measure entrepreneurship. The EAO was selected because it was specifically developed through rigorous scale development procedures to measure entrepreneurship based on attitude rather than personality theory. The MBTI was selected because it is so widely used across a diverse range of research situations. It has been estimated that over 1.7 million people a year in the United States take the MBTI and that "the MBTI is the most popular 'self-insight, insight into others' instrument in use today" (Druckman & Bjork, 1991, p.96). While the MBTI has been used to predict entrepreneurship (Hoy & Carland, 1983; Wortman, 1986), the authors of the scale made no specific statement regarding its prediction of entrepreneurship. An instrument in the area of brain dominance was selected because of occasional mentions that entrepreneurship was a "right brain" activity (Kao, 1991, p. 160; Timmons, 1985, p. 34; Williams, 1981). The HBDI is a commonly used measure of this type that is based on a brain dominance metaphor. The HBDI has been specifically proposed for entrepreneurship research (Winslow & Solomon, 1989), and Herrmann (1988) made specific statements regarding the HBDI's prediction of entrepreneurs.

In addition, several trait tests have been used in entrepreneurship research. Sexton and Bowman (1986) have done a series of studies using a modified version of the Jackson Personality Inventory and Personality Research Form-E (JPI/PRF-E). Hornaday and Aboud (1971) and DeCarlo and Lyons (1979) used the Edwards Personal Preference Schedule (EPPS). McClelland (1961) and Wainer and Rubin (1969) used the Thematic Apperception Test (TAT).

Based on the reviews of trait research (Brockhaus, 1982; Brockhaus & Horwitz, 1986; Gartner, 1988), it was our expectation that the trait approach to entrepreneurship would not discriminate between entrepreneurs and non-entrepreneurs. Therefore, we did not include any standard "trait" scales such as the EPPS or JPI/PRF-E. Instead, we included two entrepreneurship specific scales and two general scales. The EQ is a test of how one's self-perception and personal characteristics compare with those of "successful entrepreneurs." The EAO is based on tripartite attitude theory. The MBTI is based on Jung's personality types. The HBDI is a measure of preference for certain activities.

#### OVERVIEW OF THE FOUR SCALES USED IN THIS STUDY

The Entrepreneurial Quotient (EQ) is a paper and pencil instrument created by John Caspari, a Northwestern Mutual Life Insurance Company (NMLIC) employee. NMLIC felt it was to their advantage to hire agents who were "entrepreneurial." Through a literature search Caspari found 60-66 supposed characteristics of entrepreneurs. A university professor was hired to develop the scale using experimental and control groups, resulting in a final instrument of 22 questions with varying weightings. The EQ has been used since then by NMLIC in agent selection and in training and motivating current agents. The EQ has been offered widely to the general public as a self-scored instrument. Scores on the EQ range from

-42 to +47 with entrepreneurs having positive scores. The more positive the score the more entrepreneurial the person is predicted to be.

The EQ items are based on many of the truisms surrounding entrepreneurship. Two examples follow. "Significantly high numbers of entrepreneurs are children of first generation Americans. If your parents were immigrants, score plus 1. If not score minus 1." "Entrepreneurial personalities seem to be easily bored. If you are easily bored, add 2. If not, subtract 2" (Northwestern Mutual Life Insurance Company, 1985). Thirteen of the 22 EQ items make it perfectly clear in the question itself how an entrepreneur would answer. Of these, 2 are based on life history (e.g. immigrant parents), while the other 11 are subject to personal interpretation (e.g. easily bored). The remaining 9 items of the EQ, while not explicit in stating how an entrepreneur would answer, are also subject to personal interpretation (e.g. "If you were daring, add 4 more"). As can be seen from these examples, all the EQ in essence is doing is asking subjects many times if they are an entrepreneur, and is highly susceptible to demand characteristics. The advantage to this might be that those who are entrepreneurs know they are entrepreneurs probably better than anyone. This approach of just asking them in different ways if they are entrepreneurs may be a reliable predictor. There does not appear to be any published research that has tested the EQ's ability to predict entrepreneurship.

The Entrepreneurial Attitude Orientation (EAO) is a paper and pencil instrument developed to predict entrepreneurship based on the tripartite model of attitude rather than on demographics or personality theory (Robinson, 1987, Robinson, Stimpson, Huefner & Hunt, 1991). The tripartite model states that cognition, affect, and conation are the fundamental components of attitude. The attitude components are included in the EAO in order to increase the content validity of each subscale. There is a single score for each subscale. The four EAO subscales are: "1) *Achievement in Business* (ACH) referring to concrete results associated with the start-up and growth of a business venture. 2) *Innovation in Business* (INN) relating to perceiving and acting upon business activities in new and unique ways. 3) *Perceived Personal Control of Business Outcomes* (PC) concerning the individual's perception of control and influence over his or her business. 4) *Perceived Self-Esteem in Business* (SE) pertaining to the self-confidence and perceived competency of an individual in conjunction with his or her business affairs" (Robinson, Stimpson, Huefner & Hunt, 1991, p. 19). The range of the four EAO subscale scores is 10 to 100. On each subscale the higher the value the more entrepreneurial the individual is predicted to be.

The EAO was created specifically to measure entrepreneurship and has successfully discriminated between entrepreneurs and non-entrepreneurs in several research contexts (Hunt, Huefner, Voegele, & Robinson, 1989; Robinson, Huefner, & Hunt, 1991; Robinson, Stimpson, Huefner & Hunt, 1991).

The Myers-Briggs Type Inventory (MBTI) is a paper and pencil instrument based on Carl Jung's personality theory that individual behavior is due to individual differences in perception and judgement. "Perception involves all the ways of becoming aware of things, people, happenings or ideas. Judgement involves all the ways of coming to conclusions about what has been perceived" (Myers & McCaulley, 1989, p. 1). The MBTI is based on four bipolar subscales: Extroversion-Introversion, Sensing-Intuition, Thinking-Feeling, and

**Judging-Perceiving**, each a basic personality type (Myers & McCaulley, 1989). The MBTI is widely used in organizations in both employee selection and personnel development and also in academic research.

**Extroversion-Introversion (E-I)** is a measure of an individual's preferred way of interacting with people and things in the environment. Extraverts focus on the people and objects around them. Introverts focus on the inner world of concepts and ideas.

**Sensing-Intuition (S-N)** is a measure of an individual's preferred way of perceiving. A sensing orientation focuses on the moment and the information coming through the five senses. An intuiting orientation focuses more on insight coming from meanings, relationships, and possibilities.

**Thinking-Feeling (T-F)** is a measure of an individual's preferred way of judgment. A thinking orientation indicates inferences based on logic and analysis. A feeling orientation indicates inferences based on values and feelings of others.

**Judging-Perceiving (J-P)** is a measure of an individual's preferred way of dealing with the environment. A judging orientation indicates a desire for planning, order, and structure. A perceiving orientation indicates flexibility and a sensitivity to new information.

Based on Jung's theory, the MBTI identifies an individual's preference on each of the four dimensions. One pole of each dimension is preferred over the other, and each dimension is independent of the others. This is not to imply that if an individual is sensing that he or she never uses intuition, just which of the two is preferred. A classification for each of the four dimensions results in sixteen possible types (e.g. ENTP, ISFJ, etc).

The MBTI manual (Myers & McCaulley, 1989) makes no prediction of which preferences would be most common for entrepreneurs. Although the instrument is used as an occupational guidance tool and has extensive listings of occupations, entrepreneurs are not mentioned. There is a listing for "business-general, self-employed" and for "managers and administrators." Neither category is a close match with entrepreneur.

The MBTI has been used in entrepreneurship research. Hoy & Hellriegel (1982) in a study of small businesses managers found that the vast majority (70+%) of them were STs. Ginn and Sexton (1988; 1989; 1990) in their study of founders and cofounders of moderate and fast growing Fortune 500 firms found that I (53%), N (60%), T (80%), and J (54%) were the most common types. For each of these studies the strongest preference tendencies for business owner-managers were obtained for the SN and TF subscales. Based on these findings it is expected that the SN and TF subscales would differentiate between entrepreneurs and non-entrepreneurs.

The Herrmann Brain Dominance Instrument (HBDI) is a paper and pencil instrument developed by Ned Herrmann. It evolved from Herrmann's efforts to categorize individuals as having a left- or right-brain dominance by measuring their learning preference or style (Herrmann, 1988). Brain dominance is inferred from stated preferences. While some of its terminology and even its name bear evidence of its origin, its current form is preference oriented, not physiologically oriented (Ho, 1988).

Herrmann's theory underlying the HBDI is that people's behavioral tendencies can be seen as a combination of four categories of preferences. These four categories initially had

brain-dominance names but now are known simply as quadrants A, B, C, and D. These four quadrants are based on the physiological metaphor of the human brain. Quadrant A, upper left, is typified by activities that are logical, analytical, and mathematical. Quadrant B, lower left, is typified by activities that are controlled, planned, and sequential. Quadrant C, lower right, is typified by activities that deal with emotion, are people oriented, or are spiritual in nature. Quadrant D, upper right, is typified by those activities that are imaginative, holistic, and require synthesis (Ho, 1988).

For each of the quadrant scores Herrmann (1988) states that a score of 67 or greater indicates a primary preference, a score between 34 and 66 indicates a secondary preference, and a score between 0 and 33 indicates a tertiary preference. A primary preference is where the individual actively pursues and prefers the activities. A secondary preference is where the individual neither prefers nor avoids the activities. A tertiary preference is where the individual actively avoids the activity.

The entrepreneurial profile is identified by Herrmann as featuring a very high score in the D quadrant, with moderate to strong scores in the other three quadrants (Herrmann, 1988, p. 104). In spite of the specific entrepreneur prediction of the HBDI, there does not appear to be any published research that has tested this relationship.

## METHODOLOGY

### Statement of Hypotheses

1. We expected to find that the EQ would discriminate between entrepreneurs, owner-managers, and non-entrepreneurs, and that the entrepreneur group mean would be significantly higher than the means for the other two groups.
2. We expected to find that the EAO subscales would discriminate between entrepreneurs, owner-managers, and non-entrepreneurs, and that the entrepreneur group means for each of the subscales would be significantly higher than the other two groups.
3. We expected to find that one or more of the MBTI subscales, especially the SN and TF, would discriminate between entrepreneurs, owner-managers, and non-entrepreneurs, and that the entrepreneur group means for the SN and TF subscales would be significantly more Intuitive and Thinking than the other two groups.
4. We expected to find that only the Quadrant D subscale of the HBDI would discriminate between entrepreneurs, owner-managers, and non-entrepreneurs, and that the entrepreneur group means for the Quadrant D subscale would be significantly higher than the means for the other two groups.
5. We expected to find combinations of the EQ, the EAO subscales, the MBTI subscales, and the HBDI subscales that would give greater discrimination between entrepreneurs and non-entrepreneurs than would any single scale or subscale.

