Volume 13, Number 2 **ISSN 1087-9595**

ACADEMY OF ENTREPRENEURSHIP JOURNAL

An official Journal of the

Academy of Entrepreneurship ®, Inc.

JoAnn C. Carland, Editor
Carland Academy

Academy Information
is published on the Allied Academies web page
www.alliedacademies.org

The *Academy of Entrepreneurship Journal* is owned and published by the DreamCatchers Group, LLC, and printed by Whitney Press, Inc.

Whitney Press, Inc.

Printed by Whitney Press, Inc.
PO Box 1064, Cullowhee, NC 28723
www.whitneypress.com

Authors provide the Academy with a publication permission agreement. Neither the Academy of Entrepreneurship nor the DreamCatchers Group, LLC is responsible for the content of the individual manuscripts. Any omissions or errors are the sole responsibility of the individual authors. The Editorial Board is responsible for the selection of manuscripts for publication from among those submitted for consideration. The Editors accept final manuscripts in digital form and the Publishers make adjustments solely for the purposes of pagination and organization.

The *Academy of Entrepreneurship Journal* is owned and published by the DreamCatchers Group, LLC, PO Box 2689, 145 Travis Road, Cullowhee, NC 28723, USA, (828) 293-9151, FAX (828) 293-9407. Those interested in subscribing to the *Journal*, advertising in the *Journal*, or otherwise communicating with the *Journal*, should contact the Executive Director of Allied Academies at info@alliedacademies.org.

ACADEMY OF ENTREPRENEURSHIP JOURNAL
EDITORIAL BOARD MEMBERS

ACADEMY OF ENTREPRENEURSHIP JOURNAL
EDITORIAL BOARD MEMBERS

ACADEMY OF ENTREPRENEURSHIP JOURNAL

TABLE OF CONTENTS

LETTER FROM THE EDITOR

We are extremely pleased to present the *Academy of Entrepreneurship Journal*, an official journal of the Academy of Entrepreneurship, Inc. The *AEJ* is owned and published by the DreamCathcers Group, LLC. Its editorial mission is to advance the knowledge, understanding, and teaching of entrepreneurship throughout the world. To that end, the journal publishes high quality, theoretical and empirical manuscripts, which advance the entrepreneurship discipline.

The manuscripts contained in this volume have been double blind refereed. The acceptance rate for manuscripts in this issue, 25%, conforms to our editorial policies.

As editors, we intend to foster a supportive, mentoring effort on the part of the referees which will result in encouraging and supporting writers. 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.

The Editorial Policy, background and history of the organization, and calls for conferences are published on our web site. In addition, we keep the web site updated with the latest activities of the organization. Please visit our site and know that we welcome hearing from you at any time, so feel free to contact us at the address below.

JoAnn C. Carland, Editor
Carland Academy

www.alliedacademies.org

MANUSCRIPTS

EVALUATING THE DIRECT AND INDIRECT IMPACT OF TRAITS AND PERCEPTIONS ON TECHNOLOGY ADOPTION BY WOMEN ENTREPRENEURS IN MALAYSIA

Nelson Oly Ndubisi, Monash University, Malaysia

ABSTRACT

The current research adopts the technology acceptance model (TAM) in examining the relationship between IT adoption, perceived system's ease of use, and the entrepreneurial traits (such as, innovativeness, risk-taking propensity, perseverance, and flexibility) of Malaysia women entrepreneurs. The results show that perceived ease of use has an indirect influence (via perceived usefulness) on adoption. Contrary to TAM, no significant direct relationship was found between perceived ease of use and adoption. Innovativeness and risk-taking propensity were found to determine perceived ease of use and adoption. The findings show that women entrepreneurs are driven by instrumentality in technology adoption. Contrary to the process orientation reported in previous studies for women in general, women entrepreneurs are outcome oriented in technology adoption. Important implications on theory and practice are discussed.

INTRODUCTION

While advances in technology continue with rapidity, the use of these upcoming technologies has fallen below expectations (Ndubisi, Gupta & Massoud, 2003; Johansen & Swigart, 1996; Wiener, 1993; Moore, 1991) and has been identified as one of the plausible explanations for the productivity paradox (Sichel, 1997; Landauer, 1995). A number of studies have shown that successful investment in technology can reap immense benefits for the adopting individuals and organisations (Doms et al 2003; Gretton et al. 2002; Bennett et al. 2003). On the basis of these benefits, various governments have been motivating their business communities particularly entrepreneurs, to avail themselves of the benefits of these technological advances. Despite these significant technological advances and increasing governmental investments in promoting IT usage at individual and organizational levels, it is still unclear, the extent of IT usage among women entrepreneurs, the determinants of usage, and the role of personal traits. Clearly, understanding the determinant structure of these key variables is critical for researchers, entrepreneurs, as well as systems developers and vendors targeting entrepreneurs.

The focus of this research on women entrepreneurs reflects the growing number and importance of women owned businesses (Michaels 2006) around the globe. Michaels (2006) reported that the number of women-owned businesses in the US grew at twice the rate of all firms between 1997 and 2002, jumping 14 percent to 6.2 million. Cowling and Taylor (2001) reported that proportionately, three times as many male self-employed in 1991 had gone on to become job creating self-employed by 1995. The research is precipitated by the fact that entrepreneurs (especially women) are a distinct and important group, which unfortunately has not received well-deserved research attention in Malaysia. Moreover, entrepreneurs have been reported in personality and psychological research as exhibiting unique traits that distinguish them from other user groups, which traits could have different implications on their usefulness and ease of use perceptions and adoption of computer technologies.

In this study, perceived ease of use is investigated to understand its determinants (namely users' traits), and its impact on adoption of computer technologies by women entrepreneurs. Studies comparing the salience of perceived usefulness and ease of use between male and female users of technology have shown that perceived usefulness is more important for male users while female users emphasize ease of use in technology usage decisions. For example, Venkatesh et al., (2000) reported higher instrumentality (i.e. outcome) for men and higher process orientation (ease of use/difficulty) for women in technology adoption decisions. Hennig and Jardim (1977), Rotter and Portugal (1969) have earlier shown that women tend to focus on the methods used to accomplish a task – suggesting a greater process orientation. Given the process-orientation of women, it is the aim of this study to examine the preponderance of ease of use over usefulness with respect to computer technology adoption by women entrepreneurs.

LITERATURE REVIEW

A number of models have been developed to investigate and understand the factors affecting the acceptance of computer technology in organisations such as the Theory of Reasoned Action - TRA (e.g. Fishbein & Ajzen 1975; Ajzen & Fishbein 1980), the Technology Acceptance Model – TAM (e.g. Davis 1989; Davis et al., 1989), the Theory of Planned Behaviour – TPB (e.g. Ajzen 1991; Mathieson 1991), the Model of PC Utilisation (Thompson, Higgins, & Howell 1991), the Decomposed Theory of Planned Behaviour (e.g. Taylor & Todd 1995a), Innovation Diffusion Theory (e.g. Agarwal & Prasad, 1997; Brancheau & Wetherbe, 1990; Rogers, 1995), and recently The Entrepreneurs' Technology Acceptance Model (Ndubisi & Richardson, 2002). Some of these studies were carried out at the individual level (e.g. Agarwal & Prasad, 1998), and some at the organisational level (e.g. Cooper & Zmud, 1990).

The theoretical model employed in this research is the technology acceptance model (TAM). The study focuses on the TAM because it helps to understand the role of perceptions such as usefulness and ease of use in determining technology adoption. TAM theorises that external

variables influence behavioural intention to use, and actual usage of technologies, indirectly through their influence on perceived usefulness and perceived ease of use. Davis (1989, p320), defines perceived usefulness as "the degree to which a person believes that using a particular system would enhance his or her productivity", and perceived ease of use as "the degree to which a person believes that using a particular system would be free of effort". Although TAM has been recognized for its parsimony and predictive power, it has also been reported that while parsimony is TAM's strength, it is also the models salient constraint. Venkatesh (2000) asserts that while TAM is very powerful in helping to predict acceptance, it does not help understand and explain acceptance in ways that guide development beyond suggesting that system characteristics impact usefulness and ease of use, thereby placing a limitation on the ability to meaningfully design interventions to promote acceptance. Mathieson (1991) believes that TAM is predictive but its generality does not provide sufficient understanding from the standpoint of providing system designers with the information necessary to create user acceptance of new systems. Furthermore, there has been some concern about the predictive ability of TAM. Straub et al. (1995) questioned intention as a predictor of actual behaviour. Bentler and Speckart (1979), and Songer-Nocks, (1976) earlier disagreed with Fishbein and Ajzen's assertion (on which TAM is based) that attitudes and norms can influence behaviour only indirectly through behavioural intention. Nevertheless, TAM researchers have called for future research using actual usage instead of usage intention to test the TAM. Present research has towed this line of suggestion by investigating actual or current usage as the dependent variable.

Two important TAM constructs are perceived usefulness and perceived ease of use. Perceived usefulness is defined as the extent to which a person believes that using a particular technology will enhance her/his job performance, while Perceived ease of use is the degree to which using IT is free of effort for the user (Davis 1989). A significant body of TAM studies has shown that perceived usefulness and perceived ease of use are determinants of usage (e.g. Davis 1989; Mathieson 1991; Adams et al. 1992; Segars & Groover 1993; Szajna 1994; Igbaria et al. 1997). Technology adoption decisions have been typically characterised by a strong productivity orientation (Venkatesh and Brown, 2001). In many studies (e.g. Mathieson 1991; Agarwal and Prasad 1997; Igbaria et al. 1997), perceived usefulness, one of the constructs related to the use-productivity contingency has emerged as one of the strongest predictors of adoption and usage behaviour. Some past studies have claimed that perceived usefulness is more important to male users, while perceived ease of use is more salient for female. It is germane therefore to see if this process orientation of women in general also applies to women entrepreneurs, given the latter's unique personal traits.

Women and IT Usage Decisions

Research has shown that women exhibit more "feminine" traits (e.g. tenderness) (Bem, 1981), which distinguishes them from other user groups. The meta-analysis of Taylor and Hall

(1982) suggested that these feminine traits correlate with "expressive" behaviors. There is substantial evidence in organizational behavior and management information systems research (e.g. Davis, 1989; Davis et al., 1989; Mathieson, 1991; Tailor & Todd, 1995) suggesting that the key underlying cognition determining an individual's attitude toward the behavior of adopting and using a new technology in the workplace is her/his perceptions about the usefulness of the technology. Specifically, the link between usefulness perceptions and attitude toward using a new technology has been shown to have path coefficients ranging from .50 (Davis et al., 1989) to .79 (Taylor & Todd, 1995). Given these strong results, it could be concluded that an individual's attitude toward using a technology in the workplace reflects instrumentality and intrinsic motivation to use technology. Venkatesh et al., (2000) reported higher instrumentality (i.e. outcome) for men and higher process orientation (ease of use/difficulty) for women as determinants of technology adoption. Their finding supports the notion of earlier research (such as Hennig & Jardim, 1977; Rotter & Portugal, 1969) that women tend to focus on the methods used to accomplish a task – suggesting a greater process orientation. Given the process-orientation of women and the lower levels of control (see Mirowsky & Ross, 1990) generally perceived by women in the work environment, the perceived ease of use or difficulty of using technology is expected to have an important influence over their decisions to adopt or reject a new technology (Venkatesh et al., 2000). Further, there is evidence to suggest that women display somewhat higher levels of computer anxiety (Bozionelos, 1996; Morrow, et al., 1986) and lower computer aptitude (Guriting et al. 2007). Both computer anxiety and computer aptitude have been related to perceptions of effort, thus suggesting that constraints to technology use (perceived difficulty) will be more salient to women. It is implicit therefore, that ease of use is more important than usefulness to women in technology adoption and usage if women are more interested in process than outcome. However, a body of research (DeCarlo & Lyons, 1979; Hornaday & Aboud, 1971) has shown that entrepreneurs have high need of achievement. Because of the achievement needs of entrepreneurs and other entrepreneur's traits, it is expected that women entrepreneurs will be influenced by instrumentality in decision-making processes about a new system. It is expected that the traits of women entrepreneurs may play a determinant role in their perceptions of systems' usefulness and ease of use, and adoption.

Entrepreneurial Traits

The traits suggested by previous empirical research which describe entrepreneurs are: (1) high need for achievement (Decarlo & Lyons, 1979; Hornaday & Aboud, 1971; among many others); (2) internal locus of control (Hornaday & Aboud, 1971; Miller, 1983); (3) high need for independence and effective leadership (DeCarlo & Lyons, 1979; Hornaday & Aboud, 1971); (4) high need for autonomy (DeCarlo & Lyons, 1979; Sexton & Bowman, 1983, 1984); (5) information processing capability (McGaffey & Christy, 1975); (6) preference for moderate level of risks

(McBer & Co., 1986); (7) low conformity (DeCarlo & Lyons, 1979; Sexton & Bowman, 1983, 1984); (8) aggression, support, and benevolence (DeCarlo & Lyons, 1979); (9) energy level, risk-taking, and change (Sexton & Bowman, 1983, 1984); (10) dominance, endurance, innovation, self-esteem, low anxiety level, and cognitive structure (Sexton & Bowman 1983); and (11) low interpersonal effect, social adroitness, low harm avoidance, and low succorance (Sexton and Bowman, 1984).

Lee (1996) used the Need Theory as a theoretical framework to study the motivation of women entrepreneurs. She hypothesized that business ownership is a manifestation of four needs - achievement; affiliation; autonomy; and dominance. The research concluded that women entrepreneurs are motivated by a high need for achievement, a slightly high need for dominance and moderate needs for affiliation and autonomy. Finds women entrepreneurs demonstrate a higher need for achievement and dominance than women employees but significant difference in the needs for affiliation and autonomy.

Earlier, Yonekura (1984) in the discussion paper on "Entrepreneurship and Innovative Behaviour of Kawasaki Steel" suggested the following traits: assertiveness, insistence, forward-looking, critical thinking, creativity, innovation, continuity, preparedness, responsibility, open-mindedness, etc. Burch (1986) mentioned nine salient traits, which dictated a high propensity for one to behave entrepreneurially. They are: a desire to achieve, hard work, nurturing quality, able to accept responsibilities, reward oriented, optimistic, excellence-oriented, an organiser, and money oriented. These traits influence one's self-efficacy which Ajzen in his Theory of Planned Behaviour believes to influence intention and usage behaviours. Table 1 is a summary of some of the traits reported in prior studies.

Table 1: Entrepreneurial Traits Reported in Previous Research

Entrepreneurial Traits	Author	Comment
High need for achievement	Decarlo & Lyons (1979); Hornaday & Aboud (1971); Burch (1986); Jacobson (1993); Wells (1994)	Albeit, there is reasonable evidence favouring this trait, it is not one of the most common ones.
Internal locus of control	Hornaday & Aboud (1971); Miller (1983)	More evidence is needed to support this trait, hence it was not included in the present study.
High need for independence/autonomy/low succorance and effective leadership	Decarlo & Lyons (1979); Hornaday & Aboud (1971); Sexton & Bowman (1983;1984)	This trait also does not represent the more common traits of entrepreneurs as the Table shows.
Information processing capability	McGaffey & Christy (1975); Yonekura (1984);	More evidence is needed to support this trait, hence it was not included in the present study.

Table 1: Entrepreneurial Traits Reported in Previous Research		
Entrepreneurial Traits	Author	Comment
Risk taking, low harm avoidance	McClelland (1961); Ansoff (1972); Sexton & Bowman (1983; 1984); McBer & Co. (1986); Jantan et al. (2001)	Some of the authors argued for high risk-taking propensity, others favour only a moderate risk, yet others say entrepreneurs only take calculated risks.
Innovativeness or Low conformity	McClelland (1961); Decarlo & Lyons (1979); Stevenson (1983); Sexton & Bowman (1983; 1984); Yonekura (1984), McBer & Co (1986); Jacobson (1993); Harper (1996); Kitchel (1997); Schumpeter (2000); Jantan et al. (2001); Ndubisi & Richardson (2002).	This Table shows that innovativeness is one of the most common traits of entrepreneurs going by the number of authors listed.
Aggression, support, & benevolence	Decarlo & Lyons (1979); McBer & Co (1986)	More evidence is needed to support this trait, hence it was not included in the present study.
Flexibility or Change	Sexton & Bowman (1983; 1984); Kitchel (1997); Jantan et al. (2001); Ndubisi & Richardson (2002); Ndubisi & Jantan (2003); Jantan et al. (2001)	Flexibility has received much evidence as an entrepreneurial trait as did innovativeness, risk-taking and perseverance. Yet it is still attracting more research attention.
Perseverance/endurance, High energy level	McClelland (1961); Stevenson (1983); Sexton & Bowman (1983; 1984); Yonekura (1984); Burch (1986); McBer & Co (1986); Wells (1994); Henzel (1995); Kitchel (1997); Glick-Smith (1999); Jantan et al. (2001); Ndubisi & Jantan (2003)	Another common trait of entrepreneurs is perseverance. With innovativeness, risk-taking and flexibility, they form the set of most common entrepreneur traits. Hence, justifying their selection for the purpose of the current research.

From the review of literature it is observed that innovation, risk-taking propensity, perseverance, and flexibility are more common and consistently reported traits among entrepreneurs. These traits were studied further to explore their influence on perceived usefulness and perceived ease of use.

The entrepreneurial role has long been recognized as a prime source of innovation or creativity. For many entrepreneurs, the basic drive is creativity and innovation to build something out of nothing. They are always looking for something unique to fill a need or want. Thus the more innovative the entrepreneur is, the stronger and more positive her perceptions of the system's ease

of use will be, and in turn her IT usage, as she continues to experiment with new and better ways of solving needs.

Risk here refers to the uncertainty of outcomes of an organisations resource commitment. Entrepreneurs who have very high risk propensity are more likely to meddle with matters of uncertain outcomes; they are not too keen at enormous data collection before making decisions because of the short decision window confronting them therefore, technology adoption is likely to be faster. In the other hand more risk-averse adopters are likely to collect a lot of information that might help to make adoption outcomes more certain. This process is likely to slow down the speed and extent of adoption. It has been reported that organisational innovations result from, among other factors, risk taking in organisations. According to Nohria and Gulati (1997) and Singh (1986), innovation can often result from successful risk taking, hence, the high risk-taking entrepreneurs will perceive the system as easy to use.

Perseverance is the ability to continue doing something one believes in for an extended period, enduring difficulties, and finding a solution when facing a barrier. A CEO whose perseverance level is high keeps on working on achieving goals despite repeated failures (Kitchel, 1997). Thus, perceived usefulness, ease of use, and subsequently adoption of IT, will be greater in view of strong user perseverance.

More flexible entrepreneurs are likely to adapt more easily to rapid technological obsolescence. Depending on the frequency of technology replacement or upgrading need, the more flexible entrepreneurs may have a more rapid adoption. McCalman and Paton (1992) asserted that technological change due to its dynamic impact on existing system and also its threatening image can create many challenges for the change agent. While such challenges may deter less flexible users, more flexible entrepreneurs may even flow with technology fad, thereby making adoption a continuous exercise.