One-hundred seventy-three students in four senior level and two graduate level business classes, participating in an ongoing class project, approached student and non-student friends, family, and acquaintances and solicited their help in answering four scales plus three sheets



of demographic information. Respondents were undergraduate and graduate university students, their friends, family, and acquaintances.

We realize that this sample gives purists "sample heartburn." We relied on this sample because it seemed unlikely that uninvolved respondents would give the estimated two hours to complete all the questionnaires, and incomplete responses were worthless. The study was conducted without financial support, so had to rely on psychological involvement. Being asked by a student they knew to help that student in a class project provided enough involvement to obtain complete response sets from 335 respondents. These respondents were then classified into groups based on their own demographic information and self-categorization, not by the students who asked them to participate. Paying small business owner-managers and entrepreneurs and others for two hours of their time was prohibitive and had its own objections. Members of a trade association or small business association might have a biased frame of reference. While it was obvious from the requested demographic and self-categorization questions that the study had something to do with business ownership and entrepreneurship, no further elaboration was provided to the students or to the respondents. We did what we could to ameliorate the effects of a less than ideal sample. Bias and demand effects are seldom obvious, so disclaiming them is fruitless. However, we did at least get a variety of respondents, some in every classification, and each of the 335 provided a complete data set.

About 500 questionnaire packets were produced for distribution by students. Because participation was not required and the students themselves distributed the questionnaire packets, the total number of questionnaire packets actually given to potential subjects was unknown. Students received class project credit for completed, returned questionnaires. Three-hundred thirty-five subjects returned completed questionnaires (approximately 67% return rate). The age range for subjects was 16 to 72 ( $M = 32.6$ ,  $s = 10.8$ ). The years of education ranged from 8 to 20 ( $M = 16$ ,  $s = 2.2$ ).

A packet containing an instruction sheet, four scales and two demographic questionnaires was given to each subject. The EQ consisted of 22 forced choice items. The EAO consisted of 75 items that are rated on a 10-point strongly disagree to strongly agree scale. The MBTI consisted of 166 forced choice items. The HBDI consisted of 120 forced choice items. The first demographic questionnaire consisted of 13 questions about such topics as birth order, family background and economic status, education, and previous business experience. The second demographic questionnaire consisted of 9 questions dealing with previous, current, and expected future entrepreneurial experience. The demographic questions were answered on the questionnaire. The scales were answered on machine scorable answer sheets.

While the order of the questionnaires was the same for every packet, they were not connected, thus, subjects may have completed them in any order. When asked, most subjects reported that it took between 1.5 and 2.5 hours to complete all the questionnaires in the packet.

The packets were distributed by undergraduate and graduate students who were enrolled in entrepreneurship courses at Brigham Young University. Students were invited to

fill out a packet themselves. Students were especially encouraged to give packets to people they knew who they thought definitely were or were not entrepreneurs.

The instructions given to all subjects were that they were to go through the material quickly giving their first response. It was suggested that they not complete all the questionnaires in one sitting and that they could even do them over a period of days if they wanted. It was hoped that this instruction would help minimize fatigue. Subjects were told that their responses would be anonymous and that they could obtain a summary of their scores for each of the tests taken. Students were told their scores would be returned in class. Non-students were invited to provide a mailing address if they wanted their scores returned.

Subjects were told that the purpose of the project was to find family background, personal characteristics, brain dominance, and experience factors related to entrepreneurship. It was explained that the personal benefit of participating in this study would be that they would potentially gain some new personal insight, especially as it might relate to entrepreneurship.

Included in the packet was an addressed, postage paid envelope for subjects to mail back their completed questionnaire packets. The MBTI and HBDI were professionally scored, while one of the authors calculated the scores for the EQ and the EAO.

An explanation sheet and summary of all test scores were sent to each participant who provided a return address. Brief summaries of the MBTI and HBDI were returned to participants with the instruction that "Each of these instruments is meant to be administered by a professional and the output interpreted by a professional. If you want to use any of this output for guidance in your life we strongly suggest that you contact a professional psychologist for a thorough interpretation of your scores."

In our own previous work (Robinson et. al., 1991), we defined entrepreneurs as individuals who had started two or more businesses, the last within the past five years, using some form of innovation. In our current research efforts we again started with the expectation that entrepreneurs were those who had owned and managed one or more businesses. However, of those in our sample who had owned and managed one or more businesses ( $n = 148$ ), in a question that asked if they were entrepreneurs, 27 individuals (18.2%) answered "no." This was contrary to our a priori approach to entrepreneurs and led us to reevaluate our operationalization.

This led us to conceptualize a 2 by 2 matrix illustrated in Figure 1. The first dimension is whether subjects currently owned and managed or had previously owned and managed businesses or other ventures (none versus 1 or more). The second dimension is how the subject answered "Are you an entrepreneur?" (yes or no). The number who qualified for each category is given in each cell.

Using the classification grid in Figure 1, non-entrepreneurs were those who said they were not entrepreneurs and had never owned and managed a business. Owner-managers were those who said they were not entrepreneurs but had owned and managed one or more business. Entrepreneurs were those who said they were entrepreneurs and had owned and managed one or more business. Potential entrepreneurs were those who said they were entrepreneurs but had never owned and managed a business.

**Figure 1**  
**Classification of Groups and Number of Subjects in Groups**

**Number of Businesses Owned**

		None	1 or More
Entrepreneur	"No"	Non-entrepreneurs (n=174)	Owner- Managers (n=27)
	"Yes"	Potential Entrepreneurs (n=13)	Entrepreneurs (n=121)

We were conceptually troubled by exactly what a “potential entrepreneur” represents. We suspected at first that potential entrepreneurs were undergraduate students who thought they might be entrepreneurs in the future but had not yet owned and managed a business. However, in looking at the demographic characteristics of these 13 individuals (3 women and 10 men), the age ranged from 23 to 29 and education ranged from 16 to 19 years. These are people who have had time to start businesses, but have not done so. There was no way of knowing whether this was because they were still students, because the right opportunity had not yet presented itself, or because their assessment that they are entrepreneurs was incorrect. Because we couldn't clearly identify the entrepreneurial and business characteristics of this group, and because there were only 13 individuals in this group, they were dropped from the final analysis.

### ANALYSIS

The EQ and EAO provide interval data, whereas the MBTI and HBDI result in categorizations based solely on interval data. While the express purpose of the MBTI and HBDI is to classify individuals into types, there cannot be any information in the categorical data that isn't more fully expressed in the interval data because the categorical information was derived from the interval data. The purpose of this research was to compare the relative efficacy of each of the instruments in predicting entrepreneurs. To be able to run parallel analyses for each of the four scales it was essential to use the interval subscale values from the MBTI and HBDI. The use of interval data is also a minimal requirement for MANOVA and discriminant analysis which were both used in this study.

The EQ, EAO, and HBDI produced interval scores directly usable in the statistical analyses. The subscale scores produced by the MBTI, however, were alphanumeric combinations. For example, the Introvert-Extravert subscale could be for one individual an “I 47” and for another individual an “E 47.” To differentiate between these two identical numerical scores, there was a transformation done based on the “alpha” part of these

subscales. To do that we multiplied one of the two dimensions of each subscale by a -1 to reverse the sign. For this analysis Extrovert, Sensing, Thinking, and Judging scores were all multiplied by a -1 while the Introvert, Intuitive, Feeling, and Perceiving scores remained the same. Thus, for the Extravert-Introvert subscale using the example above, the I/47 score became a -47 while the E/47 stayed a +47 on the new scale.

Sex was used as an experimental control variable in all analyses because it might interact with group for the dependent variables. Sexton and Bowman-Upton (1990) found personal characteristic differences for men and women, but concluded that it would have no impact on entrepreneurship success. The model for this study was a 2 x 3 (2 sexes by 3 groups) MANOVA.

The discriminant analysis used the "jackknife procedure" for the classification results. Internal classification schemes, when the same data set is used for both the calculation of the discriminant analysis and the classification results of that analysis 1) produce an artificially high correct hit rate (Huberty, 1984) and 2) produce tests of significance of difference between proportions that are ambiguous (Hsu, 1989). In this data set there were not enough subjects to run a split-half cross-validation procedure without significantly reducing the statistical power of the discriminant analysis. Instead, SAS Proc Discrim was used to crossvalidate the discriminant analysis using the jackknife classification procedure. The jackknife or "leave-one-out procedure" removes each subject one at a time, calculates the discriminant function based on all the other subjects, and then classifies the deleted subject according to that discriminant function. This process is carried out for every subject in the data set. The final classification table shows the tally of the classifications of the deleted subjects (Huberty, 1984). This approach generally provides a reasonable assessment of the performance of the discriminant function (McKay & Campbell, 1982b).

## RESULTS

Table 1 shows the univariate F-scores and probabilities for sex, group, and the sex by group interaction for the EQ scale and the EAO, MBTI, and HBDI subscales. The last two rows show the MANOVA results and degrees of freedom for sex, group, and the sex by group interaction. There was an overall statistically significant effect for both sex ( $F(13, 304) = 5.91, p < .0001$ ) and group ( $F(26, 608) = 2.86, p < .0001$ ). There was not an overall effect for the sex by group interaction ( $F(26, 608) = 1.16, p = .26$ ). The results for the univariate  $F$ s for the sex and group effects are presented in separate sections for each of the scales below.

Table 2 shows the means, standard deviations, and statistical probabilities for the main effect for sex for the EQ and each of the subscales. Table 3 shows the means, standard deviations, and statistical probabilities for the main effect for group for the EQ and each of the subscales. Table 4 shows the means, standard deviations, and statistical probabilities for the sex by group interaction for the EQ and each of the subscales. While there are two significant univariate  $F$ s for the sex by group interaction, there was not an overall MANOVA for this effect, and so these interactions will not be discussed. An examination of the univariate  $F$ s for the sex and group effects is presented in separate sections for each of the scales below.

While the overall sex effect was statistically significant, this variable was included not because it comprises a point of primary relevance to the study, but because of the possibility that it might interact with the group effect. While the information for sex and sex by group interaction is included in Tables 2 and 4, the statistical results for each scale will focus primarily on the group effect.

	Sex (1,316)		Group (2,316)		Sex*Group (2,316)	
	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>
1) EQ	9.35	.0024	32.83	.0001	.19	.8279
2) EAO-SE	5.69	.0176	3.36	.0359	3.58	.0289
3) EAO-PC	.36	.5500	3.55	.0298	.04	.9649
4) EAO-INN	6.28	.0127	9.69	.0001	1.15	.3180
5) EAO-ACH	3.22	.0737	1.05	.3523	.55	.5797
6) MBTI-EI	<.01	.9866	2.85	.0595	.54	.5808
7) MBTI-SN	.24	.6270	9.28	.0001	.64	.5300
8) MBTI-TF	3.19	.0750	1.23	.2945	.01	.9927
9) MBTI-JP	.76	.3857	4.48	.0120	1.47	.2314
10) HBDI-Quadrant A	33.64	.0001	.56	.5705	.45	.6408
11) HBDI-Quadrant B	1.49	.2236	1.95	.1434	3.37	.0354
12) HBDI-Quadrant C	32.76	.0001	.07	.9356	.76	.4670
13) HBDI-Quadrant D	.02	.9027	7.92	.0004	.94	.3929
MANOVA	5.91	.0001	2.86	.0001	1.16	.2629
	df=13, 304)		(df=26, 608)		(df=26,608)	

	Males		Females		<i>f</i> (1,316)	<i>P</i> -level
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>		
1) EQ	11.03	15.65	.65	16.50	9.35	.0024
2) EAO-SE	75.68	7.82	74.02	9.40	5.69	.0176
3) EAO-PC	69.46	9.40	69.79	10.14	.36	.5500
4) EAO-INN	70.80	8.56	67.11	8.99	6.28	.0127
5) EAO-ACH	78.26	8.00	80.48	8.28	3.22	.0737
6) MBTI-EI	-2.58	28.11	-3.38	26.61	<.01	.9866
7) MBTI-SN	-2.10	27.29	-8.31	29.02	.24	.6270
8) MBTI-TF	1.23	22.45	8.94	23.94	3.19	.0750
9) MBTI-JP	-3.01	27.46	-9.85	26.96	.76	.3857
10) HBDI-Quadrant A	73.89	22.98	54.97	21.00	33.64	.0001
11) HBDI-Quadrant B	73.17	19.19	75.80	17.66	1.49	.2236
12) HBDI-Quadrant C	60.13	20.04	76.60	21.08	32.76	.0001
13) HBDI-Quadrant D	65.71	24.85	63.21	21.68	.02	.9027

	Entrepreneurs		Owner-managers		Non-entrepreneurs		<i>F</i> (1,316)	<i>P</i> -level
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>		
1) EQ	18.24	13.23	-.63	14.96	1.81	15.28	32.83	.0001
2) EAO-SE	77.39	7.81	74.20	10.00	73.76	8.19	3.36	.0359
3) EAO-PC	71.67	8.82	69.16	8.68	68.17	10.08	3.55	.0298
4) EAO-INN	73.56	8.11	68.06	8.53	67.16	8.46	9.69	.0001
5) EAO-ACH	79.82	7.42	79.95	6.87	78.20	8.75	1.05	.3523
6) MBTI-EI	-8.16	27.28	.11	28.95	.43	27.22	2.85	.0595
7) MBTI-SN	5.05	27.12	-11.07	25.38	-9.28	27.37	9.28	.0001
8) MBTI-TF	-.01	23.58	3.52	23.93	6.21	22.54	1.23	.2945
9) MBTI-JP	2.82	28.01	-18.63	22.54	-8.61	26.31	4.48	.0120
10) HBDI-Quadrant A	69.82	25.28	68.26	24.68	66.61	23.04	.56	.5705
11) HBDI-Quadrant B	68.79	18.38	76.30	15.04	77.25	18.78	1.95	.1434
12) HBDI-Quadrant C	62.93	21.01	67.26	21.80	66.64	22.18	.07	.9356
13) HBDI-Quadrant D	74.08	25.88	59.44	17.88	59.41	21.27	7.92	.0004

**Table 4**  
**Means, Standard Deviations, Fs, and Probabilities for the Sex**  
**by Group Interaction for the Eq Scale and for the Eao, Mbti, and Hbdi Subscales**

		Males		Females		<i>F</i> (1,316)	<i>P</i> -level
		<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>		
1) EQ	Entrepreneurs	19.17	12.30	14.05	16.49	.19	.8279
	Owner-managers	3.43	13.29	-5.00	15.92		
	Non-entrepreneurs	4.56	15.25	-2.70	14.34		
2) EAO-SE	Entrepreneurs	77.73	7.44	75.86	9.35	3.58	.0289
	Owner-managers	78.11	9.20	69.98	9.37		
	Non-entrepreneurs	73.49	7.44	74.20	9.33		
3) EAO-PC	Entrepreneurs	71.52	8.87	72.32	8.78	.04	.9649
	Owner-managers	68.89	8.95	69.44	8.74		
	Non-entrepreneurs	67.65	9.63	69.02	10.79		
4) EAO-INN	Entrepreneurs	74.36	8.20	69.94	6.78	1.15	.3180
	Owner-managers	70.13	4.50	65.84	11.20		
	Non-entrepreneurs	67.61	8.04	66.42	9.11		
5) EAO-ACH	Entrepreneurs	79.65	7.51	80.61	7.11	.55	.5797
	Owner-managers	78.69	5.76	81.31	7.91		
	Non-entrepreneurs	76.94	8.51	80.28	8.80		
6) MBTI-EI	Entrepreneurs	-7.61	27.85	-10.64	24.98	.54	.5808
	Owner-managers	-3.23	23.60	3.92	34.38		
	Non-entrepreneurs	2.15	28.30	-2.39	25.30		
7) MBTI-SN	Entrepreneurs	4.48	27.27	7.64	26.94	.64	.5300
	Owner-managers	-9.14	26.11	-13.15	25.46		
	Non-entrepreneurs	-7.20	26.36	-12.67	28.83		
8) MBTI-TF	Entrepreneurs	-1.24	23.03	5.55	25.78	.01	.9927
	Owner-managers	.71	21.38	6.54	26.95		
	Non-entrepreneurs	3.57	22.00	10.55	22.91		
9) MBTI-JP	Entrepreneurs	5.14	27.46	-7.64	28.70	1.47	.2314
	Owner-managers	-19.86	19.18	-17.31	26.43		
	Non-entrepreneurs	-8.30	26.23	-9.12	26.64		
10) HBDI- Quadrant A	Entrepreneurs	73.97	24.37	51.14	20.85	.45	.6408
	Owner-managers	78.93	24.59	56.77	19.73		
	Non-entrepreneurs	73.16	21.56	55.89	21.44		
11) HBDI- Quadrant B	Entrepreneurs	67.09	18.62	76.46	15.42	3.38	.0354
	Owner-managers	73.93	13.80	78.85	16.44		
	Non-entrepreneurs	78.64	18.76	74.99	18.72		
12) HBDI- Quadrant C	Entrepreneurs	59.35	20.03	79.00	17.91	.76	.4670
	Owner-managers	56.57	21.15	78.77	16.36		
	Non-entrepreneurs	61.31	20.01	75.38	22.94		
13) HBDI- Quadrant D	Entrepreneurs	75.06	26.29	69.68	24.02	.94	.3929
	Owner-managers	57.79	21.09	61.23	14.29		
	Non-entrepreneurs	58.17	20.87	61.44	21.92		

As shown in line 1 of Table 2, there was a significant sex effect for the EQ ( $F(1, 316) = 9.35, p = .0024$ ). The mean for men ( $M = 11.03$ ) was significantly higher than the mean for women ( $M = .65$ ). There was no significant sex by entrepreneur interaction for the EQ (Table 4 line 1). As shown in line 1 of Table 3, there was a significant difference between the entrepreneur, owner-manager and the non-entrepreneur groups ( $F(2, 316) = 32.83, p = .0001$ ). Sheffe's S showed that entrepreneurs ( $M = 18.24$ ) were significantly higher than both non-entrepreneurs ( $M = 1.81$ ) and owner-managers ( $M = -.63$ ) on this scale. There was no statistically significant difference between non-entrepreneurs and owner-managers for this scale. The  $\epsilon^2$  (eta-squared) for the group effect was 20.8% for the EQ. Eta-squared is a measure of the proportion of population variance in the dependent measure attributable to treatment group membership and is a construct similar to that of  $r^2$ .

Of the four EAO subscales (Table 2 lines 2-5), the PC and ACH subscales were not significantly different for men versus women. For the SE subscale men ( $M = 75.68$ ) were significantly higher than women ( $M = 74.02$ ). For the INN subscale men ( $M = 70.80$ ) were significantly higher than women ( $M = 67.11$ ). Three of the four EAO subscales were significantly different for the entrepreneur, owner-manager, and non-entrepreneur groups (Table 3 lines 2-5). The exception was the ACH subscale. The SE ( $F(2, 316) = 3.36, p = .0359$ ), PC ( $F(2, 316) = 3.55, p = .0298$ ), and INN ( $F(2, 316) = 9.69, p = .0001$ ) subscales were significantly different for the entrepreneur, owner-manager, and non-entrepreneur groups. Sheffe's S showed the SE and PC means for entrepreneurs ( $M = 77.39$  &  $71.67$ ) to be significantly higher than those means for non-entrepreneurs ( $M = 73.76$  &  $68.17$ ), but not significantly higher than owner-managers ( $M = 74.20$  &  $69.16$ ). For the INN subscale, Sheffe's S showed that entrepreneurs ( $M = 73.56$ ) were significantly higher than both owner-managers ( $M = 68.06$ ) and non-entrepreneurs ( $M = 67.16$ ). The  $\epsilon^2$  for the group effect was 2.1% for the SE subscale, 2.2% for the PC subscale, and 6.1% for the INN subscale.