METHODOLOGY

Participants & Procedure

The population of study consists of women entrepreneurs that are members of the National Association of Women Entrepreneurs of Malaysia – (NAWEM). These are current IT users. The list of members of NAWEM was taken from the NAWEM Business Directory. Entrepreneurs were surveyed using structured questionnaire. All the one hundred and twenty-five members of NAWEM were contacted to participate in the survey. Each was sent a copy of the questionnaire, and seventy-four (59.2%) usable responses were received. Respondents are engaged in various activities, from manufacturing, to sales, education, interior decoration, fashion designing, etc. Seventy-three percent of the entrepreneurships have been established for over five years, 20.3% and 79.7% are respectively in the manufacturing and service sectors, 89.2% are employing less than one hundred staffs, and

84.6% are owner-managed. A total of 58.1% of the entrepreneurs are graduates, 43.2% are forty years or below while the rest are forty-one years or more. There are more Chinese (64.9%) than Malays (32.4%) and Indians (2.7%).

The design of the questionnaire basically takes the approach of that by Davis et al. (1989), which has been adapted by many other researchers (such as Venkatesh and Davis 1996, Igbaria et al. 1995; 1997; Ndubisi et al 2003), but in this study with modifications to capture the hypothesised effect of entrepreneurial traits. Part 1 measures the actual system usage with two indicators, the number of computer supported business tasks performed and the number of different software applications used. In line with International Coalition of Library Consortia (1998), the indicators used in enhancing the reliability of measuring the system usage in this study are specifically: (1) use of a wide variety of software packages in CBIS environment (e.g. spread sheet, word processing, graphic, data processing, etc); and (2) the number of business task performed using systems such as budgeting, planning, analysis and forecasting. Achieved reliability measure was Cronbach's Alpha 0.83. Parts 2 and 3 respectively measure perceived usefulness and perceived ease of use. Perceived usefulness indicators are improvement on job performance, increase in productivity, enhancement of job effectiveness, and system usefulness in the job. Indicators of perceived ease of use include; clear and understandable interaction with system, system compliance to commands, minimal mental effort in interacting with the system, finding the system easy to use. These indicators are similar to that used by Davis et al. (1989), Ndubisi and Richardson (2002) and their respective inter-item reliability achieved in this study are a = .90 for perceived usefulness and a = .88 for perceived ease of use. Part 4 measures the traits of the entrepreneur. Entrepreneurial traits in this study include innovativeness, risk-taking propensity, persistence/perseverance, and flexibility. Indicators measuring these entrepreneurial traits were adapted from Kitchel (1997) and Harper (1996). The measures are reliable with the following alpha values: innovativeness (.92), risk-taking propensity (.83), perseverance (.70), and flexibility (.82). Part 5 measures the demographic variable using single items such as: age, educational background and job function of the respondent, and the profile of the organisation such as primary business activity, period of establishment, and number of employees in the organisation, prior computer experience (Ndubisi et al 2003). For parts 2-4, respondents were asked to indicate the extent of agreement and disagreement on a five-point Likert scale ranging from (1) "strongly disagree to (5) "strongly agree".

RESULTS

There are no significant changes in the observed relationships based on demographic data. Greene at al. (2003) had earlier argued that research shows similarities in the personal demographics of entrepreneurs, but there are differences in business choices, financing strategies, growth patterns, and governance structures of female-led ventures. According to Greene, these differences (not demography) provide compelling reasons to study female entrepreneurship – looking specifically

at women founders, their ventures, and their entrepreneurial behaviours as a unique subset of entrepreneurship (Greene et al. 2003).

Table 2 summarises the demography of the respondents.		
Demography	Sub-demography	Response rate (%)
Primary activity	Manufacturing Service	20.3 79.7
Year of establishment	5 years or less Over 5 years	27 73
Years of computer experience	5 years or less 6-10 years 11 years or more	47.3 50 2.7
No of employees	Below 5 5-100 101 or more	41.9 47.3 10.8
Highest educational qualification	Non-graduate Graduate	41.9 58.1
Age	40 years or less 41 years or more	43.2 56.8

IT Usage Pattern

The results show that all respondents (100%) are using word processor, 73% are using electronic mail, 57% are using application packages. Other systems are graphics (42%), spreadsheets (41%), databases (41%), and programming languages (31%). Job tasks where systems are used are Letters and memos (88%), producing reports (77%), internal communication (66%), data storage/retrieval (62%), budgeting (49%), controlling & guiding activities (47%), planning & forecasting (45%), making decisions (43%), analyzing trends (42%), and analyzing problems & alternatives (24%). It is observed that 59.5% of respondents are using a minimum of four out of the seven varieties of systems presented, and 54.1% are using a system for at least five out of the ten job tasks.

System variety was subsequently combined into two larger groups as follows: Basic Systems (which include, word processing, electronic mail, spreadsheets, graphics, & databases), and Advanced Systems (e.g. application packages & programming languages). Specific job tasks were grouped into those for administrative purposes (such as producing reports, letters & memos, data storage/retrieval, & communication with others), planning purposes (e.g. analyzing trends, planning/forecasting, analyzing problems/alternatives, & making decisions), and control purposes (e.g. budgeting, controlling & guiding activities). All the respondents are using at least one basic

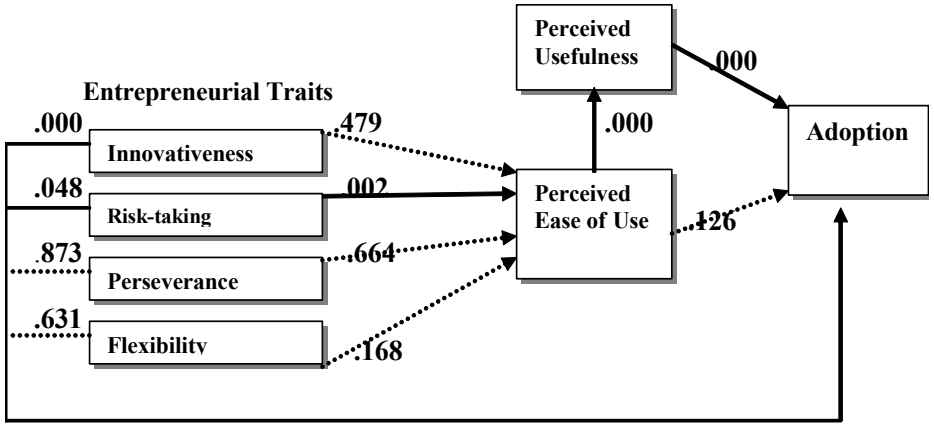
system, and 58.1% of respondents are using a minimum of one advanced system. A computer system is in use for at least one administrative task by all respondents, 59.5% of respondents are using a system for a minimum of one planning, or control task.

Descriptive statistics of perceived ease of use show that 87.8% of respondents strongly agree or agree that system interaction is clear and understandable, 78.4% strongly agree or agree that it is easy to get the system to do what is wanted, 96% strongly agree or agree that interaction with the system does not require a lot of mental effort, and 89.2% strongly agree or agree that the system is easy to use. With respect to perceived usefulness, 94.5% of respondents strongly agree or agree that the system is useful in their job, 96% strongly agree or agree that the system improves their job performance, increases their productivity, or enhances their job effectiveness. The mean and standard deviation of perceived usefulness are respectively 17.66 and 1.96, while that of perceived ease of use are 16.93 and 2.43. On the whole, respondents find the system useful and easy to use.

Hypotheses Testing

The hierarchical multiple regression model (Abrams, 2006) was employed to analyse the relationships in the model and the results are summarised and schematised in Figure 1 below.

Figure 1: Relationships among Traits, Perception, and Adoption (with P-values)



Perceived ease of use and usefulness contribute significantly ($F = 8.53$; $p < .001$) and predict 19.4% variation in technology adoption by women entrepreneurs. Details of the results show that perceived usefulness has significant positive relationship with technology adoption (t-value = 3.93; $p < .001$), while perceived ease of use does not (t-value = -1.55; $p < .126$). The above values for

usefulness and ease of use indicate that perceived usefulness is more salient than perceived ease of use in technology adoption by women entrepreneurs.

However, there is an indirect relationship between perceived ease of use and adoption via perceived usefulness. In other words, perceived usefulness mediates the relationship between ease of use and adoption. According to Baron and Kenney (1986, p. 1176), a variable functions as a mediator when it meets the following conditions: (a) variations in levels of the independent variable significantly account for variations in the presumed mediator, (b) variations in the mediator significantly account for variations in the dependent variable, and (c) when a and b are controlled, a previously significant relation between the independent and dependent variables is no longer significant or it is significantly decreased. Table 2 shows the result of the test for the mediator effect of perceived usefulness in the relationship between ease of use and usage.

Table 2: Perceived Ease of use and IT Usage (via Perceived Usefulness)

Perception	Beta coefficients without usefulness (model 1)	Beta coefficients with usefulness (model 2)
Ease of Use	.136	-.215
Usefulness	-	.546**
	R^2 = .02	R^2 = .20

** = Significance at .01 level

The beta coefficient for model 1 is significantly higher than that of model 2. In addition, the increase in R^2 of .18 between models 1 and 2, explain the mediation effect of usefulness in the relationship between ease of use and adoption. Thus, perceived usefulness mediates the relationship between ease of use and adoption.

Entrepreneurial Traits, Perceived Ease of Use, and Adoption

Table 3 below summarizes the regression analysis of the relationship between traits, ease of use, and adoption.

Entrepreneurial traits namely innovativeness, risk-taking propensity, perseverance, and flexibility contribute significantly to perceived ease of use ($F = 4.28$; $p < .05$) and adoption ($F = 24.03$; $p < .001$). The traits also predict 19.9% and 58% variation in ease of use and adoption respectively. It is further observed that risk-taking propensity is significantly associated with system's perceived ease of use, while innovativeness and risk-taking propensity are important determinants of adoption (see Table 3).

Table 3: Entrepreneurial Traits on Perceived Ease of Use & Adoption				
Drivers	Ease of Use		Adoption	
	t-value	p-value	t-value	p-value
Innovativeness	.712	.479	3.69	.000
Risk-taking propensity	3.214	.002	2.02	.048
Perseverance	-.437	.664	-.160	.873
Flexibility	-1.395	.168	.483	.631
	R^2 = .199; F = 4.28; sig. = .004		R^2 = .582; F = 24.03; sig. = .000	

Ease of use also mediates the relationship between traits and adoption. The increase in the coefficient of determination between model 1 and 2 is as a result of the mediator effect of ease of use. It is also observed from Table 4 that the beta coefficients of innovativeness and risk-taking propensity are significantly reduced between model 1 and model 2. This reduction coupled with the increase in coefficient of determination indicates that ease of use mediates the relationship between innovativeness and risk-taking propensity in one hand and technology adoption in the other. There is neither a direct nor an indirect relationship between perseverance, flexibility and technology adoption.

Table 4: Traits and IT Adoption (via Perceived Ease of use)		
Perception	Beta coefficients without ease of use (model 1)	Beta coefficients with ease of use (model 2)
Innovativeness	.894***	876**
Risk-taking propensity	-.270*	-.546*
Perseverance	-.038	-.027
Flexibility	.109	.141
Ease of use	-	.075
	R^2 = .582	R^2 = .587
*** p < .001 ** p < .01 * p < .05		

DISCUSSION

The findings show that Malaysian women entrepreneurs' adoption of IT is driven directly by their perception of the system's usefulness and indirectly (via perceived usefulness) by perceived

ease of use. Women entrepreneurs in this study deem easy to use systems as useful systems and in turn adopt. In fact, ease of use in itself is not a determinant of adoption, but becomes influential when easy to use systems are perceived as useful systems. These findings are also consistent with Ndubisi et al., (2003) and Ndubisi et al (2005).

The lack of direct influence of ease of use on adoption is contrary to the postulation of the technology acceptance model, but plausibly explained by the outcome orientation of entrepreneurs. As shown in the literature, entrepreneurs have a high need for achievement (Decarlo & Lyons 1979; Hornaday & Aboud 1971; Burch 1986, etc), and such desire to achieve coupled with their low risk-aversion and low anxiety level (Sexton & Bowman 1984) could minimize the influence of perceived difficulty of systems, provided such systems are beneficial. In other words, the need to achieve will cause perceived usefulness to overshadow system's difficulty in use, thereby making sure that such systems are deployed even with some measure of difficulty in use. Secondly, at the stage of adoption, users may be aware of the system's benefits but not necessarily its ease/difficulty of use. Unlike usefulness, which can be described to an adopter, it takes a hands-on-experience to appreciate whether a system is easy or difficult to use. At the point of adoption, such hands-on-experience may not be available in many instances, and even where they are available, their sketchy nature as often provided by systems vendors may not reveal all its encumbrances. Moreover, even where all encumbrances are unveiled, at the point of adoption, an adopter may rationalize that such difficult is common with first encounters, which will gradually disappear as familiarity with the system increases. These reasoning can make a user to buy a system deemed useful and yet not easy to use, which explains why perceived usefulness is preponderant over perceived ease of use in determining technology adoption among women entrepreneurs.

Another interesting finding of this research is the difference in antecedents of adoption between women entrepreneurs and other female (non-entrepreneurs) technology users. Venkatesh et al (2000) reported higher process orientation (ease of use) for women in technology adoption. Earlier, Hennig and Jardim (1977); Rotter and Portugal (1969) reported that women tend to focus on the methods used to accomplish a task. The evidence from the present research contradicts such notion. It is clear from the current study that women entrepreneurs are somewhat different from other women in the earlier studies in that they are outcome oriented more than process oriented. In fact women entrepreneurs focus on outcomes rather than processes in making technology adoption decisions. It has also been reported that women display somewhat higher levels of anxiety (Bozionelos 1996), which have been found to inversely correlate with technology adoption. However, women entrepreneurs are different. Just like other entrepreneurs, women entrepreneurs exhibit a low anxiety level (Sexton & Bowman 1983; 1984), which could result in greater adoption.

Two important traits that bear on women entrepreneurs' perception of systems ease of use and systems adoption are innovativeness and risk-taking propensity. Clearly, both traits are directly associated with adoption. Specifically, the higher the risk-taking propensity of women entrepreneurs, the greater their level of adoption. Similarly, the more innovative an entrepreneur is, the greater

her/his technology adoption. Rogers (1995) in his innovation diffusion theory described innovators as initiators or originators of technologies or ideas. These often adopt more than anyone else since others follow their footsteps, even when there are no followers, innovators move on. Innovativeness has also been associated with high risk-taking propensity. Since innovators are always at the forefront, they shoulder a higher risk of uncertainty of outcomes, which others may not experience eventually. Therefore, adopting new technologies is not surprisingly a function of innovativeness and risk-taking propensity of women entrepreneurs.

With regards to ease of use, risk-taking propensity is positively correlated with it. The greater the amount of risk that users are at home with, the more favourable their perception of the ease of use of the particular system will be. This is because low risk aversion has the potential to create a favourable atmosphere by eliminating anxiety and phobia for uncertainty, thereby making adopters more willing and ready to tryout new technologies. In addition, as trial rate increases, so does usability.

IMPLICATIONS

Theoretically, this work supports the theorization of the technology acceptance model that perceived usefulness is directly related to technology adoption, and perceived ease of use is indirectly (via perceived usefulness) associated with adoption. Further, contrary to the second TAM relationship, the study found no evidence for a direct relationship between perceived ease of use and adoption among women entrepreneurs. Other interesting findings of the study that support or challenge current theory are the process orientation of women with respect to technology adoption as well as the focus of women on the methods used to accomplish a task as against the outcome of undertaking the task. Clearly, the findings of this research shows that for women entrepreneurs, perceived usefulness is much more important than perceived ease of use. Thus, women entrepreneurs are outcome oriented (not process oriented) and also focus on the result rather than the method used to accomplish a task. The end is more important than the means. This result may have been accounted for by entrepreneurs high need for achievement, low risk aversion and doggedness, which may move them to overlook some difficulties or complexities in use so long as the system is beneficial.

Implications of the research on practice are two prolonged. Firstly, is with regards to the management of technology in entrepreneurial ventures, and secondly is with respect to systems development and marketing. Entrepreneurs should invest in useful systems; such investment should not be hindered by slight system's complexity or difficulty, which have been found to fade away with time as users gain more and more experience with the specific system. Further, entrepreneurs should be more innovative and assume greater risk, since these traits are crucial in forming a favourable perception of systems usability and system's adoption.

Systems developers and marketers on their part should supply more value added systems. The strong impact of system's perceived usefulness on adoption shows that those marketers that are market oriented, who desire to deliver superior value to users will eventually be rewarded. Also important, beside usefulness is system's user friendliness. Since easy to use systems are deemed useful systems and consequently adopted, designers and vendors must not make a toy of the ease of use factor. This is because albeit this factor has no direct influence on adoption, it anchors perceived usefulness, which directly predicts adoption.

STRENGTHS OF THE CURRENT RESEARCH

Some of the strengths of this research are highlighted. Firstly, the data are based on a poll of entrepreneurs who are officially recognised as Malaysian entrepreneurs by their membership of the national association of women entrepreneurs in Malaysia (NAWEM). Secondly, the model is based on theory grounded on existing management information system studies. Moreover, actual IT usage was used rather than usage intention (as a predictor of usage behaviour), which has been questioned by some scholars.

FUTURE RESEARCH DIRECTIONS

This study deliberately studied only women entrepreneurs because of the small amount of research in this sector compared to their male counterparts. Future research should be geared towards a comparative study of male and female entrepreneurs in Malaysia to examine if there are any differences in their IT usage and usage drivers. It is also necessary to examine the moderating effects of gender on the following relationships: (1) perceived usefulness and adoption, (2) perceived ease of use and adoption, and (3) perceived ease of use and perceived usefulness.

CONCLUSIONS

Women entrepreneurs are outcome oriented in their technology adoption decisions. They focus more on the beneficial outcomes rather than on ease or difficulty of use process. They emphasize the end rather than the means to the end, which has been reported for other women (non-entrepreneurs) in previous research.

Innovativeness and risk-taking propensity are influential traits in technology adoption decisions. These traits also influence the ease of use perceptions of systems, which determines adoption indirectly through perceived usefulness. Hence, entrepreneurial traits, user's perceptions of system's usability and usefulness are potent keys to understanding the technology adoption decision processes of women entrepreneurs.

REFERENCES

Abrams, D. R. (2006). Introduction to Regression 1. Princeton University Data and Statistical Services, Retrieved January 29, 2007, from http://www.data@princeton.edu.

Adams, D., Nelson R.R., & Todd, P. (1992). Perceived usefulness, ease of use, and usage of information technology: A replication. *MIS Quarterly*, 16(2), 227-248.

Agarwal, R. & Prasad, J. (1997). The role of innovation characteristics and perceived voluntariness in the acceptance of information technologies. *Decision Sciences*, 28, 557-582.

Agarwal, R. & Prasad, J. (1998). A conceptual and operational definition of personal innovativeness in the domain of information technology. *Information Systems Research*, 9, 204-215.

Ajzen, I. (1991). The Theory of Planned Behaviour. *Organisational Behaviour and Human Decision Processes*, 50, 179-211.

Ajzen, I. & Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*, Englewood Cliffs, New Jersey: Prentice-Hall Inc.

Akkeren, J.V. & Cavaye, A.L.M. (1999). Factors affecting the adoption of e-commerce technologies by small business in Australia: An empirical study. Retrieved January 29, 2007 from http://www.acs.org.au/act/events/io1999/akkern.html.

Baron, R.M., & Kenney, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, 51, (6), 1173-1182.

Bem, S.L. (1981). The BSRI and gender schema theory: A reply to Spence and Helmreich. *Psychological Review*, 88, 369-371.

Bennett, B. Cobbold, T. & Phillips, M. (2003). ICT use and firm performance in Australia – Evidence from firm interviews. Department of Industry, Tourism and Resources Working Paper (8), Canberra, 1-39.

Bentler, P.M. & Speckart, G. (1979). Models of attitude-behaviour relations. *Psychological Review*, 86, 542-464.

Bozionelos, N. (1996). Psychology of computer use: XXXIX. prevalence of computer anxiety in British managers and professionals. *Psychological Reports*, 78(3), 995-1002.

Burch, J.G. (1986). *Entrepreneurship*. New York: Wiley.

Brancheau, J.C. & Wetherbe, J.C. (1990). The adoption of spreadsheet technology: Testing innovation diffusion theory in the context of end-user computing. *Information Systems Research*, 1(2), 115-143.

Cooper, R.B. & Zmud, R.W. (1990). Information technology implementation research: A technological diffusion approach. *Management Science*, 36(2), 123-139.

Cowling, M. & Taylor, M. (2001). Entrepreneurial women and men: Two different species? *Small Business Economics*, 16(3), 167-75.

Davis, F.D., (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-339.

Davis, F.D., Bagozzi, R. & Warshaw, P.R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35(8), 982-1003.

Davis, F.D. & Venkatesh V. (1996). A critical assessment of potential measurement biases in the technology acceptance model: three experiments. *International Journal of Human-Computer Studies*, 45, 19-45.

DeCarlo, J.F. & Lyons, P.R. (1979). A comparison of selected personality characteristics of minority and non-minority female entrepreneurs. *Journal of Small Business Management*, 17, 22-28.

Doms, M.E., Jarmin, R.S. & Klimek, S.D. (2003). IT investment and firm performance in US retail trade, FRBSF Working Paper, 2003-19, Retrieved January 26, 2007 from http://www.frbsf.org/publications/economics/papers/2003/wp03-19bk.pdf.

Fishbein, M. & Ajzen, I. (1975). *Belief, attitude, intentions and behaviour: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Glick-Smith, J.L. (1999). What are the Characteristics of a Successful Entrepreneur? Retrieved January 26, 2006 from http://207.17.212.203/FAQ/characteristics_successful_entre.html.

Greene, P.G., Hart, M.M., Gatewood, E.J., Brush, C.G. & Carter, N.M. (2003). Women entrepreneurs: Moving front and centre: An overview of research and theory. Coleman White Paper Series, Retrieved January 29, 2007 from http://www.usasbe.org/knowledge/whitepapers/greene2003.pdf.

Gretton, P., Gali, J. & Parham, D. (2002). Uptake and impacts of the ICTs in the Australian economy: Evidence from aggregate, sectoral and firm levels, *Proceedings of Workshop on ICT and Business Performance*, OECD Paris, December 9, 1-68.

Guriting, P., Chunwe, G. & Ndu, N.N.O (2007). Computer self-efficacy levels, perceptions and adoption of online banking. *International Journal of Services Technology and Management*, 8(1), 54-61.

Harper, David. (1996). *Entrepreneurship and the market process*. London: Routledge.

Hennig, M. & Jardim, A. (1977). *The managerial woman*. Garden City, NY: Anchor press.

Hornaday, J.A. & Aboud, J. (1971). Characteristics of successful entrepreneurs. *Personnel Psychology*, 24, 141-153.

Igbaria, M., Guimaraes, T., & Davis, G.B. (1995). Testing the determinants of microcomputer usage via a structural equation model. *Journal of Management Information Systems*, 11(4), 87-114.

Igbaria, M., Zinatelli, N., Cragg, P., & Cavaye, A.L.M. (1997). Personal Computing Acceptance Factors in Small Firms: A Structural Equation Model. *MIS Quarterly*, 21(3), 279-305.

International Coalition of Library Consortia, (1998), *Guidelines For Statistical Measures of Usage Of Web-Based Indexed.* Retrieved Jan 29, 2007 from http://www.library.yale.edu/consortia/webstats.html.

Johansen, R. & Swigart, R. (1996). *Upsizing the individual in the downsized organisation: Managing in the wake of reengineering, globalisation, and overwhelming technological change*. Reading, MA: Addison –Wesley.

Julien, P.A. & Raymond, L. (1994). Factors of new technology adoption in the retail sector. *Entrepreneurship Theory and Practice*, 18(4), 79-87.

Kitchell, Susan (1997). CEO characteristics and technological innovativeness: A Canadian perspective. *Journal of Administrative Sciences*, 14(2), 111-125.

Landauer, T.K. (1995). *The trouble with computers: Usefulness, usability, and productivity*. Cambridge, MA: MIT Press.

Lee. J. (1996). The motivation of women entrepreneurs in Singapore. *Women in Management Review*, 11(2), 18-29.

Mathieson, K. (1991). Predicting user intentions: Comparing the technology acceptance model with the theory of planned behaviour. *Information Systems Research*, 2(3), 173-191.

McBer and Co, (1986). Entrepreneurship and small-enterprise development. *Second Annual Report to the United States Agency for International Development*, March 25.

McCalman J. & Paton R.A. (1992). *Change management A guide to effective implementation*. London: Paul Chapman Publishing.

McGaffey, T.N. & Christy, R. (1975). Information processing capability as a predictor of entrepreneurial effectiveness. *Academy of Management Journal*, 18, 857-863.

Michaels, N. (2006). Women entrepreneurs growing in numbers & importance. Retrieved Jan 29, 2007 from http://www.score.org/m_pr_20.html.

Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management Science*, 29, 770-791.

Mirowsky, J. & Ross, C.E. (1990). Control or defense? Depression and the sense of control over good and bad outcomes. *Journal of Health and Social Behaviour*, 31, 71-86.

Moore, G.A. (1991). *Crossing the chasm: Marketing and selling technology products to mainstream customers*. New York: HarperCollings Publishers.

Morrow, P.C., Presll, E.R., & McElroy, J.C. (1986). Attitudinal and behavioural correlates of computer anxiety. *Psychological Reports*, 59, 1199-1204.

Ndubisi, N.O. & Richardson, S. (2002). The entrepreneurs technology acceptance model, *Academy of Entrepreneurship Journal*, 8(2), 95-113.

Ndubisi, N.O., Gupta, O. K. & Massoud, S. (2003). Organizational learning and vendor support quality by the usage of application software packages: A study of Asian entrepreneurs. *Journal of Systems Science and Systems Engineering,* 12(3), 314-331.

Ndubisi, N.O. Gupta, O. K., & Ndubisi G.C. (2005). The moguls model of computing: Integrating the moderating impact of users' persona into the technology acceptance model, *Journal of Global Information Technology Management*, 8(1), 27-47.

Nohria, N. & Gulati, R. (1997). What is the optimum amount of organisational slack? A study of the relationship between slack and innovation in multinational firms. *European Management Journal*, 15(6), 603-611.

Rogers, E.M. (1995). *Diffusion of innovations*. New York: Free Press.

Rotter, G.S. & Portugal, S.M. (1969). Group and individual effects in problem solving. *Journal of Applied Psychology*, 31, 537-547.

Segars, A.H. & Groover, V. (1993). Re-examining perceived ease of use and usefulness: A confirmatory factor analysis. *MIS Quarterly*, 17, 517-725.

Sexton, D.L., & Bowman, N. (1983). Determining entrepreneurial potential of students. *Academy of Management Proceedings*, 42, 408-412.

Sexton, D.L. & Bowman, N. (1984). Personality inventory for potential entrepreneurs: Evaluation of a modified JPI/PRF-E test instrument. In Hornaday et al. (1984) Eds. *Frontiers of Entrepreneurial Research*, Wesley, MA: Centre for Entrepreneurial Studies, Babson college.

Sichel, D.E. (1997). *The computer revolution: An economic perspective*. Washington, DC: The Brookings Institution.

Singh, J.V. (1986). Performance, slack and risk-taking in organisational decision making. *Academy of Management Journal*, 29(3), 562-585.

Sjazna, B. (1994). Software evaluation and choice predictive validation of the technology acceptance instrument. *MIS Quarterly*, 18, 319-324.

Songer-Nocks, E. (1976). Situational factors affecting the weighting of predictor components in the Fishbein model. *Journal of Experimental Social Psychology*, 12, 56-69.

Straub, D. Limayem, M. & Karahannan-Evaristo, E. (1995). Measuring system usage: Implications for IS theory testing. *Management Science*, 41, 1328 - 1342.

Taylor, M.C. & Hall, J.A. (1982). Psychological androgony: Theories, methods, and conclusions. *Psychological Bulletin*, 92, 347-366.

Taylor, S. & Todd, P. (1995). Understanding information technology usage: A test of competing models. *Information Systems Research*, 6(2), 144-176.

Thompson, R.L., Higgins, C. & Howell, J.M. (1991). Personal computing: toward a Conceptual Model of Utilisation. *MIS Quarterly*, 15(1), 125-143.

Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information Systems Research*, 11, 342-365.

Venkatesh, V. & Brown, A.S., (2001). A longitudinal investigation of personal computers in homes: Adoption determinants and emerging challenges. *MIS Quarterly*, 25, 71-102.

Venkatesh, V., Morris, M.G., & Ackerman, P.L. (2000). A longitudinal field investigation of gender differences in individual technology adoption decision making processes. *Organisational Behaviour and Human Decision Processes*, 83, 33-60.

Webster, J. (1998). Desktop videoconferencing: Experiences of complete users, wary Users, and non-users. *MIS Quarterly*, 16(2), 201-226.

Weiner, L.R. (1993). *Digital woes: Why we should not depend on software*. Reading MA: Addison-Wesley.

Yonekura, S. (1984). Entrepreneurship and innovative behaviour of Kawasaki Steel: The post world war II period. Discussion paper no. 120, Institute of Business Research, Hitotsubashi University, Kunitachi, Tokyo, Japan.

RURAL WOMEN'S SELF-EMPLOYMENT: A LOOK AT PENNSYLVANIA

Sherry Robinson, Penn State University
John Finley, Columbus State University

ABSTRACT

The quantity and quality of rural jobs have been seriously affected by problems such as sagging farm economies, decreases in rural industries, and increased foreign competition, leading many workers to migrate to more urbanized areas. Other workers may choose self-employment over relocation. Women, in particular, may have difficulty finding suitable jobs in rural areas because of their need to balance work and family obligations. Rural areas in general are often considered economically disadvantaged due to problems such as lower levels of capital, less-developed infrastructure, and fewer resources/business services. These factors would logically create difficulties for entrepreneurs and small business owners and therefore discourage business start-ups. However, interviews with some rural women in Pennsylvania have revealed that rural areas may be more conducive to small business start-ups. This study examines the levels of self-employment by comparing the rates of self-employment for women and men in rural (non-metropolitan) and metropolitan areas within Pennsylvania, the state with the highest number of rural residents.

INTRODUCTION

Pennsylvania boasts a population of more than 12.5 million people. Of these, almost 340,000 were self-employed, 110,000 of which were women (Pennsylvania State Data Center, 2005). Although Pennsylvania ranks 6th in the US in terms of total population, it ranks 1st in rural population, with approximately 2 million non-metropolitan residents. Of its 67 counties, 35 are designated as non-metropolitan. Pennsylvania, therefore, is a very appropriate choice for a comparison of self-employed rural and urban women and men. As will be discussed later, rural and non-metropolitan have different technical meanings. However, for the purposes of this study these will be used synonymously, as will the terms urban and metropolitan.

Rural areas are often considered economically disadvantaged because of their lower levels of development and limited work opportunities (Fendley & Christenson, 1989; Kale, 1989;

MacKenzie, 1992; Mueller, 1988; Osborne, 1987; Small Business Administration [SBA], 2001; Tigges & Green, 1994; Trucker & Lockhart, 1989). Areas that boast many high-value entrepreneurs are generally found around urban cores that feature needed capital (human as well as financial) and infrastructure (Low, Henderson & Weiler, 2005). Rural women in particular "have been an economically disadvantaged group historically" and face restricted employment opportunities (Lichter, 1989, p. 199, 200).

Despite these problems, some studies (Jack & Anderson, 2002; Robinson, 2001; Tosterud & Habbershon, 1992) have found that rural residents do not necessarily view their location as a disadvantage. Entrepreneurship provides rural residents an avenue for financial improvement and independence without giving up their unique and traditional way of life (Tosterud & Habbershon, 1992). Kilkenny, Nalbarte, and Besser (1999) state that a business owner may feel successful even with a low income if the quality of life in the community is high. Taking population into consideration, Clark and James (1992) found the rate of business ownership to be higher in non-metro areas with low populations.

This study further explores this issue by using Census 2000 data to determine if there is a difference in women's self-employment rates in metropolitan and non-metropolitan counties of Pennsylvania, and compares them to men's. The following section reviews the literature on rural and women-owned businesses. The results of this study are then presented and analyzed.

CHALLENGES FOR RURAL BUSINESS OWNERS

The quantity and quality of jobs in rural areas have been seriously affected by problems such as sagging rural farm economies, increased foreign competition, and decreases in rural industries (Lichter, 1989). Economic decline has led many workers to migrate to urban areas, decreasing the population and purchasing power in rural areas. MacKensie (1992, p. 92) states that "rural areas are seen by many as being on the fringe rather than a part of the mainstream of both the economy and society." In 2000, average earnings per job were $37,298 for metro residents, but only $27,375 for non-metro residents nationwide (Economic Research Service [ERS], 2003a). Compared to 1999, this represents a 0.5% decrease for those in metro areas and a 1.4% decrease for non-metro areas. Similarly, per capita income in metro areas was $30,691 compared to $22,985 in non-metro areas. In general, per capita income has been greater in metropolitan than non-metropolitan areas since 1979 (Barkley, 1993; Kean, Gaskill, Letstritz, & Jasper, 1998).

Rural development often lags behind that of urban areas in terms of population, buying power, capital, entrepreneurial climate, innovation, support services such as health care, and well-developed electronic and transportation infrastructures, (MacKenzie, 1992; Mueller, 1988; SBA, 2001). For example, an airport with scheduled passenger service within 50 miles and access to interstate highway interchanges are both associated with greater earnings growth in rural areas

(Aldrich & Kusmin, 1997). Business services such as accounting, banking, advertising, and legal counsel may be difficult to locate, leading to higher fixed costs and greater difficulty competing (Osborne, 1987; Trucker & Lockhart, 1989; Fendley & Christenson, 1989; SBA, 2001). In addition, the merger of small rural banks with larger banks that are less willing to loan funds to small businesses make it more difficult to obtain financing (SBA, 2001).

Overall, the SBA (1999) reports that between 1990 and 1995, all industries did better in non-rural than in rural areas. One reason for this may be that rural companies tend to be smaller and have less income than those in metro areas (Henderson, 2002). Glancey (1998) adds that small business owners in urban areas may be more interested in growth whereas rural business owners may be primarily motivated by lifestyle.

Women with families often look to entrepreneurship in order to control their schedules and gain more control over their lives (Arai, 2000; Birley, 1989; Clark & James, 1992; Lombard, 2001; NFWBO, 1998a). This may be especially true in rural areas where there are likely to be fewer child-care options (Jack & Anderson, 2002; Tigges & Greene, 1994). Lichter (1989) concluded that in 1985, one-third of rural women were underemployed, meaning they were not able to find full-time work or a job paying adequate wages. Rural women were underemployed at a rate 38% greater than urban women, and 42% higher than rural men. It has been suggested that skilled rural women would make more money by working in managerial positions for employers, but because these jobs are not readily available or easily accessible, these women are motivated to start and operate their own businesses (Clark & James, 1992; Tigges & Greene, 1994).

POSITIVE FACTORS FOR RURAL AREAS

Self-employment seems to be a desirable option for non-metropolitan residents despite the economic difficulties. Using General Social Survey data, Hout and Rosen (2000) found that the sons of farmers, businessmen and professionals had higher rates of self-employment than did sons of clerical, retail, and manual workers. A study comparing the rates at which new firms and jobs were created in rural and urban areas of the midwest found no significant differences between the areas (Lin, Buss, & Popovich, 1990). Furthermore, Clark and James (1992) found the rate of business ownership to be higher in midwest non-metropolitan areas with low populations. Tosterud and Habbershon (1992) found that many new business owners in South Dakota started their businesses so they could remain in the state, and felt their chances of success were not decreased by their location. This was consistent with an Iowa study in which rural business owners saw their location as providing advantages.

Likewise, a small group of women micro-business owners in Pennsylvania appreciated their rural locations because of lower costs and established social networks that made it easier for them to start businesses and decreased their perceived risk of failure (Robinson, 2001). Findings from a

focus group with small business owners in Vermont show that local community support was crucial to business and created an advantage to these rural residents (Sullivan, Halbrandt, Wang, & Scannell, 1997). However, in reviewing the literature on social capital and entrepreneurship, Westland and Bolton (2003) found that community ties can also be negative if they stifle growth or innovative thinking.

The current literature is conflicting in that many reports show those in rural areas, particularly women, to be economically disadvantaged, while other studies have shown that rural business owners view their locations as neutral or even advantageous. This study examines this issue by comparing the rates of self-employment of men and women in metropolitan and non-metropolitan counties of Pennsylvania. The following sections present the methodology followed in this study and the results of statistical tests on data obtained from the U.S. Census Bureau.

METHODOLOGY

Data regarding the number of self-employed people and unpaid family workers in each county of Pennsylvania were obtained from Census 2000 (U.S. Census Bureau, 2003). This particular data set, Summary File 4, provides data on Class of Worker by Sex, Place of Work, and Veteran Status based on sample data. An advantage of this type of data is that figures are available for even the smallest county. In contrast, data from 100% count files for very small counties are frequently withheld. For example, data on the number of men and women who work as unpaid workers in a family business are available in this data set, even those these counts are only 10 and 4 respectively.

Classifications for the metropolitan and non-metropolitan status of each county, as well as each county's Rural-urban Continuum Code were obtained from the ERS (2003b). The Office of Management and Budget has categorized each county as either metro or non-metro based on the relationship to areas designated as Metropolitan Statistical Areas (MSA). The ERS has further assigned each county a code from 1 to 9, with 9 being the most rural. New codes that better reflect the rurality of counties based on Census 2000 data were released in June 2003 (ERS, 2003c). These codes take into consideration not only the number of people living in urban areas of a given county, but also the economic ties between non-metro and metro counties. Metro counties are classified by the size of the population in the MSA of which they are a part. Non-metro counties are coded according to their total urban population and whether they are adjacent to a metro county. Table 1 presents the nine classifications of the Rural-urban continuum code and the number of Pennsylvania counties categorized as each one. It should be noted that no counties in Pennsylvania were categorized as 5.