There was no statistically significant difference between men and women for any of the MBTI subscales (Table 2 lines 6-9). Additionally, there was no statistically significant sex by group interaction (Table 4 lines 6-9). Of the four MBTI subscales for group effect (Table 3 lines 6-9), the Extravert-Introvert (EI) and Thinking-Feeling (TF) subscales were not significantly different for the entrepreneur, owner-manager, and non-entrepreneur groups. There was a significant difference between the entrepreneur, owner-manager, and non-entrepreneur groups on the Sensing-Intuitive (SN) subscale ( $F(2, 316) = 9.28, p = .0001$ ). Sheffe's S showed that entrepreneurs were significantly higher than both owner-managers and non-entrepreneurs on this subscale. The mean for entrepreneurs was clearly Intuitive ( $M = 5.05$ ). The means for owner-managers ( $M = -11.07$ ) and non-entrepreneurs ( $M = -9.28$ ) were clearly Sensing. The standard deviations were large enough ( $s = 27.12, 25.38, \text{ and } 27.37$ ) that many entrepreneurs were Sensing (45.4%), and many owner-managers (33.3%) and non-entrepreneurs (36.8%) were Intuitive. There was also a significant difference between the entrepreneur, owner-manager, and non-entrepreneur groups on the Judging-Perceiving (JP) subscale ( $F(2, 316) = 4.48, p = .0120$ ). Sheffe's S showed that entrepreneurs were significantly higher than both owner-managers and non-entrepreneurs on this subscale. The mean for entrepreneurs was Perceiving ( $M = 2.82$ ). The means for owner-managers ( $M = -18.63$ ) and



non-entrepreneurs ( $M = -8.61$ ) were clearly Judging. The standard deviations were large enough ( $s = 28.01, 22.54, \text{ and } 26.31$ ), however, that many entrepreneurs were Judging (48.8%), and many owner-managers (18.5%) and non-entrepreneurs (35.1%) were Perceiving. The  $\epsilon^2$  for the group effect was 5.9% for the Sensing-Intuition (SN) subscale, and 2.8% for the Judging-Perceiving (JP) subscale.

Of the four HBDI subscales, the Quadrant B and Quadrant D subscales were not significantly different for men and women (Table 2 lines 10-13). For the Quadrant A subscale men ( $M = 73.89$ ) were significantly higher than women ( $M = 54.97$ ). For the Quadrant C subscale women ( $M = 76.60$ ) were significantly higher than men ( $M = 60.13$ ). There was one significant sex by entrepreneur interaction for the HBDI Quadrant B subscale (Table 4 line 11). A means comparison test showed male entrepreneurs ( $M = 67.09$ ) were significantly lower than the other five groups ( $F(1, 316) = 14.35, p = .0002$ ). None of the other interaction means for Quadrant B were significantly different from the others. This suggests that male entrepreneurs, while not low on the scale in the absolute sense, are lower than the other groups in activities that are controlled, planned, and sequential. For the group effect of the four HBDI subscales (Table 4 lines 10-13), the Quadrant A, B, and C subscales were not significantly different for the entrepreneur, owner-manager, and non-entrepreneur groups. On the Quadrant D subscale there was a significant difference between entrepreneurs, owner-managers, and non-entrepreneurs ( $F(2, 316) = 7.92, p = .0004$ ). Scheffe's S showed the mean for entrepreneurs ( $M = 74.08$ ) to be significantly higher than the means for owner-managers ( $M = 59.44$ ) and non-entrepreneurs ( $M = 59.41$ ). There was no significant difference between owner-managers and non-entrepreneurs. This suggests that the entrepreneurs were higher for those activities that are imaginative, holistic, and require synthesis. The  $\epsilon^2$  for the group effect was 5.0% for the Quadrant D subscale.

### THE DISCRIMINANT ANALYSES

Our final research question dealt with whether we could find combinations of the EQ, the EAO subscales, the MBTI subscales and the HBDI subscales that would give greater discrimination between entrepreneurs and non-entrepreneurs than would any single scale or subscale. A series of discriminant analyses were run for each of the scales and subscales, singly and in combination, where the dependent measure was the entrepreneur, owner-manager, and non-entrepreneur categorization. The adequacy of the discriminant functions were evaluated based on the jackknife classification results produced for each analysis.

Following the suggestion of McKay and Campbell (1982a), virtually every possible combination of scales and subscales was run for a total of 39 different discriminant analyses. Because this is far too much information to present in a paper of this type and because so many of the analyses produced less satisfactory classification results, only the four scales and a select few of the best combinations of scales and subscales are presented here. It is important to make clear that the objective in the evaluation of the classification tables was to maximize the number of entrepreneurs that were correctly identified as entrepreneurs and minimize the number of non-entrepreneurs and owner-managers that were incorrectly identified as

entrepreneurs. This combined consideration was seen as the best overall correct classification for entrepreneurs. For the remainder of this paper, consistent with the terminology of signal detection theory, a correct hit is when entrepreneurs were identified as entrepreneurs and a false hit was when either non-entrepreneurs or owner-managers were identified as entrepreneurs.

Table 5 presents the classification results for the four major scales used in this study. The column labeled “entrepreneur” gives the percent of entrepreneurs, business-owners, and non-entrepreneurs classified as entrepreneurs. The highest overall correct classification for entrepreneurs was obtained for the EQ (highest percent of entrepreneurs correctly classified as entrepreneurs *and* the lowest percent of business-owners and non-entrepreneurs incorrectly classified as entrepreneurs). What is noteworthy with the EQ is that it did not produce an especially high number of correct hits (53.3%), but produced by far the lowest number of false hits (8.1%). The analysis for the EAO produced a higher correct hit rate (60.6%), but also produced a much higher false hit rate (32.2%). Both the correct hit rate and the false hit rate for the MBTI (57.7% and 30.4%) and HBDI (58.4% and 29.1%) were slightly lower than for the EAO and both rates were substantially higher than for the EQ.

<i>Scale</i>	<i>Actual Group</i>	<i>Entrepreneur</i>	<i>Owner-manager</i>	<i>Non-entrepreneur</i>
EQ	Entrepreneur	53.3%	13.1%	33.6%
	Owner-manager	3.7%	59.3%	37.0%
	Non-entrepreneur	12.6%	53.7%	33.7%
EAO	Entrepreneur	60.6%	19.7%	19.7%
	Owner-manager	37.0%	11.1%	51.9%
	Non-entrepreneur	27.4%	35.4%	37.1%
MBTI	Entrepreneur	57.7%	28.5%	13.9%
	Owner-manager	29.6%	33.3%	37.0%
	Non-entrepreneur	31.4%	40.0%	28.6%
HBDI	Entrepreneur	58.4%	22.6%	19.0%
	Owner-manager	29.6%	22.2%	48.2%
	Non-entrepreneur	28.6%	36.6%	34.9%

Table 6 presents the classification results for only those combinations of the four scales which produced the best results. The best combination of scales was the EQ/EAO/MBTI, with a correct hit rate of 62.8% and a false hit rate of 28.2%, which is superior to all single scales with the possible exception of the EQ. The next highest combination of scales was the EAO/MBTI which produced approximately the same results (62.8% and 29.8%). It is interesting to note that in combining all four scales, the EQ/EAO/MBTI/HBDI, the correct hit rate dropped (59.1%) and the false hit rate remained relatively high (28.9%).

The last line of Table 6 also presents the classification results for the EQ with two subscales, the EAO’s INN subscale and the MBTI’s EI subscale. This combination gave the

highest correct hit rate, 67.2%, of any of the classification results; unfortunately, it also gave the highest false hit rate of 36.4%. Table 7 summarizes the correct hit rates and false hit rates for each of the classification results presented in Tables 5 and 6.

<i>Scale</i>	<i>Actual Group</i>	<i>Entrepreneur</i>	<i>Owner-manager</i>	<i>Non-entrepreneur</i>
EQ, EAO	Entrepreneur	61.3%	19.7%	19.0%
	Owner-manager	37.0%	14.8%	48.2%
	Non-entrepreneur	28.0%	33.7%	38.3%
EQ, EAO, MBTI	Entrepreneur	62.8%	21.2%	16.1%
	Owner-manager	29.6%	29.6%	40.7%
	Non-entrepreneur	26.9%	39.4%	33.7%
EAO, MBTI	Entrepreneur	62.8%	21.9%	15.3%
	Owner-manager	33.3%	25.9%	40.7%
	Non-entrepreneur	26.3%	40.0%	33.7%
EQ, EAO, MBTI, HBDI	Entrepreneur	59.1%	21.9%	19.0%
	Owner-manager	33.3%	22.2%	44.4%
	Non-entrepreneur	24.6%	40.6%	34.9%
EQ, INN, EI	Entrepreneur	67.2%	7.3%	25.6%
	Owner-manager	40.7%	14.8%	44.4%
	Non-entrepreneur	32.0%	18.3%	49.7%

<i>Scale or Subscale</i>	<i>Classified as Entrepreneur</i>	
	<i>Correct Hits</i>	<i>False Hits</i>
EQ	53.3%	8.1%
EAO	60.6%	32.2%
MBTI	57.7%	30.5%
HBDI	58.4%	29.1%
EQ/EAO	61.3%	32.5%
EAO/MBTI	62.8%	29.8%
EQ/EAO/MBTI	62.8%	28.2%
EQ/EAO/MBTI/HBDI	59.1%	28.9%
EQ/INN/EI	67.2%	36.4%

## DISCUSSION

It seemed likely that male and female entrepreneurs might differ significantly in terms of the scales used in this study. Because of this it was important to test for the sex by group interaction. The MANOVA showed a significant overall sex effect. The HBDI Quadrant A and Quadrant C, the EAO SE and INN, and the EQ univariate ANOVAs were all significant.

The MANOVA results for the sex by group interaction did not show a significant overall effect. There were, however, two significant univariate ANOVAs: the EAO SE and the HBDI Quadrant B scores. Given the lack of an overall significant sex by group interaction, the effect of sex per se was of limited interest in this analysis.

It does bear mentioning, however, that for the EQ the mean difference between men and women was not only statistically significant but also large ( $M = 11.03$  for men versus  $M = .65$  for women). Given that the EQ is solely intended as a measure of entrepreneurship, this large difference suggests the strong possibility that the EQ is sex-biased (see Webb, 1991 for a discussion of the problems of sex bias in job related psychometric testing). The differences for the HBDI Quadrant A and Quadrant C were also large. However, the HBDI subscales are intended to measure broader behavioral patterns, not just entrepreneurship, so in the context of this research the sex difference on these subscales is less critical.

There was a significant sex effect for the EQ. Men scored substantially higher ( $M = 11.03$ ) on this scale than did women ( $M = .65$ ). The EQ is presented as an indicator of potential for entrepreneurial success. As there is no basis for supposing that men and women, in general, differ in their potential for entrepreneurial success, the EQ needs to be either revised or sex normed if it is going to be used as a general measure of entrepreneurship. There was no significant sex by entrepreneur interaction. For the EQ, entrepreneurs scored significantly higher than owner-managers and non-entrepreneurs, which supports hypothesis 1. The ANOVA result for the EQ was the strongest of any scale (the  $\epsilon^2$  was 20.8%). This is not too surprising for a scale specifically designed to measure entrepreneurship.