Table 1: Rural-urban Continuum Code		
Pennsylvania Metro Counties		
N		
13	1	counties in metro areas with a population of 1 million or more
14	2	counties in metro areas with a population of 250,000 - 1 million
5	3	counties in metro areas with a population less than 250,000
Pennsylvania Non-metro counties		
14	4	counties with an urban population of 20,000 or more, adjacent to a metro area
0	5	counties with an urban population of 20,000 or more, non adjacent to a metro area
12	6	counties with an urban population of 2,500 to 19,999, adjacent to a metro area
5	7	counties with an urban population of 2,500 to 19,999, not adjacent to a metro area
2	8	counties that are completely rural or have an urban population of less than 2,500, adjacent to a metro area
2	9	counties that are completely rural or have an urban population of less than 2,500, non adjacent to a metro area
Source: ERS (2003b)		
Urban Influence		
13	1	large - in a metro area with at least 1 million residents
19	2	small - in a metro area with fewer than 1 million residents
4	3	micropolitan adjacent to a large metro area
2	4	noncore adjacent to a large metro area
15	5	micropolitan adjacent to a small metro area
3	6	noncore adjacent to a small metro with town of at least 2,500 residents
4	7	noncore adjacent to a small metro and does not contain a town of at least 2,500 residents
3	8	micropolitan no adjacent to a metro area
3	9	noncore adjacent to a micro area and contains a town of 2,500 - 9,999 residents
1	10	noncore adjacent to a micro area and does not contain a town of at least 2,500 residents

RESULTS AND ANALYSIS

T-tests were conducted on the proportions of men and women in metro and non-metro counties who were self-employed (see Table 2). As expected, men were more likely than women to be self-employed regardless of their location. In total, non-metro workers are significantly more likely to be self-employed. This holds true for both women and men, although the difference is greater among men. Proportionately, non-metro men are almost twice as likely as non-metro women to be self-employed, with metro men having a similar, but smaller (1.8 times as likely) advantage. Non-metro men, however, were almost 1.4 times as likely as metro men to be self-employed, while non-metro women were about 1.25 times as likely as non-metro women to be self-employed.

Table 2

	Total	Women	Men
Non-metro	10.17%	6.38%	13.33%
Metro	8.32	5.39	10.86
t	4.675	3.696	4.726
Sig.	.000	.000	.000

These data were then further analyzed by rural-urban continuum code classification, with the results shown in Table 3. Metro counties seem to be fairly similar, with the means all within 0.37 of a percentage point of each other, with greater spreads among non-metro counties. The four counties coded 8 and 9, which are completely rural, were combined in order to conduct an Analysis of Variance test. The results of the test show that the probability that the means of the different county groups being this different by random chance is extremely small.

As the counties become more rural, the rates of self-employment tend to generally increase, except in the counties coded as 7, which were lower than those coded as 6, and sometimes 4, but still consistently higher than the metro counties. One reason for these findings may be that people in non-metro areas seek self-employment because of a lack of other work opportunities. It may also suggest that non-metro residents are willing to create their own job situations in order to remain in a location where suitable jobs are not readily available despite the economic disadvantages of non-metro areas, as was the case with small business owners in South Dakota (Tosterud & Habbershon, 1992). Another answer may be that provided by women in Robinson's (2001) study who stated that they felt there was less risk to starting a business in a rural area because of low costs and social networks. This was echoed by Scottish small business owners studied by Jack and Anderson (2002). Although it is beyond the scope of this paper to determine the nature of self-employed people in these counties, it is also possible that people who choose to live in more rural areas are more self-reliant, choosing to create their own opportunities, and are not discouraged by hindrances to business ownership that are associated with rural areas.

Table 3: Self-employment by Rural-Urban Continuum Code			
RUCC	Total self-employment	Women	Men
1	8.52%	5.60%	11.06%
2	8.23	5.29	10.78
3	8.05	5.09	10.59
4	9.47	5.82	12.53
6	10.94	6.90	14.33
7	9.22	5.87	11.99
8	12.04	8.09	15.37
9	10.94	6.76	14.17
ANOVA F	4.829	4.320	4.483
sig.	.000	.000	.000

Table 4 Self-employment by Urban Influence Code			
UIC	Total self-employment	Women	Men
1	8.52%	5.60%	11.06%
2	8.18	5.24	10.73
3	9.03	5.21	12.28
4	8.93	6.44	11.04
5	9.72	6.16	12.74
6	12.60	7.36	16.95
7	12.57	8.07	16.27
8	9.02	5.67	11.83
9	10.80	6.94	13.92
10	8.52	5.03	11.09
ANOVA F	6.485	4.907	6.611
Sig.	.000	.000	.000

Table 5 Correlation				
	RUCC	sig.	UIC	sig.
Total self-employed	.501	.000	.494	.000
Women	.449	.000	.429	.000
Men	.488	.000	.483	.000

CONCLUSION

This study used recently released Census 2000 data to compare the self-employment and unpaid family worker participation rates in metro and non-metro counties of Pennsylvania. The literature on small business in rural areas leads to conflicting conclusions as it is clear that rural small business owners, or potential small business owners, face many obstacles due to their locations. Henderson (2002) concluded that the small size of markets combined with remoteness, less access to venture capital, and more difficulty accessing technology frequently results in fewer high-growth entrepreneurs in rural areas.

However, several studies have also reported that rural business owners like their locations and therefore find ways to overcome the disadvantages. These businesses contribute to the overall quality of life in non-metropolitan areas and boost regional economic development by adding to the list of businesses (Low et al., 2005). This may be one way in which non-metro residents try to overcome the problems of rural economic disadvantages.

Due to the perceived quality of life in a rural area, some people may enjoy lifestyle-oriented businesses rather than seeking to maximize growth and profits (Kilkenny et al., 1999). With regards to profit maximization, rural firms may enjoy lower costs and fewer restraints on space (Glancey, 1998). This may be especially so if rural companies can also take advantage of social networks and embeddedness (Jack & Anderson, 2002, Kilkenny et al., 1999; Robinson, 2001; Tosterud, & Habbershon, 1992; Westland, & Bolton, 2003). Future research should further examine the reasons for higher rates of self-employment in non-metro areas to identify ways rural business owners are overcoming the disadvantages of their locations and taking advantage of their special situations.

REFERENCES

Aldrich, L. & Kusmin, L. (1997). *Rural economic development: What makes rural communities grow?* Agricultural Information Bulletin No. 737. United States Department of Agriculture.

Arai, A.B. (2000). Self-employment as a response to the double day for women and men in Canada. *The Canadian Review of Sociology and Anthropology,* 37(2), 125-142.

Barkley, D. L. (1993). Economic adaptation: Alternatives for non-metropolitan areas. Boulder, CO: Westview Press.

Birley, S. (1989). Female entrepreneurs: Are they really different? *Journal of Small Business Management,* 32-37.

Clark, T. & James, F.J. (1992). Women-owned businesses: Dimensions and policy issues. *Economic Development Quarterly,* 6(1), 25-40.

Economic Research Service. (2003a, July 15). Pennsylvania State Fact Sheet. www.ers.usda.gov/StateFacts/PA.HTM Retrieved August 5, 2003.

Economic Research Service.(2003b). Measuring rurality: Rural-urban continnum codes. www.ers.usda.gov/Briefing/Rurality/RuralUrbCon Retrieved August 9, 2003.

Economic Research Service.(2003c). Measuring rurality: New definitions in 2003. www.ers.usda.gov/Briefing/Rurality/Newdefinitions Retrieved August 9, 2003.

Fendley, K. & Christenson, J. A. (1989). Rural reflation: An idea for community development. *Journal of the community development society*, 20(1), 103-115.

Glancey, K. (1998). Determinants of growth and profitability in small entrepreneurial firms. *International Journal of Entrepreneurial Behavior & Research,* 4(1).

Goffee, R. & Scase, R. (1982). *Women in charge.* London: George Allen & Unwin.

Henderson, J. (2002). Building the rural economy with high-growth entrepreneurs. *Economic Review*, 3rd Quarter, 45-70.

Hout, M. & Rosen, H.(2000). Self-employment, family background, and race. *Journal of Human Resources*, 35(4), 670-692.

Jack, S. L., & Anderson, A. R. (2002). The effects of embeddedness on the entrepreneurial process. *Journal of Business Venturing*, 17, 467-487.

Kalleberg, A. L. & Leicht, K. T. (1991). Gender and organizational performance: Determinants of small business survival and success. *Academy of Management Journal,* 34(1), 136-161.

Kale, S. (1989). Theoretical contributions to the understanding of U.S. Nonmetropolitan Economic Change. *Economic Development Quarterly,* 3, 58-69.

Kean, R., Gaskill, L., Leistritz, L., & Jasper, C. (1998). Effects of community characteristics, business environment, and competitive strategies on rural retail business performance. *Journal of Small Business Management,* 36(2), 45-57.

Kilkenny, M., Nalbarte, L. & Besser, T. (1999). Reciprocated community support and small-town business success. *Entrepreneurship & Regional Development, 11*, 231-246.

Lichter, D.T. (1989). The underemployment of American rural women: Prevalence, trends and spatial inequality. *Journal of Rural Studies,* 5(2), 199-208.

Lin, X, Buss, T.F. & Popovich, M. (1990). Entrepreneurship is alive and well in rural America: A four-state study. *Economic Development Quarterly,* 4 (3), 254-259.

Lombard, K. V. (2001). Female self-employment and demand for flexible, nonstandard work schedules. *Economic Inquiry*, 39(2), 214-237.

Loscocco, K. A. & Leicht, K. T. (1993). Gender, work-family linkages, and economic success among small business owners. *Journal of Marriage and the Family*, 55, 875-887.

Low, S., Henderson, J., & Weiler, S. (2005). Gauging a region's entrepreneurial potential. *Economic Review - Federal Bank of Kansas City*, 90(3), 61-89.

MacKenzie, L. R. (1992). Fostering entrepreneurship as a rural economic development strategy. Economic Development Review, Fall, 38-44.

Mueller, W. (1988). Beyond blue highways. *Venture*, 10(8), 40-44.

National Foundation for Women Business Owners. (1998a, February 24). Entrepreneurial ideals motivate women to start businesses. http://www.nfwbo.org/rr018.htm Retrieved December 16, 1998

National Foundation for Women Business Owners. (1998b). NFWBO news, 1998, No. 3. www.nfwbo.org/news9803.htm Retrieved December 16, 1998

Osborne, D. (1987). Bootstrap banking. *Inc.,* 9(9 - August), 69-72.

Pennsylvania State Data Center (2005). How Pennsylvania measures up - State rankings. http://pasdc.hbg.psu.edu Retrieved February 20, 2005.

Pennsylvania State Data Center. (2001). Pennsylvania's women-owned businesses Rank 7th in nation. *Research Brief*. June 14, 2001.

Robinson, S., (2001). An examination of entrepreneurial motives and their influence on the way rural women small business owners manage their employees. *Journal of Developmental Entrepreneurship*, 6(2), 151-167.

Small Business Administration. (2001). *Advancing rural America*. Washington, D.C.: Office of Advocacy.

Sullivan, P., Halbrendt, C., Wang, Q., & Scannell, E. (1997). Exploring female entrepreneurship in rural Vermont and its implications for rural America. *Economic Development Review,* Fall, 37-42.

Tigges, L. M. & Green, G. P. (1994). Small business success among men- and women-owned firms in rural areas. *Rural Sociology,* 59, 289-309.

Trucker, S. W., & Lockhart, C. D. (1989). Maryland small business development financing authority's equity participation investment program. *Economic Development review*, 7(2), 60-61.

Tosterud, R. & Habbershon, G. (1992). Rural entrepreneurship: A preliminary study. *South Dakota Business Review*.

Westland, H. & Bolton, R. (2003). Local social capital and entrepreneurship. *Small Business Economics*, 21, 77-113.

U.S. Census Bureau. (2005). www.census.gov. Retrieved December 3, 2005.

A COMPARISON OF FAMILY-MEMBER AND NON-FAMILY-MEMBER MANAGERS IN AMERICAN FAMILY BUSINESSES

Robert N. Lussier, Springfield College
Matthew C. Sonfield, Hofstra University

ABSTRACT

This exploratory study contributes to the United States family businesses literature by investigating the relationships between the percentage of non-family-member managers in a family business and a variety of management activities, styles and characteristics of that business. The research design is survey data collection with a sample of 159 family businesses. The regression findings used to test nine hypotheses indicate that although the nine independent variable model is significant, only the percentage of women involved in the operation of the business and the use of sophisticated financial management methods are significantly related to the percentage of non-family managers. Implications for family firm owner/managers, for consultants to family business, and for researchers are presented.

INTRODUCTION

Family businesses often employ non-family-members as managers. The purpose of this study was to investigate this issue with regard to how the inclusion of non-family-member managers relates to various managerial activities, styles and practices in such firms. The terms "family business" and "family firm" will be used interchangeably throughout this article.

This study contributes to the literature on family business, as there has been limited research into the issue of family managers (FM's) versus non-family managers (NFM's) in family businesses. Chua, Chrisman and Sharma, who have conducted a number of empirical studies in the field of family business, concluded that "issues related to non-family managers [in family firms] have received very little attention by researchers" and "there is definitely a gap in our understanding of the role played by non-family managers in the family business" (2003, pp. 102, 103).

These researchers, and others in the field of family business, continue to recognize a significant gap in the literature with regard to the issue of family-member versus non-family-member managers in family firms. Chrisman, Chua, and Sharma (2005) stated that many questions remain unanswered and much interesting research remains to be done to determine how family

involvement affects firm performance. Similarly, Ensley and Pearson (2005) concluded that family business research needs to identify the nature of family involvement in top management teams, and Nordqvist (2005) agreed that this is a breach in the literature that has not received much attention. Chrisman, Chua, and Steier also concurred with the need to better understand top management teams in family businesses as "this is a topic of great importance since the decisions of top mangers may determine the extent to which a family business obtains distinctive familiness and superior economic performance" (2005, p. 241).

The importance of this study is that it brings new empirical research to these issues of FMs and NFMs in family business management, adding to the limited prior empirical studies. The results of this research should be of value not only to current and future researchers in this area, but should also be of value to consultants to family businesses and to family business owner/managers themselves, both of whom may gain insight into the possible impact of having non-family managers in family businesses.

MANAGEMENT ACTIVITIES, STYLES AND CHARACTERISTICS

Definitions of a "family business" generally include the criterion of the prevalence of family members in the management team (yet some definitions allow for the possibility of family ownership without any family-member-managers). Still, an extensive review of the family business literature revealed few academic papers or journal articles that investigated the impact of NFM's on the management activities, styles and practices of family firms. Those papers and articles that did touch on this topic usually did so in a tangential manner and/or in a conceptual or anecdotal method, rather than via empirical investigation. Still few in number, but somewhat more frequent were papers and articles that compared family businesses and non-family businesses, which is an issue quite different in nature. Another related but again a different issue is the use of non-family-members on the corporate or advisory *boards* (but not in the *management*) of family firms, a topic occasionally investigated and the (largely anecdotal and conceptual) focus of an entire issue in the first year of publication of the *Family Business Review* (1988 v.1 n.3).

Yet some prior studies did indeed investigate FM's and NFM's in family firms. Several analyses have focused on the issue of how a family firm CEO should adapt to working with non-family managers, and the difficulty of delegating managerial responsibilities to non-family-members (Firnstahl 1986; Goffe & Scasse 1985; Hofer & Charan 1984; Mathews 1984; Perrigo 1975). The reverse issue - how to facilitate the adaptation by the non-family-manager to the family firm's culture and goals-was considered by Dyer (1989) and by Mitchell, Morse and Sharma (2003), who pointed out that NFM's must adapt to the family firm and need assistance in doing so. Other investigations regarding FM's and NFM's focused on compensation for NFM's (McConaughy 2000; Poza, Alfred & Maheshawi 1997), and on retention of NFM's (Ward 1997). And Gallo and Vilaseca

(1996) investigated the possible performance benefits of family firms with NFM's versus those without.

Agency theory has been used to explain and understand the relationship between FM's and NFM's in family firms (Chua et al. 2003). These researchers empirically investigated the percentage of NFM's in the management team of a family firm and its relationship to the FM's concerns about their relationships with NFM's. Among their conclusions was that past assumptions of zero or low agency costs in family firms require further thinking, as these costs are more complex and asymmetric than previous supposed.

Other studies, most being anecdotal and conceptual, relate the advantages and disadvantages of family-members versus non-family-members as managers of family firms. Some of these studies see positive benefits of FM's, such as extra-ordinary commitment (Donnelly 1964; Horton 1986), more warm, friendly and intimate relationships within the management team (Horton 1986; Staff 1981), the potential for deep firm-specific tacit knowledge, often based on early involvement in the firm (Lane & Lubatkin 1998), governance advantages (Carney 2005), and the creation of a synergy in the top management team due to higher cohesion, potency, and positive task conflict (Ensley & Pearson 2005). Marcus & Hall (1992) found a preponderance of FM's as benefiting the firm's service providers, and Goody (1996) concludes that such preponderance facilitates firm growth as members of succeeding family generations are available to open new branches of the company.

Yet some studies see a negative aspect to a firm's managers being members of the same family. Restricting management positions primarily to family members may lead to hiring sub-optimal people who can not be easily dismissed (Dunn 1995; Whyte 1996), and can lead to greater conflict because of non-merit-based promotion criteria (Leyton 1970: Wong 1988). Furthermore, qualified non-family-member managers may avoid family firms where their potential for growth, promotion and remuneration is hampered (Covin 1994a; Coven 1994b; Donnelly 1964; Feigener, Brown, Prince and File 1996; Horton 1986; Stewart 2003). Dhaliwal (1998) and Song (1999) concluded that in many cultures, kinship criteria in choosing managers reduce the managerial opportunities and role for female members of the family.

Another group of studies investigate the negative impact of NFM's in family firms. Several researchers concluded that the presence of NFM's can result in "creative destruction" when NFM's create too much firm growth and thus weaken family managerial and/or financial control (Morck & Yeung 2003; Morck, Strangeland & Yeung 2000; Olson, 1963, 1982, 2000), and the fear of such "creative destruction" may in turn lead to FM's blocking or discouraging NFMs' creativity and innovation and thus stifle desirable company growth. Other studies have reported a mixture of FM's and NFM's in the same firm may lead to greater conflict within the managerial team (Schultz, Lubatkin & Dino 2003; Schultz, Lubatkin, Dino & Buchholtz 2001).

Responding to these various positive and negative conclusions about the inclusion of NFM's in family firms, several writers focus on the need to socialize new NFM's, clearly communicate to them existing family values and objectives, and tie the interests of the NFM's to the firm, for

example via stock ownership and board membership (Astrachan & Kolenko 1994; Berenbeim 1990; Dyer 1989; Gubitta & Gianecchino 2002; Sirmon & Hitt 2003). Also, some family business researchers have focused on developmental issues or the stages of evolution of family business growth. Gersick, Davis, Hampton, and Lansberg (1997) published a four-stage model of family firm development, and Peiser and Wooten (1983) focused on the life-cycle changes in family businesses. As family firms grow, these researchers found a likelihood of bringing greater numbers of non-family managers into the firm. Thus, the body of literature specifically relating to FM's and NFM's in family firms provides limited empirical evidence and little consensus or clear conclusions.

HYPOTHESES

As previously explained, the purpose of this study was to investigate family businesses with regard to the degree to which such firms employ non-family member managers. How does the percentage of non-family-member managers to family-member managers in a family firm relate to the managerial activities, styles and practices of that firm? The hypotheses used for this current study are based on the hypotheses used in previous studies, conducted by the authors, of family firm management activities, styles and practices, which in turn derived from findings and propositions developed by earlier researchers who investigated family firms. Due to the limited prior empirical research with this specific FM vs. NFM focus, and the exploratory nature of this current research, hypotheses involving nine basic family business issues have been chosen for testing, rather than focusing on only a few specific managerial issues. The significance of the various hypothesis test results may indicate that some factors are more worthy of further research and analysis than are others.

Furthermore, because there are minimal and mixed prior findings with regard to FM's and NFM's in family firms, the null hypothesis is used throughout. As explained above, there has been minimal prior empirical research focusing specifically on FMs versus NFMs, and thus little resulting consensus on their impact upon family firms. Therefore the following hypotheses were developed because they each refer to an aspect of family business that has received significant attention in the overall area of family business research. For each hypothesis, some important citations and summaries of prior research in the specific area are presented, although most of these earlier researchers did not focus specifically on the FM versus NFM issue.

Studying gender issues in family firms, Nelton (1998) stated that daughters and wives are raising to leadership positions in family firms more frequently than in the past, and that the occurrence of daughters taking over businesses in traditionally male-dominated industries is increasing rapidly. Focusing on societal trends rather than family firm generational issues, Cole (1997) reported the number of women in family businesses increasing. More generally, U.S. Census Bureau data showed women-owned firms growing more rapidly than those owned by men (Office

of Advocacy 2001). Thus we find an increasing research focus on women family members in the ownership and management of family firms. This leads to:

H1: The percentage of women family members involved in the operations of the firm will not be significantly related to the percentage of non-family-member managers.

Another aspect of family business behavior frequently addressed in the literature is the distribution of decision-making authority in the firm. This issue was investigated by Dyer (1988) and Aronoff (1998), revealing that some family firms are more likely to engage in team management, with parents, children and siblings in the firm all having equality and participative involvement in important decision-making, even if one family member is still the nominal leader of the business. This research focus leads to:

H2: The use of a "team-management" style in a family firm will not be significantly related to the percentage of non-family-member managers.

Interpersonal dynamics, including conflict and disagreement among family members, has been a major focus of family firm research. Conflict can exist when siblings, spouses or other relatives participate in management and/or ownership, and conflict can also arise between members of different generations. Researchers who have focused on this issue have included Beckhard and Dyer (1983) and Davis and Harveston (1999, 2001). This leads to:

H3 Conflict and disagreement among family members will not be significantly related to the percentage of non-family-member managers.

Another major focus of the literature on family firms has been succession. The primary issues here involve the difficulties founders have in "letting go" and passing on the reins of control and authority, the lack of preparation for leadership next-generation family members often receive, and thus the need for, and importance of, succession planning (Davis 1983; Handler 1994; Upton & Heck 1997). Dyer (1988) investigated "culture and continuity" in family firms, and the need for firm founders to understand the effects of a firm's culture and that culture can either constrain or facilitate successful family succession. Fiegener and Prince (1994) compared successor planning and development in family and non-family firms, and found that family firms favor more personal relationship-oriented forms of successor development, while non-family firms utilize more formal and task-oriented methods. Building upon these and other studies of succession in family firms, Stavrou (1998) developed a conceptual model to explain how next-generation family members are

chosen for successor management positions. This model involves four factors which define the context for succession: *family*, *business*, *personal* and *market*. This leads to:

H4: The formulation of specific succession plans will not be significantly related to the percentage of non-family-member managers

A number of researchers have focused on the management styles and practices in family firms, noting that they can range from "informal, subjective and paternalistic" styles of management to "formal, objective and professional" in nature (Aronoff 1998; Cole & Wolken 1995; Coleman & Carsky 1999; Dyer 1988; Filbeck & Lee 2000; McConaughy & Phillips, 1999; Miller, McLeod & Oh 2001; Schein 1983). "Professional" management may involve the following: (a) the use of outside consultants, advisors and professional services, (b) more time engaged in *strategic* management activities, and (c) the use of more sophisticated financial management tools. These research issues lead to three hypotheses:

H5: The use of outside consultants, advisors and professional services will not be significantly related to the percentage of non-family-member managers.

H6: The time spent engaged in strategic management activities will not be significantly related to the percentage of non-family-member managers.

H7: The use of sophisticated methods of financial management will not be significantly related to the percentage of non-family-member managers.

Another issue of interest in the investigation of family business is "generational shadow" (Davis & Harveston 1999). In a family firm a generational shadow, shed by the founder, may be cast over the organization and the critical processes within it. In such a situation, "succession" is considered incomplete, may constrain successors, and may have dysfunctional effects on the performance of the firm. Yet this "shadow" may also have positive impact, by providing a clear set of values, direction and standards for current and subsequent firm managers. Kelly, Athanassiou and Crittenden (2000) similarly proposed that a family firm founder's "legacy centrality" will influence the strategic behavior of family member managers, with both positive and negative impact. Davis and Harveston (1999) also investigated generational shadow, but reached mixed conclusions regarding its impacts. If "generational shadow" and "legacy centrality" are valid and important components of the family business *system*, then this is an area worthy of investigation in this current study. Thus:

H8: The degree of influence by the original business objectives and methods of the founder will not be significantly related to the percentage of non-family-member managers

Family firms need not always be privately owned. Opportunities and needs for "going public" may arise. The family may not be able, or may not choose, to provide sufficient management or financial resources for growth, and outsider ownership can resolve this situation. And even publicly owned companies can continue as "family businesses," if management or financial control is maintained by the family. McConaughy (1994) found that 20% of the *Business Week 1000* firms are family-controlled, while Weber and Lavelle (2003) report that one-third of *S&P 500* companies have founding families involved in management. This leads to:

H9: Management's consideration of "going public" will not be significantly related to the percentage of non-family-member managers

METHODOLOGY

The research design was exploratory, cross-sectional, survey data collection. Questionnaires were randomly mailed or hand-delivered to family businesses in New York and Massachusetts that were identified by listings of "family businesses" in local business newspapers. Developing samples from various listings is consistent with other family business research studies (Chua, Chrisman & Sharma 1999; Teal, Upton & Seaman 2003). Also, most empirical studies of family businesses have used convenience samples (Chua et al. 2003), making this study more robust. Letters were addressed to the presidents or CEOs of the identified family firms with instructions that only the "owner-manager" complete the questionnaire, and only if they viewed their firm as a "family business." The questionnaire included: "Do you consider your company to be a family business?" and the cover letter defined "family members" as parents, children, siblings, spouses, and other close relatives.

Of the 822 surveys distributed, 272 were no longer at the address or responded that they were not family businesses. There were 149 usable returned questionnaires. After a few months a follow-up request for surveys was made to increase the sample size and to test for nonresponse bias. Twelve more questionnaires were returned for a total of 159, providing a response rate of 28.6 percent. This is a good size sample and response rate for family firm research, as 62 percent of prior family business studies included no sample at all or a sample with less than 100 family firms, and 66 percent of these were convenience samples (Bird, Welsch, Astrachan & Pistrui 2002). Also, around one-third of the articles in highly-rated small business and entrepreneurship-oriented journals had a response rate of less than 25 percent (Dennis 2003).

Nonresponse bias occurs when the answers of nonrespondents are significantly different from that of respondents. As in prior studies (Lussier 1995), nonresponse bias was minimized in this

study by comparing the 12 late participant responses to the initial respondents for difference. T-testing found no statistical significant differences at the .05 level of significance. Thus, nonresponse bias should not be problematic.

For regression testing purposes, the dependent variable is the ratio measure percentage of non-family-member managers. Participants were asked to identify their total number of managers and the number of non-family member managers. Three control variables that could potentially influence the dependent variable were included in the regression model: the number of years in business, number of employees, and industry (Lussier & Pfeifer 2000).

See Table 1 for a listing of nine independent variables in hypotheses testing with a brief explanation of operationalization and measure for each variable. In the table, all hypotheses are denoted by summary phrases; the survey questions had more detailed descriptives of each variable. The nine independent variables are Likert interval scales: "Describes our firm" 7-1 "Does Not Describe Our Firm."

Regression was used for statistical analysis. Model 1 was developed by running regression with the nine independent variables. Model 2 was developed by running regression with both the independent and control variables to determine if the control variables did in fact influence the model results.

Table 1: Regression Analysis

Model Summary *(N = 159)*

Model	R	R Square	Adjusted R^2	Std. Error of Estimate
1	.406	.165	.114	.3207
2	.444	.197	.131	.3176

Table 1: ANOVA(Continued)

Model	Sum of Squares	df	Mean Square	F	Sig
1 Regression	3.023	9	.336	3.267	
Residual	15.323	149	.103		**.001**
Total	18.347	158			
2 Regression	3.617	12	.301	2.988	
Residual	14.729	146	.101		**.001**
Total	18.347	158			

Table 1: Coefficients (Continued)							
Variables (H1-H9 independent)	*Mean*	*Model 1B*	*t*	*Sig*	*Model 2B*	*t*	*Sig*
% of non-family managers—Dependent Variable	31						
(Constant)		.272	2.46	.015	.029	.177	.859
H1. % of women involved in operation of business	30	-.259	-2.63	**.009**	-.214	-2.13	**.035**
H2. Use of team-management decision style (7-1)	3.93	-.014	-1.22	.222	-.017	-1.41	.159
H3. Occurrence of conflict and disagreements (7-1)	2.44	-.008	- .566	.572	-.007	- .503	.616
H4. Formulation of specific succession plans (7-1)	3.03	-.008	- .684	.495	-.007	- .583	.561
H5. Use outside advisor/professional services (7-1)	4.16	.008	.702	.484	.001	.088	.930
H6. Time spent in strategic planning (7-1)	3.17	.013	.741	.460	.015	.859	.392
H7. Use sophisticated financial mgt methods (7-1)	3.36	.043	3.30	**.001**	.043	3.08	**.003**
H8. Influence of original founder (7-1)-	5.04	-.011	- .808	.420	-.004	- .271	.786
H9. Consider going public (7-1)	1.37	.037	1.28	.201	.039	1.33	.185
Control Variables							
Years in business	38				.002	1.73	.086
Number of employees	194				2.70	.632	.529
Industry (n / %) Product or Service	26/74				.087	1.45	.149
(7-1) Likert interval scales of "Describes our firm" 7 6 5 4 3 2 1 "Does not describe our firm."							

RESULTS

Table 1 includes descriptive statistic means for each variable with the coefficients. The regression analysis ANOVA supports the nine independent variable model ($p = .001$) relationship to the percentage of non-family member managers. When including the control variables with the independent variables, the model significance is unchanged. Thus, the control variables (years in business, number of employees, and industry) do not influence the independent variable model in relation to the percentage of non-family managers.

Through further analysis of the model, stepwise regression was run, and the only two variables retained in the model were the percentage of women and financial methods. Regression was also run with just the percentage of women and financial methods and results were the same as stepwise regression (adjusted R square .117, F 11.43, $p = .000$), and results were not significantly different from the results of Model 1 and 2 (Table 1). Thus, the two independent variable model is as relevant as the nine and twelve variable models.

The analysis of the variable coefficients supports seven of the nine null hypotheses. Only the two factors of the percentage of women involved in the operation of the business ($p = .009$), and the use of sophisticated financial management methods ($p = .001$) have a significant relationship to the percentage of non-family managers. Thus, hypotheses 1 and 7 are rejected because for each there is a significant relationship between them and the dependent variable, while the other null hypotheses are accepted.

DISCUSSION

As previously noted, the existing literature on family managers versus non-family managers in family firms is limited, with the majority of the suppositions and conclusions presented being based on conceptual or anecdotal analyses; and as Chua et al. (2003) concluded, there is a strong need for empirical research to increase and strengthen the body of literature and reduce the gap in our understanding of this issue. This exploratory research study is an early step in that direction. This study's statistically-derived data indicate that the inclusion of non-family-members in the management of family firms has a significant *positive* relationship with the use of sophisticated financial management methods, and a significant *negative* relationship with an increase in the percentage of women involved in the operations of the firm. In any research, these quantitative results should be complemented by qualitative analysis (Guillén 1994). And these two significant relationships as measured through quantitative statistical testing do indeed make some sense if evaluated in light of prior qualitative family business literature.

The qualitative family business literature describes how "familiness" and "family systems" impact the practice of management in family businesses and make it different from non-family "professional" management. Thus the addition of non-family-member managers in family businesses can be expected to reduce "familiness" and dilute the "family system" and thus move management practices toward the "professional" management model. Yet only one of the three null hypotheses (H5, H6 and H7) which focus on "professional" management activities was rejected. While a greater percentage of non-family-member managers correlates with the use of sophisticated financial management methods (H7), this study indicated no significant correlations with the use of outside advisors, consultants or professional services (H5), or with time spent in strategic management activities (H6).

Also, this analysis found a significant *negative* relationship between the inclusion of non-family-members in the management of family firms and the percentage of women involved in the operations of the firm. This relationship can perhaps be explained by the fact that there are far fewer women than men among upper-level managers in the private sector (U.S. EEOC 2004). A sizable body of literature exists to explain this phenomenon, generally focusing on the "glass ceiling" (Chernesky 2003; Gaumer 2005; Whitehead 2001). Thus, as family firms bring in non-family-member managers from the outside, the majority of these new managers may be men.

Clearly, with seven of the nine null hypotheses supported, the findings of this research study question the impact of "familiness" and the "family system" and indicate a need for further research in this area. Family business research in general is a relatively young field, and the focus on family-member managers and non-family-member managers has been minimal.

As with all research, this study has limitations. The sample is from two northeast states (Massachusetts and New York), and thus further research with a broader geographic focus is needed to support this study. Also, as discussed earlier, this study was broad in nature with hypotheses based on a variety of areas in the field of family business that have received prior research attention. If more prior research specifically regarding FMs versus NFMs had existed, then this study could have concentrated in greater depth on a smaller number of variables previously identified as worthy of continued and more intense study.

IMPLICATIONS

This research should be of both interest and value to practitioners, consultants and researchers. This exploratory study can be considered an early stage in a research process that may eventually enable family business owner/managers to better understand the possible impacts of bringing non-family managers into a family business. What would be the likely changes in management activities, styles and characteristics, and would they be desirable and beneficial or dysfunctional for the family firm? This is also a question that consultants to family businesses must consider as they analyze such family firms and make recommendations regarding alternative strategies for growth.

For researchers in the field of family business, these findings build upon earlier and generally non-empirical studies, provide some preliminary findings that future research can focus on, replicate, and build upon, and may indicate some specific factors especially worthy of further investigation into this limited area of family business research.

Furthermore, this research raises many ideas for future research which, for example, might focus on factors not considered in this study, such gender issues, the varying levels of profit motivation among family firm owners, or the influence of different national cultures upon family business management practice. The potential scope for future research relating to family-member and non-family-member managers in family business, which is currently in its early stages, is indeed extensive.

Thus, this study begins to fill a gap in the family business literature identified by prior researchers. This investigation indicates that the inclusion of non-family-members in the management of family businesses may be associated with some "professional" management activities, styles and characteristics. The forces of "familiness" and the *system* of the family firm, central to the family business literature, may be weakened by the inclusion of non-family managers.

These non-family managers bring both strengths and weaknesses to the family firm, and the nature of family firm management may be transformed by their presence.

REFERENCES

Aronoff, C.E. (1998). Megatrends in family business. *Family Business Review, 11*(3), 181-192.

Astrachan, J.H. & T.A. Kolenko. (1994). A neglected factor explaining family business success: Human resources practices. *Family Business Review, 7*(3), 251-262.

Beckhard, R. & W. Dyer. (1983). Managing continuity in family-owned business. O*rganizational Dynamics*, *12*(1), 5-12.

Berenbeim, R. (1990). How business families manage the transition from owner to professional management. *Family Business Review, 3*(1), 69-110.

Bird, B., H. Welsh, J.H. Astrachan & D. Pistrui. (2002). Family business research: The evolution of an academic field. *Family Business Review, 15*(4), 337-350.

Carney, M. (2005). Corporate governance and competitive advantage in family-controlled firms. *Entrepreneurship Theory and Practice, 29*(3), 249-265.

Chernesky, R. (2003). Examining the glass ceiling: Gender influences on promotion decisions. *Administration in Social Work, 27*(2), 13-18.

Chrisman, J.J., J.H. Chua & P. Sharma. (2005). Trends and directions in the development of a strategic management theory of the family firm. *Entrepreneurship Theory and Practice, 29*(5), 555-575.

Chrisman, J.J., J.H Chua & L.P. Steier. (2005). Sources and consequences of distinctive familiness: An introduction. *Entrepreneurship Theory and Practice, 29*(3), 237-253.

Chua, J., J. Chrisman, & P. Sharma. (1999). Defining the family business by behavior, *Entrepreneurship Theory and Practice, 23*(4), 19-40.

Chua, J., J. Chrisman, & P. Sharma. (2003). Succession and nonsuccession concern of family firms and agency relationships with nonfamily managers. *Family Business Review, 16*(2), 89-108.

Cole, P. (1997). Women in family business. *Family Business Review, 10*(4), 353-371.

Cole, R. & J. Wolken. (1995). Financial services used by small businesses: Evidence from the 1993 national survey of small business finances. *Federal Reserve Bulletin,* (July), 629-666.

Coleman, S. & M. Carsky. (1999). Sources of capital for small family-owned businesses: Evidence from the national survey of small business finances. *Family Business Review, 12*(1):73-85.

Covin, T.J. (1994a). Perceptions of family-owned firms: The impact of gender and educational level. *Journal of Small Business Management, 32*(3), 29-39.

Covin, T.J. (1994b). Profiling preferences for employment in family-owned firms. *Family Business Review*, *7*(3), 287-296.

Davis, P. (1983). Realizing the potential of the family business. *Organizational Dynamics 12*(1), 47-56.

Davis, P. & P. Harveston. (1999). In the founder's shadow: Conflict in the family firm. *Family Business Review, 12*(1), 311-323.

Davis, P. & P. Harveston. (2001). The phenomenon of substantive conflict in the family firm: A cross-generational study. *Journal of Small Business Management, 39*(1), 14-30.

Dennis, W. (2003). Raising response rates in mail surveys of small business owners: Results of an experiment. *Journal of Small Business Management, 41*(3), 278-295.

Dhaliwal, S. (1998). Silent contributors: Asian family entrepreneurs and women in business. *Women's Studies International Forum, 21,* 463-474.

Donnelly, R. (1964). The family business. *Harvard Business Review, 42*(4), 94-105.