The EQ, however, has heavy demand characteristics. Thirteen of the 22 questions indicate in the question how an entrepreneur would answer. The operationalization of entrepreneur used in this study was an individual who had started one or more businesses or other ventures and who said they were an entrepreneur. It is not surprising that people who indirectly say they are an entrepreneur on thirteen questions, also say they are an entrepreneur when asked "are you an entrepreneur?" Given that the demand characteristics of the EQ are in sum the same as asking subjects if they are entrepreneurs, this may account for this scale's discriminatory power. This doesn't argue against this scale's usefulness as an indicator of who might be an entrepreneur. It does, however, indicate that the EQ's discriminatory power might be due to the demand characteristics of the scale rather than the relevance of the material in the EQ's questions. Despite the EQ's shortcomings of obvious sex bias and serious demand characteristics, it is still one of the best predictors of entrepreneurship (see Table 7). Future development of the EQ, if any, needs to directly address these problems.

There was a significant sex effect for the ACH subscale. It is interesting to note that, perhaps contrary to stereotype, it was women who were significantly higher than men on this

subscale. This may have something to do with the sample being taken from a highly educated population. There were no significant sex by entrepreneur interactions, however, so this finding for sex is of limited relevance to the central research question.

Three of the EAO subscales, SE, PC, and INN, were significantly different for entrepreneur versus owner-manager and non-entrepreneur groups. This should not be surprising given the fact that the EAO scale was specifically designed to measure entrepreneurship. The expectation was that all four of the EAO subscales would be statistically different for the group effect (Hypothesis 2). It was surprising that the ACH subscale, which is a measure of concrete results associated with the start-up and growth of a business venture, was not significant for the group effect. While entrepreneurs were significantly higher in their sense of self-esteem, their desire for personal control, and their innovation in business, all three groups reported about equally strong desire for concrete business results (Table 3 line 5).

Based on the  $\epsilon^2$ , of the EAO subscales the INN subscale was the strongest predictor (6.1%). PC and SE scores, while statistically significant, had relatively small statistical effects ( $\epsilon^2 = 2.2\%$  and  $2.1\%$  respectively).

The non-significant results for ACH were similar to those found for the step-wise discriminant analysis results in earlier research using the EAO (Robinson, Stimpson, Huefner, & Hunt, 1991). The step-wise results indicated that of the four subscales, the effect of ACH was the weakest and was redundant once the other subscales were taken into account. This seems to suggest that, despite the folk-knowledge that entrepreneurs have a greater need for achievement than others, this dimension was not one that differentiates entrepreneurs from the population at large. Table 3 line 5 shows that the ACH means for all three groups were the highest means for any of the EAO subscales, with essentially no difference between them. This suggests that this dimension may be endemic to American culture.

In comparing the EAO results of this study to earlier research (Robinson, Stimpson, Huefner, Hunt, 1991), it is important to recognize that the current study used a somewhat different operationalization of entrepreneur. In the earlier study many of the current owner-manager group would have been classified as entrepreneurs. The entrepreneur / owner-manager distinction is important because for all of the statistically significant subscales for the group variable, the owner-managers were significantly different from the entrepreneurs.

There was no significant sex or sex by group interaction effect for any of the MBTI subscales (possibly because this scale is sex normed). In MBTI theory, the Extravert-Introvert subscale is the most dominant. There was not a significant difference between the groups for the Extravert-Introvert subscale, although it was very close to the conventional .05 level of significance ( $F(2, 316) = 2.85, p = .059$ ). The mean for entrepreneurs was clearly Extravert, while the means for the other groups were slightly Introvert. In MBTI theory, the second most dominant scale is the Sensing-Intuitive, and the groups were significantly different for this scale. The mean for entrepreneurs was moderately Intuitive, while owner-managers and non-entrepreneurs were clearly Sensing (Table 3 line 7). There was also a significant difference for the groups for the Judging-Perceiving subscale. The mean for entrepreneurs was slightly

Perceiving, while the means for the owner-managers and non-entrepreneurs were clearly Judging (Table 3 line 9).

While there was no significant difference for the Thinking-Feeling subscale, slightly more of the entrepreneur group were classified as Thinking rather than Feeling (Table 3 line 8). This is consistent in direction with earlier research findings (Ginn & Sexton, 1988, 1989, 1990; Hoy & Hellriegel, 1982), although the effect was not as strong. The non-significant findings, although in the right direction, do not support the hypothesized Thinking-Feeling difference between entrepreneur and non-entrepreneur groups (Hypothesis 3).

The Sensing-Intuition and the Judging-Perceiving subscales were significantly related to the group variable, with entrepreneurs being significantly more Intuitive and Perceiving. However, substantial proportions of entrepreneurs were the opposite: Sensing (45.4%) and Judging (48.8%). Thus, caution needs to be exercised in categorizing all entrepreneurs as "Intuitive-Perceiving" types.

The theory behind the MBTI is explicit in stating that only the type categorization, not the subscale scores, should be used. Based on this approach, the Intuitive to Sensing ratio for entrepreneurs was 54.6% / 45.4%. It seems unlikely that categorical analysis would have been as sensitive to this difference as was the ANOVA using the interval scores. This supports the use of the MBTI interval subscale scores especially in research settings.

Despite the statistical advantages of using the MBTI interval subscale scores, some mention of how the groups would have been classified bears mentioning. In Table 3 lines 6-9 a negative score indicates Extravert, Sensing, Thinking, or Judging while a positive score indicates Introvert, Intuitive, Feeling, or Perceiving. It is noteworthy that for each of the subscales the entrepreneur group means made them ENTP, which was the opposite of the owner-manager and non-entrepreneur groups' means (ISFJ). The type attributes of entrepreneurs in this study were also substantially different from those given in the MBTI manual (Myers & McCaulley, 1989) for business-general, self employed (ESTJ; E = 56.8%, I = 43.2%; S = 54%, N 46%; T = 58.4%, F = 41.6%; J = 60%, P = 40%), and managers and administrators (ESTJ; E = 56.7%, I = 43.3%; S = 56.3%, N = 43.7%; T = 61.6%, F = 38.4%; J = 69.3%, P = 30.1%), which were the categories most similar to entrepreneur listed in the MBTI manual. These categories from the MBTI manual have the E and T in common with the entrepreneur group (ENTP) and the S and J in common with the owner-manager and non-entrepreneur groups (ISFJ). It is possible that the MBTI norms for owner-managers may have included both the owner-manager category and the entrepreneurship category, confounding the differences found between the two groups. Not having found any previous entrepreneur norm per se for the MBTI, this study may be the first norming of the MBTI for entrepreneurs.

There were significant sex effects for the HBDI Quadrant A and Quadrant C subscales. Men were significantly higher than women on the Quadrant A subscale and men were significantly lower than women on the Quadrant C subscale. The Quadrant A subscale is intended to be a measure of activities that are logical, analytical, and mathematical. The Quadrant C subscale is intended to be a measure of activities that deal with emotion, are people oriented, or are spiritual in nature. Neither of these subscales was hypothesized as relevant to entrepreneurship nor significant for the group variable.

A significant sex by entrepreneur interaction was obtained for the HBDI Quadrant B score, but, because of the lack of an overall sex by group finding on the MANOVA, this finding could well be due to chance alone. Given this word of caution, for this subscale male entrepreneurs were significantly lower than the other groups. The Quadrant B subscale is intended to be a measure of activities that are controlled, planned, and sequential. However, it is important to note that the mean for the male entrepreneur group of 67.09 still indicates a primary preference for these activities, while the other group means are even higher in the 'primary' preference range for this subscale.

The only significant group difference for the HBDI subscales was for Quadrant D. The profile score for Quadrant D (upper-right) was significantly higher for entrepreneurs than for the other two groups. For the Quadrant D subscale (the right brain metaphor) the highest mean was for the entrepreneur group and the lowest means were for the owner-manager and non-entrepreneur groups. This Quadrant D score indicates a preference for activities that are imaginative, holistic, and require synthesis, preferences often seen as central to entrepreneurship. This is in line with the theoretical position stated by Herrmann (1988) that "the entrepreneurial profile features a very strong D quadrant preference" (p. 104), and confirms Hypothesis 4.

#### DISCRIMINANT ANALYSES

One of the central questions of this study was whether combinations of the scales and the subscales would discriminate between entrepreneurs, owner-managers, and non-entrepreneurs better than do single scales or subscales. There are any number of ways of framing discriminant analysis. The objective used here was to maximize the correct hit rate for entrepreneurs, while minimizing the number of non-entrepreneurs and owner-managers who were misclassified as entrepreneurs. These results are summarized in Table 7.

The correct hit and false hit percentages in Table 7 show that, with the exception of the EQ alone, there were not large differences for the various scale and subscale combinations when classifying subjects as entrepreneurs. To conserve on space, only the best classification results were reported in this paper. The EQ's low misclassification of owner-managers and non-entrepreneurs is probably due to those who said they were not an entrepreneur and had not owned a business (the operationalization of non-entrepreneur used here), also saying no they were not an entrepreneur when asked 22 more times in another context (the EQ). In answering the EQ very few non-entrepreneurs "said" they were entrepreneurs.

For the most part there was a tradeoff -- more correct hits were usually accompanied by more false hits. Increasing the number of entrepreneurs correctly identified also increased the number of owner-managers and non-entrepreneurs that were misclassified as entrepreneurs. Because of this there was no clear recommendation for the best scale or combination of scales. The gain of a few percentage points in correct hits and fewer false hits resulting from some of the combinations (e.g. the improvement of the EAO/MBTI combination over the EAO alone), comes at the price of a much longer test battery.

In terms of overall efficiency, the EQ produced the best results because of its exceptionally low misclassification of owner-managers and non-entrepreneurs as entrepreneurs, rather than on having the highest correct hit rate for entrepreneurs. The best of the rest of the scales and subscale combinations were fairly similar in efficiency. The best combination of scales was the EQ/EAO/MBTI. This produced a higher correct hit rate for entrepreneurs (62.8%), but also produced a much higher false hit rate (28.2%) than the EQ alone. Perhaps the most interesting combination was the EQ/EAO-INN/MBTI-Extravert-Introvert, which produced both the highest correct hit rate (67.2%) and the highest false hit rate (36.4%).

### CONCLUSIONS AND LIMITATIONS

The two primary limitations in this study are the non-random sample and possible order effects. The sample consisted of undergraduate and graduate university students, their friends, family, and acquaintances. This sample was relied on because it seemed unlikely that uninvolved respondents would give the estimated 2 hours to complete all the questionnaires. As it stands, those who did complete the questionnaires did it either as a class assignment or as a favor to a student they knew well. As the average subject was a 32-year-old with four years of college, the sample obviously did not just consist of undergraduate and graduate students.