Dunn, B. (1995). Success themes in Scottish family enterprises: Philosophies and practices. *Family Business Review, 8*(1), 17-28.

Dyer, W.G. (1988). Culture and continuity in family firms. *Family Business Review, 1*(1), 37-50.

Dyer, W.G. (1989). Integrating professional management into a family owned business. *Family Business Review, 2*(3), 221-235.

Ensley, M.D. & A.W. Pearson. (2005). An exploratory comparison of the behavioral dynamics of top management teams in family and nonfamily new ventures cohesion, conflict, potency and consensus. *Entrepreneurship Theory and Practice, 29*(3), 267-284.

Fiegener, M. K. & R.A. Prince. (1994). A comparison of successor development in family and nonfamily businesses. *Family Business Review, 7*(4), 313-329.

Feigener, M.K., B.M. Brown, R.A. Prince & K.M. File. (1996). Passing on strategic vision. *Journal of Small Business Management,* 34(3), 15-26.

Filbeck G. & S. Lee. (2000). Financial management techniques in family businesses. *Family Business Review, 13*(3), 201-216.

Firnstahl, T.W. (1986). Letting go. *Harvard Business Review, 64*(5), 14-18.

Gallo, M.A. & A. Vilaseca. (1996). Finance in family business. *Family Business Review, 9*(4), 387-402.

Gaumer, C. (2005). Enhancing organizational competitiveness: Causes and effects of stress on women. *Journal of Workplace Behavioral Health, 21*(2), 31-43.

Gersick, K., J. Davis, M. Hampton, & I. Lansberg. (1997). *Generation to Generation: Life Cycles of the Family Business.* Boston, MA: Harvard Business School.

Goffe, R. & R. Scasse. (1985). Proprietorial control in family firms: Some functions of the 'quasi-organic' management systems. *Journal of Management Studies, 22*, 53-68.

Goody, J. (1996). *Kinship*. In A. Barnard & J. Spencer (eds.) *Encyclopedia of Social and Cultural Anthropology*, London: Routledge, 311-318.

Gubitta, P. & M. Gianecchini. (2002). Governance and flexibility in family-owned SMEs. *Family Business Review, 15*(4), 277-298.

Guillén, M. (1994). *Models of Management.* Chicago: Univ. of Chicago Press.

Handler, W.C. (1994). Succession in family business. *Family Business Review, 7*(2), 133-157.

Hofer, C.W. & R. Charan. (1984). The transition to professional management: Mission impossible? *American Journal of Small Business, 9*(1), 1-11.

Horton, T.P. (1986). Managing in a family way. *Management Review, 75*(2), 3.

Kelly, L.M., N. Athanassiou & W.F. Crittenden. (2000). Founder centrality and strategic behavior in the family-owned firm. *Entrepreneurship Theory and Practice,* 25(2), 27-42.

Lane, P.J. & M. Lubatkin. (1998). Relative absorptive capacity and interorganizational learning. *Strategic Management Journal, 19*, 461-477.

Leyton, E. (1970). Composite descent groups in Canada. In C.C. Harris (ed.), *Readings in Kinship in Urban Society* Oxford UK: Pergamon.

Lussier, R.N. (1995). A nonfinancial success versus failure prediction model for young firms. *Journal of Small Business Management*, *33*(1), 8-20.

Lussier, R.N. & S. Pfeifer. (2000). A comparison of business success versus failure variables between the U.S. and Central Eastern Europe Croatian Entrepreneurs. *Entrepreneurship Theory and Practice, 24*(4), 59-67.

Marcus, G.E. & P.D. Hall. (1992). *Lives in trust: The fortunes of dynastic families in late twentieth-century America.* Boulder, CO: Westview.

Mathews, G.H. (1984). Run your business or build an organization? *Harvard Business Review, 62*(2), 34-44.

McConaughy, D.L. (1994). *Founding family controlled corporations: An agency-theoretic analysis of corporate ownership structure and its impact upon corporate efficiency, value, and capital structure.* Unpublished doctoral dissertation, University of Cincinnati.

McConaughy, D.L. (2000). Family CEOs vs. nonfamily CEOs in the family-controlled firm: An examination of the level and sensitivity of pay to performance. *Family Business Review, 13*(2), 121-132.

McConaughy, D. L. & G.M. Phillips. (1999). Founders versus decedents: The profitability, efficiency, growth characteristics and financing in large, public, founding-family-controlled firms. *Family Business Review, 12*(2), 123-131.

Miller, N., H. McLeod & K. Oh. (2001). Managing family businesses in small communities. *Journal of Small Business Management, 39*(1), 73-87.

Mitchell, R., E. Morse & P. Sharma. (2003). The transacting cognitions of nonfamily employees in the family business setting. *Journal of Business Venturing, 18*(4), 533-551.

Morck, R. & B. Yeung. (2003). Agency problems in large family business groups. *Entrepreneurship Theory and Practice, 27*(4), 367-382.

Morck, R., D.A. Strangeland, & B. Yeung. (2000). Inherited wealth, corporate control and economic growth: The Canadian disease. In R. Morck (ed.) *Concentrated Corporate Ownership* Chicago: University of Chicago Press, 319-369.

Nelton, S. (1998). The rise of women in family firms: A call for research now. *Family Business Review, 11*(3), 215-218.

Nordqvist, M. (2005). Familiness in top management teams: Commentary on Ensley and Pearson's: An exploratory comparison of the behavioral dynamics of tom management teams in family and nonfamily new ventures: Cohesion, conflict, potency, and consensus. *Entrepreneurship Theory and Practice, 29*(3), 285-290.

Olson, M. (1963). Rapid growth as a destabilizing force. *Journal of Economic History, 23*(4), 529-552.

Olson, M. (1982). *The Rise and Decline of Nations* New Haven CT: Yale University Press.

Olson, M. (2000). Power and Prosperity: Outgrowing Communist and Capitalist Dictatorships. New York: Basic Books.

Office of Advocacy. (2001). *Women-Owned Firms Continue Dramatic Growth*. (SBA No: 01-03 ADVO). Washington, D.C.: U.S. Small Business Administration (April 4).

Perrigo, A.E.B. (1975). Delegation and succession in the small firm. *Personnel Management* (May), 35-37.

Peiser, R. & L. Wooten. (1983). Life-cycle changes in small family businesses. *Business Horizons* (May-June), 58-65.

Poza, E.F., T. Alfred & A. Maheshawi. (1997). Stakeholder perceptions of culture and management practices in family and family firms-A preliminary report. *Family Business Review, 10*(2), 135-155.

Schein, E. (1983). The role of the founder in creating organizational culture. *Organizational Dynamics, 12*(1), 13-28.

Schultz, W.S., M.H. Lubatkin & R.N. Dino. (2003). Toward a theory of agency and altruism in family firms. *Journal of Business Venturing, 18*, 473-490.

Schultz, W.S., M.H. Lubatkin, R.N. Dino & A.K. Buchholtz. (2001). Agency relationships in family firms: Theory and evidence. *Organizational Science, 12*(2), 99-116.

Sirmon, D.G. & M.A. Hitt. (2003). Managing resources: Linking unique resources, management and wealth creation in family firms. *Entrepreneurship Theory and Practice, 27*(4), 339-358.

Sonfield, M.C. & R.N. Lussier. (2004). First-, second- and third-generation family firms: A comparison. *Family Business Review,* 17(3), 189-202.

Song, M. (1999). *Helping Out: Children's Labor in Ethnic Businesses*. Philadelphia: Temple University Press, 110-111.

Staff. (1981). All in the family. *Management* Review, *70*(7), 4-5.

Stavrou, E.T. (1998). A four factor model: A guide to planning next generation involvement in the family firm. *Family Business Review, 11*(2), 135-142.

Stewart, A. (2003). Help one another, use one another: Toward anthropology of family business. *Entrepreneurship Theory and Practice, 27*(4), 383-396.

Teal, E., N. Upton & S. Seaman. (2003). A comparative analysis of strategic marketing practices of high-growth U.S. family and nonfamily firms, *Journal of Developmental Entrepreneurship, 8*(2), 177-195.

Upton, N. & R. Heck. (1997). The family business dimension of entrepreneurship, in *Entrepreneurship 2000*, D. Sexton and R. Smilor, eds. Chicago: Upstart Publishing:243-266.

U.S. EEOC (Equal Employment Opportunity Commission). (2004). Glass ceilings: The status of women as officials and managers. www.eeoc.gov/stats/reports. Retrieved January 4, 2007.

Ward, J.L. (1997). Growing the family business: Special challenges and best practices. *Family Business Review, 10*(4), 323-337.

Weber, J. & L. Lavelle. (2003). Family, Inc. *Business Week,* (November 10), 100-114.

Whitehead, S. (2001). Woman as manager: A seductive ontology. *Gender, Work & Organization, 8*(1), 84-108.

Whyte, M.K. (1996). The Chinese family and economic development: Obstacle or engine? *Economic Development and Cultural Change, 44*, 1-30.

Wong, S.L. (1988). *Emigrant Entrepreneurs: Shanghai Industrialist in Hong Kong*. Hong Kong: Oxford University Press.

ENTREPRENEURIAL PROFILING: A DECISION POLICY ANALYSIS OF THE INFLUENCE OF ENTREPRENEURIAL SELF-EFFICACY ON ENTREPRENEURIAL INTENT

Jeff Brice, Jr., Texas Southern University
Barbara Spencer, Mississippi State University

ABSTRACT

An unresolved issue in the study of entrepreneurs is what factors do individuals consider before attempting to establish new ventures? Also, which of these factors are most influential to a decision after deliberation is complete? Previous studies have examined similar questions by developing inquiries of entrepreneurial self-efficacy that are based solely on discrete business functions. However, not only are functional assessments too venture-specific for the general nature of most entrepreneurial self-efficacy research, they are usually operationalized with self-report direct surveys that are highly susceptible to social desirability response bias.

In this study, we apply a decision modeling methodology to empirically assess the influence of human competencies in the entrepreneurial self-efficacy assessment process. Decision modeling is a within-subjects analytical procedure that is resistant to external biases. A significant finding is that self-efficacy assessments utilizing entrepreneurial competencies are able to successfully discriminate individuals with strong entrepreneurial intentions from others. In fact, the resultant decision profile of those with high entrepreneurial intentions parallels that of actual entrepreneurs. Results, limitations, and implications for future research are presented.

INTRODUCTION

A principle inquiry in the research in entrepreneurship is what factors enhance the probability that someone will decide to start and manage a new business enterprise? This query is important because, depending it's the resolution, we will develop diverse methods of training and supporting individuals to create their own businesses. Therefore, this vein of study should generate significant insights not only for academics, but also to practitioners, policy makers, and politicians.

Early research on the decision to start a new business tended to focus either on contextual factors such as job displacement (Shapero & Sokol, 1982), prior work experience (Mokry, 1988) or on individual personality factors such as the need for achievement (McClelland, 1965), internal locus of control (Begley & Boyd, 1987), acceptance of risk (Brockhaus & Horowitz, 1986), and the tolerance of ambiguity (Schere, 1982). More recent models of entrepreneurial decision have adopted a perspective in which the individual is an intentional decision maker and actor, engaging in the rational appraisal of situational and personal factors (Bird, 1988, Krueger, 1993). Thus, from the newer cognitive perspective, external factors and personality factors still influence the entrepreneurial decision, but only insofar as they are perceived and interpreted by the potential entrepreneur.

Krueger, Reilly, and Carsrud (2000) compared two models of entrepreneurial decision-making based on the premise that intention to start a new venture is the major predictor of entrepreneurial behavior. In both models (Shapero & Sokol, 1982; Ajzen, 1991), self-efficacy emerged an important influence on intention. In essence, the belief that one can personally execute the behaviors needed to create a new venture is professed to enhance the intent to do so (Boyd & Vozikis, 1994; Krueger & Brazeal, 1994). The purpose of the present paper is to build on this cognitive approach by profiling how individuals weigh different criteria when judging entrepreneurial efficacy.

LITERATURE REVIEW

Entrepreneurial Self-Efficacy

While relatively new to research on entrepreneurship, self-efficacy is widely recognized as a key construct in social learning theory (Bandura, 1977), a perspective which assumes that behavior, cognitions, and the environment continually influence each other in the mindset of individuals (Bandura, 1977, 1986). Self-efficacy refers to people's judgments regarding their ability to perform a given activity (Bandura, 1977, 1982, and1986) and is proposed to influence individual choices, goals, emotional reactions, effort, ability to cope, and persistence (Gist, Stevens, & Bavetta, 1991). Hackett and Betz (1981) proposed that Bandura's (1977) theory of self-efficacy provides a useful conceptual framework from which to predict the occupational preferences of individuals. Based on this foundation, Boyd and Vozikis (1994) and Krueger and Brazeal (1994) helped lodge the notion of self-efficacy firmly in the entrepreneurship literature by suggesting that perceptions of entrepreneurial self-efficacy could contribute significantly to an individual's deliberations about whether, or not, to pursue an entrepreneurial career.

Even before the appearance of these seminal pieces, Chandler and Jansen (1992) conducted research on business founders' self-assessments of "proficiency in the entrepreneurial function."

A strength of this research was their development of a scale measuring five human competencies associated with the entrepreneurial, managerial, and technical-functional roles of business founders (Mintzberg & Waters, 1982; Pavett & Lau, 1983; Schein, 1987). Chandler and Jansen (1992) demonstrated that founders of the most successful firms in their sample rated themselves higher than others on capabilities associated with all three of these roles.

More recently, Chen, Greene, and Crick (1998) operationalized entrepreneurial self-efficacy (ESE) as self-assessed "certainty" in dealing with 26 specific tasks identified from prior literature and interviews with several local entrepreneurs concerning key entrepreneurial roles. After gathering self-ratings on these tasks from students and business owners/executives, they used factor analysis to combine them into five categories including marketing, innovation, management, risk-taking, and financial control. They also created an overall "ESE" measure, by taking the mean over all 26 items. Their findings showed that among students, overall ESE was significantly correlated with the stated intention to start a business. Among business executives, those who were founders rated themselves higher on total ESE and particularly, on innovation and risk-taking, than did non-founders.

While Chandler and Jansen's (1992) and Chen, Greene and Crick's (1998) results are enticing, further research on entrepreneurial self-efficacy and the intention to start a new business is needed. For instance, what criteria do people use when deciding about their aptitude to start a business? Are some efficacy criteria more important than others in making this evaluation? Chandler and Jansen's (1992) most successful entrepreneurs rated themselves highly on all competencies, while Chen, Greene and Crick's (1998) founders rated their abilities on innovation and risk-taking more highly than did non-founders. But neither study tells us which criteria people consider most, or least, important when judging their ability to start a new venture. Such information would be particularly important if it helped us to understand the decision-making processes of prospective entrepreneurs.

A second nagging unresolved issue regarding entrepreneurial self-efficacy is the problem of social desirability bias in self-assessments. Because the notion of self-efficacy inherently involves people's judgments about their ability to perform given activities (Bandura, 1982), the use of self-reported survey evaluations make sense. Yet, in such circumstances, individuals may be tempted to inflate their ratings (i.e., to impress study evaluators, among other reasons). In fact, Chen, Greene, and Crick (1998) noted that the high interfactor correlations among their component entrepreneurial self-efficacy scores may well have been caused by social desirability response bias. They stated that future researchers should think of ways to reduce social desirability.

The study described here is an effort to advance the research on entrepreneurial self-efficacy and entrepreneurial intentions and to address the social desirability limitation encountered in Chen, Greene, and Crick (1998). A decision modeling approach is applied to assess how individuals weigh several key entrepreneurial competencies in deciding whether someone would be capable of pursuing a promising business venture. This method avoids the social desirability dilemma because

respondents make hypothetical decisions based on specified cues. Decision modeling diminishes the misrepresentation of social desirability response biases that might be uncovered by asking respondents to make judgments about ambiguous situations in a seemingly external world, which serves to expose their genuine sensitivities (Fischer, 1993). Results are then compared across those who intend to start a new venture and those who do not. The following general research questions were addressed in this study:

1. *How do individuals weigh specific entrepreneurial abilities when judging someone's capability to start a new venture? Do some efficacy criteria matter more than others in making such judgments?*

2. *Can prospective entrepreneurs be discriminated from others based upon their application of efficacy criteria in assessing fitness for entrepreneurial behavior?*

Since our research employs a human competency description of entrepreneurial self-efficacy, we first review the development of the construct. We then present the decision modeling technique and its effect on decreasing social desirability response bias. Finally, we empirically evaluate the effect of entrepreneurial self-efficacy on the intention to pursue an entrepreneurial career.

Operationalizing Entrepreneurial Self-Efficacy

Bandura (1982) defined self-efficacy as the task-specific consideration of perceived fitness to perform a particular activity. In the case of entrepreneurship, entrepreneurial self-efficacy may be comprised of deliberation of those tasks that relate to the initiation and development of new ventures, which is considered emblematic of the entrepreneurial act (Livesay, 1982). One way to identify these tasks is to think about the basic functional areas of business.

For instance, a study by Scherer, Adams, Carley, and Weibe (1989) operationalized entrepreneurial self-efficacy as expertise in accounting, production, marketing, human resources, and general organizational skills. A limitation of this approach is that proficiency in all of areas may not be required for all new venture efforts. For instance, while a prospective manufacturer of industrial equipment may have to consider whether he or she is competent in all of the aforementioned functional responsibilities before attempting to develop a new venture, an independent hot-dog cart operator may only have to consider his or her basic accounting and marketing skills before launching a new hot-dog cart operation. As this example demonstrates, the assessment of specific functional abilities before new venture initiation is dependent on the scope and scale of the particular venture being considered.

Moreover, an entrepreneurial self-efficacy construct based solely on functional capabilities ignores the fact that co-opting from external sources may solve some functional shortcomings, on the part of the prospective entrepreneur. For example, an individual who lacks accounting/bookkeeping skill can easily and inexpensively purchase that service from an independent contractor. Knowing this, a prospective entrepreneur without sufficient accounting expertise may still be willing to undertake the development of a new venture. Because a negative perception of one's fitness in some functional capacities may not have the predicted effect on entrepreneurial behavior, it seems likely that a functional capability description of entrepreneurial self-efficacy may not have a decisive influence on whether or not one decides to pursue an entrepreneurial career.

Instead of considering narrow functional tasks, a different approach to clarifying entrepreneurial efficacy is to consider the broader human competencies associated with new venture development since human competency assessments are less dependent on the specification and complexity of particular new venture entry domains. Drawing from writings by Mintzberg and Waters (1982); Pavett and Lau (1983); and Schein (1987), Chandler and Jansen (1992) identified five such competencies based on the three primary roles of the entrepreneur: the entrepreneurial, managerial, and technical-functional. The idea is that both an industrial manufacturer and a hot-dog cart operator must assume all of these roles while initiating their firms, regardless of the scope or scale of their ventures.

In the entrepreneurial role, business founders examine their environment and listen to their customers to find new opportunities, and devise methods to exploit opportunities for the benefit of a new firm (Mintzberg & Waters 1982). Two competencies are involved here. First, entrepreneurs must possess the human/conceptual competency to recognize unique opportunities, and second, they require the drive to take the venture from conceptualization through to fulfillment (MacMillan, Siegel, & SubbaNarisimha, 1985; Timmons, Muzyka, Stevenson, & Bygrave, 1987; Chandler & Jansen, 1992). In the managerial role, there are also two broad competencies: leadership and organizational skills (Pavett & Lau 1983; Schein 1987), and the political competence to procure the support of network members (Pavett & Lau 1983). In the technical–functional role, business founders must have some specialized expertise in the industry within which the firm will operate (Pavett & Lau 1983; Chandler & Jansen, 1992).

In their research, Chandler and Jansen (1992) operationalized each of these five competencies with multiple items. For our purposes, each competency had to be simplified and worded as a single cue to fit into vignettes concerning prospective entrepreneurial decisions. To this end, we simplified their descriptions into the following five competency statements:

1. *Has strong leadership and organizational skills (LEAD/ORG SKILLS)*

2. *Has good sense of what customers want & need (OPP RECOGN)*

3. *Is willing to make sacrifices to avoid failure (DRIVE)*

4. *Has specific work-related technical or functional expertise (EXPERTISE)*

5. *Has political savvy needed to enlist support of key people (POLITICAL).*

The next section explains how these cues may be related to entrepreneurial intentions.

Entrepreneurial Self-Efficacy (Competencies) and Entrepreneurial Intentions

Self-efficacy is a construct indicating that behavior, cognition, and the environment influence each other in a dynamic fashion, thus allowing individuals to form beliefs about their ability to perform specific tasks (Bandura, 1977). Entrepreneurial self-efficacy (ESE) is, therefore, viewed as having the capabilities that can modify a person's belief in his or her likelihood of completing the tasks required to successfully initiate and establish a new business venture (Bandura, 1986). More specifically, entrepreneurial self-efficacy is defined as the degree to which one believes that he or she is able to successfully start a new business venture.

Past research can be used to link entrepreneurial self-efficacy and entrepreneurial intentions. Hackett and Betz (1981) projected that Bandura's (1977) theory of self-efficacy may be applied to determine the vocational inclinations of individuals. Empirical findings indicate that self-efficacy is highly involved in the career decision-making process. In fact, career self-efficacy was found to be the most important predictor of males' intentions to pursue careers in traditionally female occupations (Giles & Rea, 1999). In relation to entrepreneurship, individuals with high levels of entrepreneurial self-efficacy may also have strong occupational intentions for an entrepreneurial career. Lent, Brown, and Hackett (1994) applied self-efficacy in a social cognitive framework (Bandura, 1986) to explain three aspects of generalized career development: (1) the formation of career-relevant interests, (2) selection of a career choice option (intentions), and (3) performance and persistence in the selected occupation. Lent, et al (1994) found that self-efficacy was significantly related to career interests, career choice goals (intentions), and occupational performance. However, Lent, et al (1994) also found that self-efficacy is the sole mediator between a person's abilities and his or her career interests. These three findings taken together can be interpreted as meaning that self-efficacy may be used to predict the intended career-related intentions and behavior of individuals. It has been established that self-efficacy is the major influence on career-related behavior in Bandura's (1986) social cognitive theory (Lent, et al, 1994). Since social cognitive theory proposes that individuals choose to undertake tasks in which they are confident, comfortable, and perceive competence (Bandura, 1986), this study hypothesizes that individuals who maintain relatively high entrepreneurial intentions will place significant weight on

their perception of fitness for entrepreneurial competencies (highly entrepreneurial self-efficacious). Thus,

Hypothesis 1: *Individuals who maintain strong entrepreneurial intentions will place significant weight on considerations of fitness in the evaluation of entrepreneurial competencies.*

Perceived Relative Value of Competency Components of Entrepreneurial Self-Efficacy

When contemplating which entrepreneurial competency criteria might be weighed more heavily in the self-perception analysis, it is helpful to review past research. As explained previously, Chandler and Jansen (1992) identified and tested five competencies pertaining to three roles from a sample of entrepreneurs (business founders). These entrepreneurs placed significance on the competencies that were evaluated in a distinctive order. Entrepreneurs placed significance on human/conceptual competence (LEAD/ORG SKILLS), first; ability to recognize opportunity (OPP RECOGN), second; drive to see the venture through to fruition (DRIVE), third, technical/functional competence (EXPERTISE), fourth, and political competence (POLITICAL), last. While individuals with strong entrepreneurial intentions are not actual entrepreneurs, it is likely that they might value these competencies in a similar order. Intent is a dependable predictor of human behavior in an assortment of circumstances, and has been deemed by many to represent the most successful forecaster of human attitudes and action (Ajzen, 1991; Ajzen & Fishbein, 1980; Krueger, 1993; Krueger, 2000). Intentions are assumed to capture the essence of stimulating factors that influence behavior. They are signals of how intensely individuals are prepared to perform and how much effort they are prepared to commit to carry out the expected behavior. Basically, the more robust the intent, the more probable it is to be able to foretell the anticipated behavior (Ajzen, 1991). Past research (Kim & Hunter, 1993) found that intentions explained sixty-seven percent of the variance in behavior and path analysis confirmed that the association between attitudes and behavior is fully explained by the attitude—intention and intention—behavior links (Krueger, 2000). It is, therefore, foreseeable that individuals with strong entrepreneurial intentions will hold similar attitudes to entrepreneurs when evaluating the relative importance of entrepreneurial competencies. While it is impossible to forecast, with any confidence, the exact order of relative competency significance, it is hypothesized that the most and least valued competencies should be parallel in both groups. Thus,

Hypothesis 2: *Individuals who have strong entrepreneurial intentions will value human/conceptual competence (LEAD/ORG SKILLS) as most important.*

Hypothesis 3: *Individuals who have strong entrepreneurial intentions will value political competence (POLITICAL) as least important.*

The next section explains how these entrepreneurial self-efficacy competencies (cues) were used in a decision modeling procedure.

METHODOLOGY

The Decision Modeling Technique

The typical method for conducting entrepreneurial self-efficacy studies is the self-reported direct survey. However, direct surveys are susceptible to the effects of social desirability response bias (Fisher, 1993), which is the result of the unfortunate human propensity to present oneself in the best possible light. Respondents are often reluctant to respond truthfully to probing questions due to ego defensive or impression management motivations (Fisher, 1993). This phenomenon may result in information that is scientifically prejudiced toward respondent's belief of what is desired by the researcher or otherwise socially acceptable to others. Social desirability response bias can lead to misleading research results and may be responsible for questionable conclusions about individual attitudes, intentions, and behaviors (Mensch & Kandel, 1988; Chen, Greene, & Crick, 1998).

A valuable remedy utilized by researchers to alleviate the consequences of social desirability response bias is by the application of an indirect questioning methodology. Indirect questioning is a projective technique that requires individuals to respond to questions that are presented from the viewpoint of another person or group (Anderson, 1978). By employing this method, respondents are allowed to project their unconscious biases in varying situations and disclose personal attitudes and beliefs (Campbell, 1950). Thus, indirect questioning allows respondents to express their true feelings under the pretense of role-playing.

This study used the indirect questioning method of decision modeling (Slovic & Lichtenstein, 1971) to examine individual assessment of human competency criteria for entrepreneurial self-efficacy. This method has also been identified under the more general terminology "conjoint analysis" (Shepherd & Zacharakis, 1999). While this technique has been frequently used to examine individual differences in decision processes (Klaas & Wheeler, 1990; Spencer & Crosby, 1997; Powell & Mainiero, 1999), venture capitalist assessments (Shepherd & Zacharackis, 1999, Shepherd & Zacharackis, 2002, Zacharackis & Meyer, 2000), and consumer purchase decisions (Lang & Crown, 1993), it has never been utilized in studies of entrepreneurial intentions or entrepreneurial self-efficacy. Further, no entrepreneurial self-efficacy studies have scrutinized individual assessment of entrepreneurial self-efficacy variables; rather, they have

examined the assessments made by groups of individuals whose perceptions are averaged together across the factors being studied.

In decision modeling methods, researchers methodically vary the cue content on a series of conditions to produce a large number of cue combinations. Each participant makes judgments about a sufficient quantity of these conditions to permit individualized (within-subject) regression analyses. The regression weights of the cues in the conditions create a decision policy for each individual, which can be interpreted to determine which cues hold the most importance for a particular set of decisions. In the present study, each respondent will be examined for his or her application of targeted human competency criteria in the assessment of entrepreneurial self-efficacy. Then, these cue condition assessments will be examined for their relation to individual's entrepreneurial intent.

Sample

In entrepreneurial decision research, it is important to uncover occupational intentions at a time when respondents are wrestling with important career decisions (Krueger, Reilly, & Carsrud, 2000). The sampling of only successful, current, or openly prospective entrepreneurs introduces prejudices that influence data erratically, especially in the case of highly ambiguous, and uncommon, phenomena (Krueger, Reilly, & Carsrud, 2000). For this research, a general sample of upper-class college students was utilized because while the exact details of a new venture may have not been fully developed in the minds of most of those with an entrepreneurial interest, global career intentions and evaluations of efficacy should have been (Scherer, Adams, Carley, & Weibe, 1989). Therefore, it is fitting to investigate entrepreneurial intent and self-efficacy utilizing a sample of upper-class college students. In keeping with this instruction, the study participants in this research were 140 volunteer graduating undergraduate university business students from a large southeastern university.

The students represented a diverse variety of business disciplines and were all enrolled in the university's capstone business policy/strategy course as was required immediately before graduation. The researcher visited each business policy/strategy class midway into the semester of the study (after prior approval of each course instructor) and made a brief appeal seeking study volunteers. Those who agreed to participate were then given the survey in its entirety. Instructions on the survey stressed the seriousness of academic research and beseeched each participant to analyze each scenario and answer each question as truthfully as possible.

Entrepreneurial Self-Efficacy Decision Cues

In this research, participants were asked to make judgments about the likelihood of hypothetical prospective entrepreneurs being able to establish a new business venture based, solely,

on vignettes which highlighted differing combinations of the five decision-making cues described above. Each of the five cues had two possible values, no or yes (coded 0, 1) resulting in 2 x 2 x 2 x 2 x 2 = 32 vignettes representing all combinations of decision cues. After consideration of the cue combination profile presented in each vignette, the participants recorded their opinion whether, or not, a fictional character that possessed those particular cue attributes would be able to establish a new business venture. Each decision was recorded as very unlikely to very likely on a seven-point Likert continuum. Figure 1 shows a sample decision outcome scenario.

FIGURE 1: SAMPLE DECISION MODELING SCENARIO

DECISION MODELING EXERCISE

Directions: In each scenario, please indicate how likely it is that someone will be able to start a promising business.

Circle (1) if Very unlikely
Circle (2) if Unlikely
Circle (3) if Somewhat unlikely
Circle (4) if Neither likely nor unlikely
Circle (5) if Somewhat likely
Circle (6) if Likely
Circle (7) if Very likely

Person A:

--has strong leadership and organizational skills…	No
--has a good sense of what customers want and need…	Yes
--is willing to make personal sacrifices to avoid failure…	Yes
--has specific work-related technical or functional expertise..	No
--has political savvy needed to enlist support of key people..	No

1) With these factors in mind, how likely is it that A will be able to establish a new business venture?

Very Unlikely	1	2	3	4	5	6	7	Very Likely

Entrepreneurial Intent

The entrepreneurial intent of each student was measured on a five-point Likert scale, which was adapted from an entrepreneurial decision scale (alpha = 0.92) in Chen, Greene, and Crick (1998). Principal components factor analysis with a varimax rotation revealed that all five of the

entrepreneurial intent items in the scale loaded on only one factor, which demonstrates the unidimensionality of the construct. The internal consistency reliability of the scale was assessed with Cronbach's alpha, which was registered at 0.89. This measure is indicative of high scale internal consistency reliability (Nunnally & Bernstein, 1994). Entrepreneurial intent scores were calculated by averaging the five items for each respondent. Low entrepreneurial intent was characterized by those respondents registering a mean of 1.0 - 2.4, with high entrepreneurial intent corresponding to means of 3.6 - 5.0. Figure 2 shows the entrepreneurial intent scale.

FIGURE 2: ENTREPRENEURIAL INTENTIONS SCALE*

Directions: Please circle the appropriate number based on your response to the questions below.

1) I am interested in setting up my own business.

Strongly disagree	1	2	3	4	5	Strongly agree

2) I have considered setting up my own business.

Strongly disagree	1	2	3	4	5	Strongly agree

3) I am prepared to set up my own business.

Strongly disagree	1	2	3	4	5	Strongly agree

4) I am going to try hard to set up my own business.

Strongly disagree	1	2	3	4	5	Strongly agree

5) How soon are you likely to set up your own business (select the response that most closely matches your plans).

	1	2	3	4	5	
	Never	after 10+ yrs	within 6-10 yrs	within 1-5 yrs	within 1yr	

* Cronbach's alpha = 0.89

Demographic Variables

Each participant provided information on their gender (coded female=0, male=1), race (coded Black=0, White=1, Asian-Pacific Islander=2), and age.

Analysis

The analysis of the data in a decision modeling study is a within-subjects analysis. The decision modeling approach "models" in a mathematical computation, such as a regression equation, the process a subject uses to bring together information to make a judgment (Zedeck,1977). The regression equation illustrates the decision maker's policies for integrating and evaluating information (Zedeck, 1977).

For each of the 132 participants who completed the survey, their decision solution in each vignette was regressed on each of the five cues using ordinary least squares regression within a general linear model. This analysis is different from the usual treatment of regression, in which one regression equation is determined to represent an entire sample. In decision modeling, the focal point is exclusive to one individual, and analyses are performed to discriminate the decision policy of that one individual instead of a general equation for a sample of subjects. This within-subjects treatment of regression serves to diminish the measurement error attributed to individual differences (Stahl & Harrell, 1981). Therefore, one equation was estimated for each subject (132 regression estimates).

For the regressions, the participant's decision choices in the 32 vignettes was the dependent variable and the decision cues, the independent variables, were coded and randomized for each vignette by the researchers. The regressions were processed in batches of 10 utilizing the multivariate general linear model function in SPSS 11.0. Raw beta coefficients were examined to assess the importance of each independent variable in explaining each participant's decisions. Raw regression coefficients are appropriate to interpret in decision modeling since they do not change significantly as a function of decision cue structure, unlike semipartial correlations and standardized regression weights (Lane, Murphy, & Marques, 1982). These coefficients revealed the participants decision policy, with the most important cues to each participant's group of decisions registering a significant effect on decision outcome ($p < 0.05$). The sample size for each participant in regression analyses was the number of decisions made ($n = 32$). Since each participant made 32 decisions in the experiment, 4,244 decisions were analyzed in this study.

Before analyzing the decision policy of participants, the reliability of their decisions must be assessed (Stahl & Harrell, 1981). The multiple correlation coefficient squared (R-squared) from each participant's regression equation is a measure of the reliability of the decision that was made. These values represent the consistency with which each participant made decisions. Nonsignificant multiple correlation coefficients represent that the participants were making random decisions, as opposed to following logical decision rules, and should be dismissed from further analyses (Butler & Cantrell, 1984).

To test the relative effect of decision cues between participants, mean beta values for each decision cue were calculated for the entire sample. An F-test was performed to test the equality of means between each of the five decision cues. The test for equality of the mean values for each

quality cue was written as Ho: n1 = n2 = n3 = n4 = n5 where n1 is the mean raw beta weight derived for decision cue 1, n2 is the mean raw beta weight derived for decision cue 2, and so on. If the test hypothesis was rejected ($p < .05$), paired comparisons were performed on each combination of decision cues utilizing paired-sample t tests. The paired-sample t test procedure compares the means of two decision variables within a single group. It computes the differences between values of the two variables for each case and tests whether the average differs from zero. From the significance indices of each combination, we were able to distinguished which decision cues were the most, and least, significant for each group of respondents.

RESULTS

As noted earlier, the sample initially included 140 soon to be graduating business students. Eight of these were excluded from the analysis because they failed to complete the research questionnaire. Of the remaining 132 respondents, 58% were male and 42% female, 83% Caucasian, 15% African-American, and 2% Asian-Pacific Islander. The mean age for the sample was 22.6 yrs (median=22) with the range extending from 20 to 32 years of age.

Each participant's decision policy regarding the likelihood of an individual establishing a new business venture was determined with ordinary least squares regression within a general linear model. The first step in analyzing these decision policies was to examine the reliability of each individual's regression equation (Stahl & Harrell, 1991). Of the 132 regressions, 14 were deemed nonsignificant after reviewing their squared multiple correlations ($p > .05$). Since a nonsignificant value indicates that the subject was recording random decisions, these 14 subjects were excluded from the study leaving a between-subjects sample of 118.

General Research Question 1 asked how important each of the entrepreneurial efficacy decision cues would be to a sample of individuals assessing the likelihood of someone being able to establish a new business venture. The decision modeling technique produced raw beta coefficients attributable to each human competency decision cue for each participant. The raw beta coefficients were then averaged for each decision cue, revealing an overall decision policy for the sample. An F-test and paired-samples t test analysis revealed a significant difference between the mean regression weights placed on the five human competency decision cues ($F = 5.16$; $p = 0.0004$). Specifically, having a good sense of customer wants and needs (mean = 1.237) and leadership/organizational skills (mean = 1.228) had the most influence on decisions about entrepreneurial efficacy. Willingness to make sacrifices was second (mean = 1.098); and technical/functional expertise (mean = 1.047) and political savvy (mean = 0.999) were judged lowest in importance, respectively.

General Research Question 2 asked whether individuals with strong intentions to begin a business would utilize these human competency decision cues differently from others when judging

entrepreneurial capability. From this general research question, three study hypotheses were generated. Hypothesis 1 predicted that individuals with strong entrepreneurial intentions would more seriously evaluate their fitness for each entrepreneurial competency relative to others. Hypotheses 2 and 3 anticipated that individuals with strong entrepreneurial intentions would mirror actual entrepreneur's judgment of the most and least valued entrepreneurial competencies. In order to evaluate these three hypotheses, sample decision policies were re-analyzed after the assignment of participants to three groupings based on the magnitude of their entrepreneurial intentions.

Results across these three subgroups strongly support the three study hypotheses. As forecasted in Hypothesis 1, only those individuals with high entrepreneurial intentions (n = 35) placed significantly different weights on the five competencies when making judgments about entrepreneurial efficacy ($F = 5.43$; $p = .0004$). In contrast, the mean beta values for the five decision cues did not vary significantly among those with low (n = 46; $F = 0.468$; $p = 0.758$) or neutral (n = 37; $F = 1.71$; $p = 0.151$) entrepreneurial intentions. Apparently, these respondents did not bother to differentiate among the cues as much as did those individuals with a strong desire and interest to start a business of their own.

As shown in Figure 3, the paired t test analysis demonstrated that individuals who have strong entrepreneurial intentions judged leadership/organizational skills and having a good sense of customer needs the most important indicators of entrepreneurial efficacy; technical/functional competency and the willingness to make sacrifices was second, and political competency was the least important. These results support hypotheses 2 and 3.