The focus of this study was on the relative efficacy of four psychological scales in differentiating between entrepreneurs, owner-managers, and non-entrepreneurs. It was not intended that the results reported here be understood as being descriptive of the population in general. It is expected, however, that the scales that differentiated between the groups in this study would also differentiate between these groups if gathered through a random sampling process. Again, the reason a random sample was not used in this study was the improbability of uninvolved subjects taking the time to complete all the questionnaires used.

The second limitation involves potential order effects due to fatigue and tedium in completing the questionnaire packet. In the packet provided to each subject the questionnaires were always stapled independently and clipped together in the same order. However, once the clip was removed any order of completion was possible. Most of the packets were probably answered in the original order. The tedium of completing the full set of questionnaires may have had an effect on the way that subjects responded to certain scales. Thus, there may have been some order effects. Several of the subjects complained that the process took too long.

This study has clearly established that all four scales discriminated between entrepreneurs, owner-managers, and non-entrepreneurs. There were clear cut differences between entrepreneurs, owner-managers, and non-entrepreneurs on the various psychological measures used. The extent to which these differences impact the behavior of entrepreneurship remains to be seen. Future research will have to identify those psychological characteristics which predict not only who will be an entrepreneur, but also the type of venture selected and their likelihood of success.



The discriminant analysis showed that each of the scales, with the exception of the EQ, was about equally effective in discriminating entrepreneurs from owner-managers and non-entrepreneurs. Given near equal effectiveness, the scale of choice depends on what other research questions are being considered. The MBTI and HBDI might be best if the study deals with personality types or preferences in a context broader than just that of entrepreneurship. If the study being considered deals only with entrepreneurship, then perhaps the EAO is the best measure. If the goal is to minimize the number of non-entrepreneurs who are classified as entrepreneurs, then the EQ would be the scale of choice.

This study was not designed to discover if psychological characteristics make a difference in entrepreneurial success. With so many powerful influencing factors, even if psychological characteristics do play an important role, they could be easily swamped by the other factors (e.g. market pressure, national economy, funding availability, etc.). In spite of all this, if psychological characteristics do play even a small role in the expression of entrepreneurship, understanding the role they play needs to be a part of the general theory of entrepreneurship. This research supports the continued use of psychological scales in understanding and predicting entrepreneurship.

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# **PRACTICAL TOOLS FOR ENTREPRENEURIAL STRATEGIES: APPLYING THE ISSUE SET MODEL**

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## **ABSTRACT**

*This paper presents a diagnostic model known as the issue set and shows its use in analyzing the issues facing an industrial firm. Finally, paper offers a template for applying this model to a wide range of issues facing entrepreneurial business concerns.*

## **INTRODUCTION**

A central element underlying effective entrepreneurship is a clear understanding of the environment impacting the business concern. Central to the development of understanding is the process of interpretation itself — the cognitive factors influencing what issues are seen and how they are prioritized. Research over the past decade has recognized the important impacts of cognitive factors on managerial decision-making, noting how "collective interpretations of key events move from unformed and tentative to well-constructed, well-processed viewpoints. The implication of this progress is that the fullest understanding of an event may come from ... interpretive stages" (Isabella, 1990, 33).

One key for reconciling the potentially incompatible demands of business risk and stakeholder demand is a recognition of precisely what issues a firm's stakeholder/customers define as important — and, just as significantly, how these definitions compare with the firm's internal assessment of significant issues. Examining the imbedded issue definition processes of firms in the marketplace can provide critical information for starting to understand these linkages between firm issue definitions and stakeholder issue expectations. Toward that end, this paper details through a grounded theory study how issues are defined within one organization and, from this example, offers a diagnostic approach for addressing stakeholder/consumer issues in a more responsible fashion.

## **RESEARCH PROBLEM, METHODOLOGY, AND FINDINGS**

As a grounded theory study, this work does not propose an hypothesis for verification or refutation. Rather, it originates with general questions which provide the setting for the collection of data and the analysis and development of emergent concepts from this data (Glaser, 1992). The two questions guiding this work are: 1. How do managers define issues in a changing environment? and 2. How can managers use this knowledge to develop entrepreneurial strategies?

The methodology employed in answering these questions was grounded theory analysis. Over 40 hours of interviews with 22 middle and upper level managers within an industrial firm provided the data for the classification of general concepts driving the managerial issue definition process in the subject firm. The organizational setting for this study was a private, investor-owned utility in the Eastern United States. Validity testing was accomplished through the use of two methods of data triangulation (Denzin, 1970; Yin, 1993; Silverman, 1993): multiple sources of coincident information, and presentation of proposed models to participants for verification. Participants confirmed all aspects of the core concepts of the models and expanded upon these concepts by suggesting practical applications for testing their utility in actual firm settings. One experienced manager commented, after viewing the perspective of the company revealed in the research, that it had given him some interesting ideas for attempting to improve managerial responsiveness within the organization.

The organizing framework for data emerging from this initial analytic approach was Wood's concept of the issue set (Wood, 1986, 1994). This research has amended Wood's basic model, however, by adding the element of directionality to its structure. Within an issue set, specific concerns are linked together into more generic issues, which ultimately coalesce into a central (or focal) issue. This process of linkage may flow either from specific issues to more general constructs, or from the general to the detailed specifics. A movement of issue definitions towards greater generalization suggests an integrative flow, where separate concerns coalesce and combine into a central focus. Issue definitions from this vantage evolve from an integration of many specific concerns into larger, more generalized conceptualizations. Opposite to this issue set pattern is the extended flow, where the focal concern is extended throughout and its influence distributed from a generalized concern into the secondary and tertiary issue levels. Issue definitions from this vantage originate with a clearly defined central issue, with all subsidiary issues reflecting this orientation. Figure 1 shows the issue set analysis template, detailing the issue categories of Wood's initial structure with the addition of directionality.

Figure 2 details the grounded issue set derived from the data collected for this study. The central issue driving organizational activities within the firm is "performance". The issue domains most frequently cited as significant

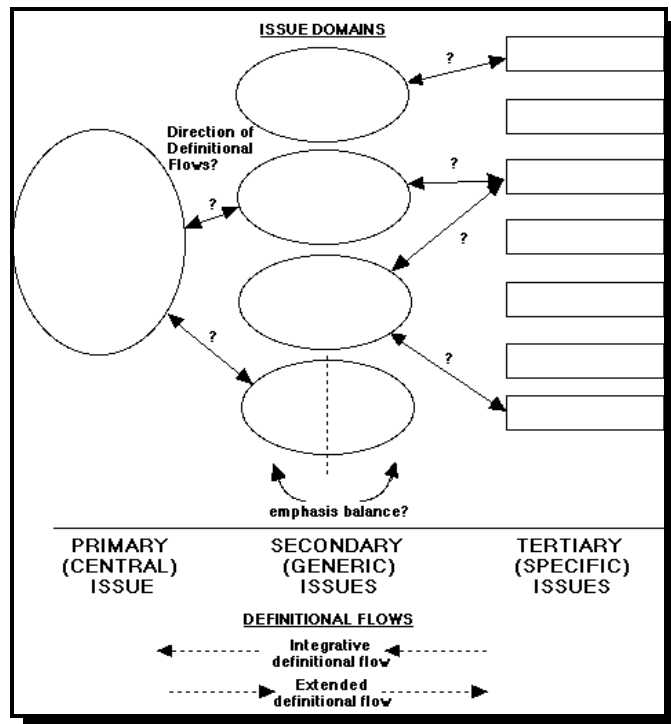


Figure 1: Issue Set Analysis Template

performance areas were competition, financial, operations, and regulation, with all tertiary issues then being defined as concerns related to one or more of these categories.

Yet when moving from firm-oriented issue categories to examine the tertiary issues comprising the substance of this organization's issue domains, individual tertiary issues representing disparate stakeholder concerns did not always correspond with firm-defined perspectives.

In many instances the contrary held true. Specific external stakeholder interests were often classified by firm managers simply as subsets of the primary issue of performance, rather than as stakeholder concerns not necessarily linked directly to firm aims. While these stakeholder-defined issues then appear within the organization's issue set, they are "de-coupled" from the firm's defined central issue. The consequence of this condition is that stakeholder/customer issues, which should be central to the operations of the firm, risk relegation to a minor role where they can influence the firm's mission (or be influenced by it) only if and when they are recognized as elements of a "coupled" issue domain.

### LINKING DEFINITIONS TO ENTREPRENEURIAL STRATEGIES

A deeper understanding of how managers define issues, as seen in the preceding examination, carries far-ranging implications for effective business practices. A short example using a problem common to many emerging firms — identification of an appropriate customer/market segment for a product or service — can help to highlight the use of the issue set template in revealing potential strategic pitfalls and possibilities. For the entrepreneur, the natural starting point for this analysis might appear to be "what are the characteristics of the marketplace." But the critical starting point for other stakeholders is often "what are the characteristics of the product or service." Each of these provide a vastly different set of issues for the development of entrepreneurial strategies. Characteristics of the marketplace include specific issues such as income levels, price sensitivity, customer demands, product applicability to needs, environmental concerns, and distribution requirements. For external stakeholders, important specific concerns may include environmental concerns, affordability, dependability, and safety. These specific concerns can then be classified as

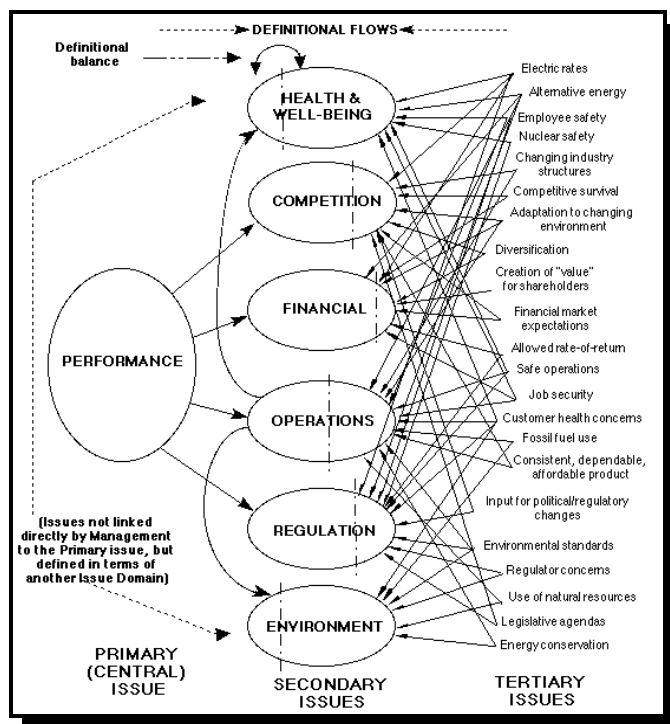


Figure 2: an Industrial Firm's Issue Set

Each of these provide a vastly different set of issues for the development of entrepreneurial strategies. Characteristics of the marketplace include specific issues such as income levels, price sensitivity, customer demands, product applicability to needs, environmental concerns, and distribution requirements. For external stakeholders, important specific concerns may include environmental concerns, affordability, dependability, and safety. These specific concerns can then be classified as

generic issues (see Table 1), revealing potential areas of stakeholder-firm convergence or divergence.

Specific issue	Generic issue category
Income levels	Financial
Price sensitivity	Financial, Competitive
Customer demands	Competitive, Operational
Product applicability	Competitive, Operational, Liability
Environmental concerns (firm)	Financial, Operational, Regulatory
Distribution	Operational, Financial
Environmental concerns (external)	Environment, Financial
Affordability	Financial, Competitive
Dependability	Financial, Competitive
Safety	Health, Liability, Environment

While many other generic issue categories may arise in the analysis of this situation, this cursory examination points out a number of important elements. First, both the organization and external stakeholders hold a number of issue categories in common: financial, competitive, liability. However, the emphases within these categories differ — while "financial" aspects for the organization involve the profit potential of the situation, "financial" for external stakeholders involves personal costs and savings. While these two interpretations can potentially lead to conflict — for example, customer savings may lead to reduced profit potential — the balance of emphasis within this domain then plays an important role. Effective entrepreneurial approaches work to find a balance between these conflicting demands, so that both internal and external parties achieve satisfactory results.

A second noteworthy element is that some issues which share issue domains between stakeholders — environmental concerns, for example — also contain an issue category held by only one party. A failure to recognize this imbalance will inevitably lead to stakeholder-firm conflict, as environmental concerns become defined solely as operational or financial concerns for one stakeholder, while another holds the environment as a separate concern with its own specific set of values. The recognition of differing issue emphases affords the entrepreneur with the opportunity to use shared definitional domains on the same concern to achieve consensus with external stakeholders.

A final element of interest is the implications this process of defining specific and generic issues holds for the recognition of the central issue for the entrepreneur. If "profit" is the central issue, and the definition of all issues facing the business concern exhibit an "extended definitional flow" with all other issues being framed in this light, the potential for achieving the consensus needed on issue domains diminishes. Likewise, if the central issue is defined only by an "integrative" trend, elements essential to the very survival of the emerging firm — such as profit margins and distribution channels — may be overwhelmed by competing stakeholder concerns. To effectively manage issues in the environment,



entrepreneurs must combine both integrative and extended approaches in both defining their primary issue (or goal) and in balancing internal and external stakeholder demands. Failure to do so can lead to situations where "doing the right thing can be risky business" (Murphy, 1994, 47).

### MANAGERIAL IMPLICATIONS

Accurate analysis of the environment, and alignment of organizational priorities with environmental conditions, is essential to the implementation of successful business practices. Entrepreneurs "first must know their target markets. Who are the firm's customers? What is the demographic makeup of the target market and how is it changing? Perhaps most important, what are the customer preferences and needs and how will these be changing in the future?" (Fry and Stoner, 1995, 83). A good starting point is an understanding of what the organization internally thinks is important, for these issue definitions embody the presumptions and competencies of the firm and its managers. If not questioned, this combination of firm abilities and skills delivery, framed within organizational perspectives, can lead to issues being defined not on the basis of their underlying qualities and conditions, but rather on the basis of organizational concerns which reveal only the organization's underlying assumptions.

All of these efforts towards developing effective entrepreneurial strategies to address stakeholder/customer needs simply reflect the development of what Peter Drucker has called "knowledge workers," individuals who are able to adapt and align organizational issues with those of its external stakeholders: "To be sure, management, like any other work, has its own tools and its own techniques. But just as the essence of medicine is not urinalysis (important though that is), the essence of management is not techniques and procedures. The essence of management is to make knowledge productive" (Drucker, 1994, 72). If academics and practitioners hope to assist in the development of successful and responsible entrepreneurial practices, they must develop insights into the alignment of firm and stakeholder concerns. In a changing environment, a recognition of the internal processes and assumptions involved in managerial issue definition can provide managers with an effective, practical mechanism for recognizing and addressing external stakeholder/customer issues. A detailed understanding of how managers define and shape issues can thus assist in the development and coordination of processes which not only clarify our understanding of the marketplace, but also provide insights for the development of realistic and responsible business strategies.

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# INTRAPRENEURSHIP AND INNOVATION IN MANUFACTURING FIRMS: AN EMPIRICAL STUDY OF PERFORMANCE IMPLICATIONS

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## ABSTRACT

*Entrepreneurship has long been associated with small businesses and new ventures (Carland, Hoy, Boulton & Carland, 1984). The idea of an individual identifying an untapped market niche or inventing a new product goes hand in hand with the traditional perspective. However, in recent years, entrepreneurship researchers have increasingly recognized that entrepreneurial activity can and does take place in large businesses (de Chambeau & Mackenzie, 1986; Adams, Wortman & Spann, 1988; Ellis & Taylor, 1988; Morris, Avila & Allen, 1993). Given that intrapreneurship exists within large, established firms, how does it manifest itself? What is intrapreneurship and what effect does it have on a firm's performance? This paper represents an effort to investigate intrapreneurship and its linkage to financial performance.*

*This research examined the performance implications of high levels of intrapreneurship. The respondents in this study whose firms exhibited high intrapreneurial intensity outperformed those respondents whose firms exhibited low intrapreneurial intensity. Extrapolation of the results to other populations is limited due to the high technology sector under examination and the limited sample size of the data base. Nevertheless, the results of this study support intrapreneurship as a valid focus for research and as a desirable strategy for implementation.*

## INTRODUCTION

Entrepreneurship has long been associated with small businesses and new ventures (Carland, Hoy, Boulton & Carland, 1984). The idea of an individual identifying an untapped market niche or inventing a new product goes hand in hand with the traditional perspective. In fact, Stevenson, Roberts and Grousbeck (1989) define entrepreneurship as a process of creating value by employing a unique set of resources to exploit an opportunity. However, in recent years, entrepreneurship researchers have increasingly recognized that entrepreneurial activity can and does take place in large businesses (de Chambeau & Mackenzie, 1986; Adams, Wortman & Spann, 1988; Ellis & Taylor, 1988; Morris, Avila & Allen, 1993). Brandt (1986) presents the position that the entrepreneurial process has applicability to organizations of all sizes. In the large firm setting, the term generally used is intrapreneurship and an intrapreneur is defined by Pinchot (1985) as "Those who take the hands-on responsibility for creating innovation of any kind within an organization" (p. ix).

In the small business setting, entrepreneurship is almost universally taken as a positive, beneficial phenomenon (Carland & Carland, 1993). It is intricately linked with innovation (Carland, et. al., 1984). Due to its rich background in the small business arena, the authors were interested in exploring the impact of entrepreneurship within the corporate setting. Given that intrapreneurship exists within large, established firms, how does it manifest itself? What is intrapreneurship and what effect does it have on a firm's performance? This paper represents an effort to investigate intrapreneurship and its linkage to financial performance.

### INTRAPRENEURSHIP

The various definitions of intrapreneurship appearing in the literature are remarkably similar. De Chambeau & Mackenzie (1986) say that "Intrapreneurial activity ranges from the development of a new product to the creation of a more cost-efficient process (p. 45)." Jennings and Young (1990) define corporate entrepreneurship as the process of developing new products and/or markets. Hornsby, Montagno and Kuratko (1990) describe intrapreneurship as a means to increase corporate success through the creation of new corporate ventures. McGrath, Venkataraman, MacMillan and Boulind (1992) describe corporate entrepreneurship as a means for firms to change their pool of competencies to increase long term economic viability. Hornsby, Naffziger, Kuratko and Montagno (1993) refer to the development of new business endeavors within the corporate framework. Note that the intrapreneurial perspective is similar to the entrepreneurial in terms of its focus on innovation. In fact, the corporate entrepreneurial construct has three accepted dimensions in the literature (Morris, Avila & Allen, 1993). These include innovativeness, development of novel products, services, or processes; risk-taking; and proactiveness (Covin & Slevin, 1989; Ginsberg, 1985; Jennings & Young, 1990; Khandwalla, 1977; Miles & Arnold, 1991; Miller & Friesen, 1983). All of the definitions of intrapreneurship have been highly consistent (Cornwall & Hartman, 1988). Zahra (1986) examined the antecedents of corporate entrepreneurship and found that most people see it as being innovative activities within a firm.

### EMPHASIS ON INNOVATION

Most researchers clearly see creativity and/or innovation as the focus of intrapreneurial activities. Intrapreneurs are innovators and idea generators. The outcomes of these innovations range from new products to new markets to new processes. However, Knight (1967) identifies new product/service innovations as the highest level results of intrapreneurial actions (Cornwall & Hartman, 1988). Jennings and Young (1990) defined intrapreneurship "as the process of developing new products and new markets" (p. 55). Morris, Pitt, Davis and Allen (1992) used the number of new products, services, and processes introduced by or within a firm to measure the frequency of entrepreneurship. Jennings and Young (1990) used Miller and Friesen's (1983) procedure to obtain a subjective measure of intrapreneurship. Jennings and Young (1990) gave CEOs a three question survey, which "focused on innovative activities

with respect to the addition of new products" (p. 57). Clearly, the linkage between new product development and intrapreneurship is well established. Therefore, this research will focus only on the product innovation aspect of intrapreneurship.

### THE PERFORMANCE LINKAGE

Several researchers have found links between performance and the presence of intrapreneurship. For example, Morris, Lewis and Sexton (1993) discovered higher performance in large firms with a high level of entrepreneurial intensity. Gough (1993) showed that firms with a high level of in-house innovation outperformed firms who pursued opportunities through joint ventures or acquisitions. Bailey (1992) found that Australian efforts to encourage and develop intrapreneurship in large firms resulted in significant profits. Kramer and Venkataraman (1993) discussed rapid, sustained growth as being a characteristic of entrepreneurial enterprises. In fact, there is considerable literature devoted to the tacit or explicit idea that identifying and fostering intrapreneurship within a large firm is justified precisely because the intrapreneurs will develop new products and ideas which will ultimately improve the firm's performance (i.e., Pinchot, 1985; de Chambeau & Mackenzie, 1986; Ellis & Taylor, 1988; Adams, Wortman & Spann, 1988; Cornwall & Hartman, 1988). Given the high level of agreement that intrapreneurial activity should lead to higher long term performance, the stage is set for an empirical assessment.

### RESEARCH METHODOLOGY

The literature suggests that firms which emphasize intrapreneurship should have higher performance levels. The authors tested that relationship empirically. The research proceeded by establishing a hypothesis, preparing a survey and collecting data, partitioning the data set, and testing the hypothesis. The hypothesis examined in this study is as follows:

*There is no difference in performance between firms which emphasize, and firms which do not emphasize, high levels of intrapreneurship through innovation.*

A questionnaire was developed and pilot tested by seven executives in the Atlanta area. To improve response rate, the investigation was conducted using the Dillman (1978) methodology. To ensure maximum homogeneity among the firms to be investigated, the authors identified firms in the Standard Industrial Codes (SIC) 35 and 36: electronic, computer and computer-related manufacturing firms. Three criteria were used to select firms for inclusion in the study: annual net sales of at least \$1 million, more than 15 employees, and products sold predominately to external customers. Using the Compac Disclosure database, 807 firms were identified as potential candidates. Telephone contacts resulted in eliminating 183 firms, producing a mail sample of 624 firms.

Of the 624 instruments which were mailed, 317 partially or fully completed questionnaires were returned, 304 of which were usable, for a net response rate of 49.03%. However, only 260 of the 304 firms sold their products predominately to external customers. All respondents were members of the upper levels of management in their firms, implying knowledge of overall firm performance.

The final sample contained firms in 39 states. A Chi-Square test was utilized to test for possible regional bias between the original sample of 807 firms and the usable sample of 260 firms across the eight U.S. Census regions. There was no evidence of regional bias in the usable sample compared to the original sample.

Ideally, the distribution of SIC codes within the usable responses would be similar to the distribution in the larger population. The distribution of firms in the 3500 and 3600 SIC codes were compared with Chi-Square goodness of fit tests. Employing an alpha level of .05, all computed test statistics were less than the critical value, implying that the sample is generally representative of the larger population.

Another issue of sample representation is the extent to which the respondents to the survey differ from the non-respondents. A test for non-response bias was conducted. First, profiles of the responding firms were developed. Variables which were reasonably stable and exhibited little variance across the sample were identified to establish a "norm" against which non-respondents could be compared. Six variables were identified as having a variance of 1.0 or less.

Fifteen weeks after the final follow-up mailing of the questionnaire, 25 non-respondents were contacted by telephone, and requested to verbally respond to the short list of norm variables. For each of the six norm variables, the mean for all respondents (N=304) was compared to the mean for the non-respondents (N=25) at alpha value of .05. For each of the six comparisons, the test statistic was less than the Z critical value, indicating that the sample contains little response bias.

A major concern is the extent to which the instrument results in reliable measures. Churchill (1979) provides a model for developing constructs. As a first measure of reliability, Churchill suggests the use of coefficient alpha to assess the quality of the instrument. Coefficient alpha (Cronbach, 1951) for the variables was found to be .87, a reasonable level of acceptance for the group of variables (Nunnally, 1978).

Reliability was also examined using a sample of survey respondents. Eight weeks after the final reminder letter was mailed, 100 firms were randomly selected from the responding firms. Another copy of the questionnaire was mailed to those firms, addressed to the attention of the contact person who originally completed the questionnaire. The enclosed cover letter requested that the additional questionnaire be passed to another production executive, ideally an executive equally familiar with the processes, for completion. Forty-nine of the questionnaires were returned, 37 of which were complete. Respondents from each plant were paired, and the correlations between responses on each variable were computed. Correlations between first and second respondents ranged from .10 to .77, averaged .32, and 19 of the 37 pairs were significant at an alpha level of .05 or less. Overall, the results suggest that data reliability is high.

As an indicator of intrapreneurial intensity, the researchers will employ new product introductions. The literature supports a postulate of a higher volume of new product introductions representing a greater intensity of intrapreneurship. Consequently, the researchers will employ volume of product introductions as a means to partition a database of firms.

The natural issue following the basis for database partitioning is how does one measure the volume of new product introductions? Given that all new products are not equal and that volume must be considered relative to an industry and a set of competitors, the question is not trivial. There is a considerable body of literature supporting the use of subjective measures (Jennings & Young, 1990). Recognizing the reality of scientific inquiry, Huber and Power (1985) defend the use of subjective evaluation from top managers. Dess and Robinson (1984) found that subjective measures of certain financial measures correlated significantly with their objective counterparts. In fact, Dess and Robinson (1984) suggest that such subjective measures could be used when objective indicators are unavailable, although their position is not without detractors (Sapienza, Smith & Gannon, 1988). Smith, Gannon and Sapienza (1989) examined the advantages and disadvantages of objective versus subjective measures and concluded that both types of data can enrich a study. Swamidass and Newell (1987) actually used subjective performance measures in a study of manufacturing strategy. Downey and Ireland (1979) suggest that the objective-subjective categorization has had dysfunctional effects on organization research in that it has tended to push research away from qualitative data that might be useful for assessing certain dimensions. They remind the scientific community that objectivity in scientific research refers to objectivity on the part of the researcher and they conclude that subjective behavior on the part of the subjects of scientific inquiry may well be a legitimate topic for study (Downey & Ireland, 1979).

The authors conclude that a subjective measure by top managers of the volume of new product introductions relative to their competitors is a legitimate measure. Accordingly, the methodology of this study involves obtaining such assessments and employing them as the basis for partitioning the database.

Accordingly, the survey instrument asked executives to evaluate the perceived importance given by management to product innovation and new product introduction within the firm. Respondents ranked the perceived importance on a seven point Likert scale.

For all respondents, the average ranking of perceived importance of product introduction is 5.1, on the seven point Likert scale. The authors employed the polar extreme approach to data partitioning (Hair, Anderson, Tatham, & Gradlowsky, 1979). Respondents with a ranking of 6 or 7 were assigned to the group classified as having a high emphasis on product introduction. Respondents with a ranking of 4 or below were classified as having a low emphasis on product introduction.

Of the 260 respondents, 135 were classified as having a high emphasis on product introduction, 88 were classified as having a low emphasis on product introduction, and 37 were excluded from further analysis. Accordingly, the data partitioning produced 135 firms deemed to have high intrapreneurial intensity and 88 firms which exhibit low intrapreneurial intensity.

As is the case with new product development, obtaining a measure of financial performance is difficult. The issue of interest is not an absolute measure, rather the question is whether firms exhibit performance which is superior to their competitors. Following the reasoning outlined above, the authors determined to use subjective measures by top managers of various types of performance. Accordingly, respondents were asked to rank their firm's performance relative to competitors on a seven point Likert scale. Rankings were requested for on-time delivery, sales growth, product durability, product reliability, profitability, profit growth from the previous year, labor productivity, market share, return on sales, return on investment, and return on assets.

### DATA ANALYSIS AND RESULTS

In the first stage of analysis a vector of means was prepared for each of the two groups. The vector was composed of an indicator of average emphasis for each of the eleven performance variables (SAS Institute, 1989). Four criterion tests, Wilk's, Hotelling, Roy's Maximum Root, and Pillai's Trace, were used to test for significant differences between the vectors (SAS Institute, 1989). In each case the most restrictive test of the four criteria was employed as the basis for comparison. On each of the four tests, the performance vectors were significantly different at a probability level of .01 or less.

In the second stage of investigation, Analysis of Variance (ANOVA) was used to test for differences within the two groups. Table 1 shows the results of the ANOVA. Six performance variables were significantly different between high and low intrapreneurial intensity groups: on-time delivery, sales growth, profit margin, earnings growth from the previous year, market share, and return on sales.

The final stage of analysis examined the relative performance measures between the two groups. Relative performance is a measure of how well each performance variable compares, quantitatively, between each of the two groups of respondents (SAS Institute, 1989). Where performance means were significantly different at  $\alpha < .05$ , means were compared using the Duncan Multiple Stage Test (SAS Institute, 1989). Results are shown in Table 2. Means that were not significantly different at  $\alpha < .05$  are indicated as NS for not significant. As the table shows, the respondents identified as displaying high intrapreneurial intensity exhibited higher levels of performance on 6 performance variables: on-time delivery, sales growth, profit margin, earnings growth from the previous year, market share, and return on sales.



Performance Variable	Source	Df	F	P
On Time Delivery	Intrapreneurship	1	8.35	.0042
	Error	221		
Sales Growth	Intrapreneurship	1	5.90	.0159
	Error	221		
Durability	Intrapreneurship	1	.28	.5951
	Error	221		
Reliability	Intrapreneurship	1	.56	.4569
	Error	221		
Profitability	Intrapreneurship	1	4.79	.0296
	Error	221		
Profit Growth	Intrapreneurship	1	6.63	.0107
	Error	221		
Labor Productivity	Intrapreneurship	1	.81	.3701
	Error	221		
Market Share	Intrapreneurship	1	5.31	.0222
	Error	221		
Return on Sales	Intrapreneurship	1	4.43	.0364
	Error	221		
Return on Invest	Intrapreneurship	1	1.52	.2183
	Error	221		
Return on Assets	Intrapreneurship	1	.98	.3222
	Error	221		

Performance Variable	High Intensity (N=135)	Low Intensity (N=88)	Duncan's Test
On Time Delivery	5.7	5.2	P<.05
Sales Growth	4.5	3.9	P<.05
Durability	5.8	5.7	NS
Reliability	5.9	5.8	NS
Profitability	4.6	4.2	P<.05
Profit Growth	4.3	3.8	P<.05
Labor Productivity	4.8	4.7	NS
Market Share	4.8	4.3	P<.05
Return on Sales	4.5	4.0	P<.05
Return on Investment	4.5	4.3	NS
Return on Assets	4.5	4.3	NS

The results of the empirical analysis demonstrated that for six of the eleven performance measures considered, firms which emphasize high levels of intrapreneurship, evidenced through their emphasis on product introduction, outperform firms that do not emphasize intrapreneurship. Consequently, the authors reject the research hypothesis.

### CONCLUSIONS AND IMPLICATIONS OF THE FINDINGS

This research examined the performance implications of high levels of intrapreneurship. The respondents in this study whose firms exhibited high intrapreneurial intensity outperformed those respondents whose firms exhibited low intrapreneurial intensity. Extrapolation of the results to other populations is limited due to the high technology sector under examination and the limited sample size of the data base. Nevertheless, the results of this study support intrapreneurship as a valid focus for research and as a desirable strategy for implementation.

This study advances the search for determinants of competitive advantage and performance improvements in high-tech manufacturing. Future research could extend these results by including other likely variables influencing how firms can be more entrepreneurial. Additionally, it would be useful to extend this study into other industries to examine the impact of intrapreneurial intensity on the broader spectrum of business.

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