FIGURE 3: RESULTS OF DECISION MODELING ANALYSIS: HIGH ENTREPRENEURIAL INTENTIONS SUBGROUP (DECISION POLICY MAP)

Decision Cue Profile:	L/O	OP	TF	DR	PO
Means:	1.32	1.25	1.03	1.04	0.86
Decision Cue Groupings*:	[L/O	OP]			
		[OP	TF	DR]	
				[DR	PO]
Most Important <==========>Least Important					

Entrepreneurial Self-Efficacy Decision Cue Key:
L/O = Leadership/Organizational: Strong leadership and organizational skills.
OP = Opportunity Recognition: A good sense of what customers want and need.
TF = Technical/Functional: Specific work-related technical or functional expertise.
DR = Drive: Willing to make personal sacrifices to avoid failure.
PO = Political: Political savvy needed to enlist support of key people.

* The means of decision criteria grouped within the same brackets are not significantly different.

The result of the grouping analysis demonstrates that individuals with high entrepreneurial intentions can be discriminated from other individuals and other groups based on their application of human competency decision criteria. Respondents with low or moderate interest in entrepreneurship weighed all of the capabilities about equally when making judgments about entrepreneurial efficacy. However, those with high entrepreneurial intentions weighed some capabilities significantly more than others. We interpret this finding to mean that these criteria are particularly relevant to individuals possessing serious entrepreneurial intentions.

DISCUSSION

The purpose of this study was to examine the criteria used by participants, who possess different levels of entrepreneurial intent, when assessing their ability to establish a new venture. By learning how diverse people evaluate specific human competencies related to entrepreneurship, we hope to learn more about the factors influencing personal self-efficacy evaluations. Instead of straightforwardly asking respondents about their own entrepreneurial self-efficacy, we used a projective technique to capture their unconscious biases and personal attitudes about the construct (Campbell, 1950).

To create our research instrument, we manipulated factors from Chandler & Jansen's (1992) entrepreneurial competency study. These factors included leadership and organizational skills, knowledge about what customers want and need, the willingness to make personal sacrifices to avoid failure, specific technical/functional expertise, and the political savvy to enlist support of key stakeholders. An attempt was then made, utilizing decision-modeling methodology, to determine which of these criteria are most relevant to the entrepreneurial self-efficacy assessments of individuals with strong entrepreneurial intentions. In addition, we compared the decision policies of respondents with varying levels of entrepreneurial intent to determine if these criteria were applied differently in their judgments of overall entrepreneurial efficacy.

It was found that knowledge of customer wants and needs and whether, or not, one possesses strong leadership and organizational skills were judged as most important in the assessment of entrepreneurial self-efficacy by the overall sample. These considerations were followed in importance by the willingness to make sacrifices to avoid failure, work-related technical/functional expertise, and political savvy, respectively. Certainly, these are critical attributes that all individuals should consider (Chandler & Jansen, 1992) when judging whether, or not, to attempt entrepreneurial activity. Therefore, self-efficacy research instruments that include these criteria should be useful to discern prospective entrepreneurs from others. In this respect, the experimental manipulation of human competency decision cues was successful.

When comparing the decision policies of groups in the sample that were separated by their level of entrepreneurial intent, it was demonstrated that only the group with strong entrepreneurial

intent placed significance on any of the entrepreneurial competency decision cues. Individuals who professed strong entrepreneurial intentions valued strong leadership and organizational skills the most. This was followed by knowledge of customer wants and needs, work-related technical/functional expertise, willingness to make sacrifices to avoid failure; and political savvy, respectively. It is obvious from these results that the significance displayed by our overall sample emanated from the high intent subgroup. Therefore, it can be concluded that the decision cues in this study were able to differentiate those individuals who had strong entrepreneurial intentions from others. These preliminary findings should provide encouragement for future research to utilize human competency components of entrepreneurial self-efficacy.

Accordingly, the decision policy for those with strong entrepreneurial intentions exhibited in this study closely matches the factor magnitude pattern of actual entrepreneurs found in Chandler and Jansen (1992). In their study, the investigators surveyed actual entrepreneurs and had them divulge which human competencies they felt were most important to successfully initiate a new business venture. Our study performed a similar analysis, except couched in terms of self-efficacy assessment for prospective entrepreneurs. Previous attempts to correlate prospective and actual entrepreneur's self-efficacy component significance haven't fared as well. For instance, Chen, Greene, and Crick (1998), developed an entrepreneurial self-efficacy scale that incorporated five expected entrepreneurial roles and tasks (marketing, innovation, management, risk-taking, and financial control) that should have been relevant to both the prospective and actual entrepreneurs in their study. However, the prospective entrepreneurs (entrepreneurship students) registered significantly higher efficacy scores for marketing, management, and financial control while the actual entrepreneurs (business founders) were highly efficacious for innovation and risk-taking. In short, the researchers found no common factors that were important to the full spectrum of entrepreneurs under investigation. Our examination is an attempt to apply entrepreneurial self-efficacy components that are relevant to all types and levels of the entrepreneur continuum.

There are several implications of entrepreneurial self-efficacy that merits further emphasis. First, self-efficacy is a wide-ranging evaluation of perceived fitness for the performance of a specific activity (Bandura & Wood, 1989; Wood & Bandura, 1989; Gist & Mitchell, 1992). In a real-world entrepreneurship context, information derived exclusively from the individual (cognitions), the particular venture creation and development task (behavior), and the network of supporting individuals and organizations involved in a specific entrepreneurial effort (environment) may possibly add to estimated capability judgments on the part of the prospective entrepreneur. However, in the context of global entrepreneurial self-efficacy research, it may be more useful to examine self-efficacy for general entrepreneurial tasks (such as nonspecific new venture initiation) through the mechanism of universal assessment criteria (e.g. human competencies) instead of relying on functional criteria that is too specific to be applied to all forms of planned venture initiations. Since we know that entrepreneurship is a planned phenomenon (Bird, 1988, Katz & Gartner, 1988), it only makes sense that we examine self-efficacy perceptions with universally appealing

assessments unless we regulate ourselves to research questions designed for specific types of planned ventures (e.g., self-efficacy of initiating an industrial equipment manufacturing operation). Second, self-efficacy may be labeled as an evolving phenomenon since the efficacy estimation may be modified over time as new information and know-how are obtained (Bandura & Wood, 1989; Wood & Bandura, 1989; Gist & Mitchell, 1992). In the context of entrepreneurship, it is possible that individual perception of one's suitability to be an entrepreneur changes periodically as one transforms from a nascent entrepreneur with a high-quality new business concept to a veteran entrepreneur who has intimate familiarity with the hardships and successes of a series of new venture start-ups, failures, growths, and harvests. We can only test this proposed phenomenon longitudinally, however, if we apply research questions that revolve around recurrent considerations, such as human competencies, instead of venture-specific discrete functions. Last, self-efficacy research is vulnerable to the social desirability bias of the sample (Chen, Greene, & Crick, 1998). In order to alleviate this threat to the validity of entrepreneurial self-efficacy research, this study applied a decision modeling indirect questioning methodology that is resistant to social desirability biases (Fischer, 1993). Future self-efficacy research should apply other indirect questioning methodologies to protect the viability of research results and conclusions.

The present research is limited by a number of issues. The first limitation pertains to the decision modeling methodology used herein. Although the self-efficacy decision cues were derived from Chandler and Jansen's (1992) entrepreneurial competency analysis, the decision cues are not an identical match for the factors that the researchers developed. We summarized each dimension of their multidimensional scale into a one-sentence description of the major emphasis of the factor. In doing so, we transformed each multi-item factor into a single item measure. There is the possibility that we misrepresented the factors by being either too vague or too specific. Second, the importance of each cue may vary depending on the experience of the rater. For example, the political savvy decision cue was consistently the least important factor for all of the groups studied. However, the ability to garner support and gain consensus among a network of key supporters is vital to new venture success (Chandler & Jansen, 1992). It is apparent from this study that not all individuals with strong entrepreneurial intentions know exactly what is necessary to establish a new business. This is indicative of potential entrepreneurs who operate with little information of possible obstacles (Krueger & Brazeal, 1994) and may be a primary cause for the high failure rate of entrepreneurial start-ups. The caveat here, though, is that our strong entrepreneurial intent subgroup mirrored the perspective of actual business founders. Last, the exclusive use of students may limit the generalizability of our results.

In conclusion, entrepreneurship researchers have developed entrepreneurial self-efficacy measures mainly along narrowly applicable functional assessments utilizing self-reported direct surveys. Decision modeling approaches can be used to rank decision criteria that underlie universal entrepreneurial competencies. Using such an approach, this study has made an initial attempt to validate human competency criteria used in making judgments about entrepreneurial self-efficacy.

Further research is warranted to examine these criteria by applying indirect questioning methodologies on other samples drawn from the broad-spectrum of entrepreneurs.

REFERENCES

Anderson, J.C. (1978). The validity of haire's shopping list projective technique. *Journal of Marketing Research*, 8: 644-649.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50: 179-211.

Ajzen, I. & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs: NJ: Prentice-Hall.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*,84: 91-215.

Bandura, A. (1982). The self and mechanisms of agency. In J. Suls (Ed.), *Psychological Perspectives on the Self* (pp. 3-39). Hillsdale, NJ: Erlbaum.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. & Wood, R.E. (1989). Effect of perceived controllability and performance standards on self-regulation of complex decision-making. *Journal of Personality and Social Psychology*, 56: 805-814.

Begley, T. & Boyd, D. (1987). A comparison of entrepreneurs and managers of small business firms. *Journal of Management*, 13(1): 99-109.

Bird, B.J.(1988). Implementing entrepreneurial ideas: The case for intention. *The Academy of Management Review*, 13(3): 442-454.

Boyd, N. & Vozikis, G. (1994). The Influence of self-efficacy on the development of entrepreneurial intentions and actions. *Entrepreneurship Theory and Practice*, 18(4): 63-78.

Brockhaus, R. & Horowitz, P. (1986). The psychology of the entrepreneur. In D. L. Sexton and R. W. Smilor (Eds.), *The Art and Science of Entrepreneurship*. Cambridge, MA: Ballinger (25-48).

Butler, J.K. & Cantrell, R.S. (1984). A behavioral decision theory approach to modeling dyadic trust in superiors and subordinates. *Psychological Reports*, 55: 19-28.

Campbell, D.T. (1950). The indirect assessment of social attitudes. *Psychological Bulletin*, 47: 15-38.

Chandler, G.N. & Jansen, E. (1992). The founder's self-assessed competence and venture performance. *Journal of Business Venturing*, 7(3): 223-237.

Chen, C.C., Greene, P. & Crick, A. (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? *Journal of Business Venturing*, 13(4): 295-317.

Giles, M. & Rea, A. (1999). Career self-efficacy: An application of the theory of planned behavior. *Journal of Occupational and Organizational Psychology*, 72: 393-399.

Fisher, R.J. (1993). Social desirability and the validity of indirect questioning. *Journal of Consumer Research*, 20: 303-315.

Gist, M.E. (1987). Self-efficacy: Implications for organizational behavior and human resource management. *Academy of Management Review*, 3: 472-485.

Gist, M.E. & Mitchell, T.R. (1992). Self-efficacy: A theoretical analysis of its determinants and malleability. *Academy of Management Review*, 17: 183-211.

Gist, M.E., Stevens, C.K. & Bavetta, A.G. (1991). Effects of self-efficacy and post-training intervention on the acquisition and maintenance of complex interpersonal skill. *Personnel Psychology*, 44: 837-861.

Hackett, G. & Betz, N.E. (1981). A self-efficacy approach to the career development of women. *Journal of Vocational Behavior*, 18: 326-336.

Katz, J.A. & Gartner, W.B. (1988). Properties of emerging organizations. *Academy of Management Review*, 13: 429-441.

Kim, M.S. & Hunter, J. (1993). Relationships among attitude, behavioral intentions, and behavior. *Communication Research*, 20: 331-364.

Klaas, B.S. & Wheeler, H. N. (1990). Managerial decision-making about employee discipline: A policy capturing approach. *Personnel Psychology*, 43: 117-134.

Krueger, N.F. Jr. (1993). The impact of prior entrepreneurial exposure on perceptions of new venture feasibility and desirability. *Entrepreneurship Theory and Practice*, 18(1): 5-21.

Krueger, N.F. Jr. (2000). The cognitive infrastructure of opportunity emergence. *Entrepreneurship Theory and Practice*, 24(3): 5-23.

Krueger, N.F. Jr. & Brazeal, D.V. (1994). Entrepreneurial potential and potential entrepreneurs. *Entrepreneurship Theory and Practice*, Spring: 91-104.

Krueger, N. Jr., Reilly, M.D. & Carsrud, A.L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, 15(5): 411-432.

Lane, D.M., Murphy, K.R. & Marques, T.E. (1982). Measuring the importance of cues in policy capturing. *Organizational Behavior and Human Performance*, 30: 231-240.

Lang, J.Q. & Crown, E.M., (1993). Country-of-origin effect in apparel choices: a conjoint analysis. *Journal of Consumer Studies and Home Economics*. 17 (March): 87-98.

Lent, R.W., Brown, S.D. & Hackett, G. (1994). Toward a unifying social cognitive theory of careerand academic interest, choice, and performance. *Journal of Vocational Behavior*, 45: 79-122.

Livesay, H. C. (1982). Entrepreneurial History. In Kent, Sexton, and Vesper's *Encyclopedia of Entrepreneurship* (pp. 7-15). Englewood Cliffs, NJ: Prentice Hall, Inc.

MacMillan, I.C., Siegel, R. & SubbaNarismha, P.N. (1985). Criteria used by venture capitalists to evaluate new venture proposals. *Journal of Business Venturing*, 1(1):119-128.

McClelland, D. (1965). N achievement and entrepreneurship: A longitudinal study. *Journal of Personality and Social Psychology*, 1: 389-392.

Mensch, B.S. & Kandel, D. B. (1988). Underreporting of substance use in national longitudinal youth cohort. *Public Opinion Quarterly*, 52, 100-124.

Mintzberg, H. & Waters, J.A. (1982). Tracking strategy in an entrepreneurial firm. *Academy of Management Journal*, 25(3): 465-500.

Mokry, B.W. (1988). *Entrepreneurship and public policy*. New York: Quorum Books.

Nunnally, J.C. & Bernstein, LH. (1994). *Psychometric Theory*, Third Edition. New York: McGraw.

Pavett, C.M. & Lau, A.W. (1983). Managerial work: The influence of hierarchical level and functional specialty. *Academy of Management Journal*, 26(1): 170-178.

Powell, G. N. & Mainiero, L. A. (1999). Managerial decision making regarding alternative work arrangements. *Journal of Occupational and Organizational Psychology*, 72: 41-56.

Schein, E.H. (1987). Individuals and careers. In J. Lorsch's (ed), *Handbook of Organizational Behavior* (pp. 151-171). Englewood Cliffs, NJ: Prentice Hall.

Schere, J. (1982). Tolerance of ambiguity as a discriminating variable between entrepreneurs and managers. *Proceedings*, (pp. 404-408). New York: Academy of Management.

Scherer, R.F., Adams, J.S., Carley, S.S. & Wiebe, F.A. (1989). Role model performance effects on the development of entrepreneurial career preference. *Entrepreneurship Theory and Practice*, 13(3): 53-71.

Shapero, A. & Sokol, L. (1982). The social dimensions of entrepreneurship. In Kent, Sexton, and Vesper's *Encyclopedia of Entrepreneurship* (pp. 72-90). Englewood Cliffs, NJ: Prentice Hall, Inc.

Shepherd, D.A. & Zacharakis, A.L.(1999). Conjoint analysis: A new methodological approach for researching the decision policies of venture capitalists. *Venture Capital*, 1(3): 197-217.

Shepherd, D.A. & Zacharakis, A.L. (2002). Venture capitalists' expertise: A call for research into decision aids and cognitive feedback. *Journal of Business Venturing*, 17(1): 1-20.

Slovic, P. & Lichtenstein, S. (1971). Comparison of Bayesian and regression approaches to the study of information processing in judgment. *Organizational Behavior and Human Performance,* 6: 649-744.

Spencer, B. A. & Crosby, L. (1997). Linking quality attributes with customer purchasing decisions: A comparison of two methods. *Quality Management Journal*, 5(1): pp. 35-45.

Stahl, M.J. & Harrell, A.M. (1981). Modeling effort decisions with behavioral decision theory: Toward an individual differences model of expectancy theory. *Organizational Behavior and Human Performance*, 27: 303-325.

Timmons, J.A., Muzyka, D.F., Stevenson, H.H. & Bygrave, W.D. (1987). Opportunity recognition: the core of entrepreneurship. In N.C. Churchill, J.A. Hornaday, B.A. Kirchoff, O.J. Krasner, & K.H. Vesper (eds) *Frontiers of Entrepreneurship Research* (pp. 109-123). Wellesey, MA: Babson Center for Entrepreneurial Studies.

Wood, R. & Bandura, A. (1989). Social cognitive theory of organizational management. *Academy of Management Review*, 14: 361-384.

Zacharakis, A.L. & Meyer, G.D. (2000). The potential of actuarial decision models: Can they improve the venture capital investment decision? *Journal of Business Venturing*, 15(4): 323-346.

Zedeck, S. (1977). An information processing model and approach to the study of motivation. *Organization Behavior and Human Performance*, 18: 47-77.

THE ORGANIZATIONAL LEADERSHIP OF THE POST BABY BOOM GENERATION: AN UPPER ECHELON THEORY APPROACH

L. Jeff Seaton, Murray State University
Michael Boyd, Western Carolina University

ABSTRACT

Organizations entering into the new global economy of the 21st century face challenges and threats never before experienced. Researchers have predicted that the key to success in this new era of globalization lies in the organizational leaders' ability to provide strategic leadership. The upper echelon theory suggests that leaders of organizations are subconsciously bounded by psychological factors within the leaders' personal criteria which they have been socialized to in their lifetimes. This paper will use an upper echelon theory approach to explain how the ethical and entrepreneur perspective differences of the newer generation of leaders will affect the strategic leadership of the 21st century.

INTRODUCTION

> *"The generation gap phenomenon has been extensively described and discussed…today contemporary students are seen as being lower in authoritarianism, desirous of personal freedom of expression and oriented toward shorter term achievement horizons…"* *(Ondrack, 1973)*

While this statement could easily be a part of an article in any of today's business publications, it was published in a 1973 issue of The Academy of Management Journal by D. A. Ondrack (1973). This article stressed a concern with generational diversity, which has been an ongoing part of organizational behavior research for several decades. Ondrack (1973) posited that the strategic leaders of the Baby Boom generation (born 1943 through 1964) would change the face of the business environment by seeking more entrepreneurial activities and gravitating away from bureaucratic organizations with their strict rules, policies and cultural standards.

With the tremendous growth in entrepreneurial businesses and the diversion from the status quo of the 70s, 80s, and 90s, we can safely say that the Baby Boom generation has indeed lived up to Ondrack's predictions. Timmons and Spinelli (2004) stated that during the last 30 years the strategic leadership of the Baby Boom generation has permanently altered the economic and social structure of the world with their entrepreneurial and diverse ideas.

The next logical question concerning researchers who examine generational differences in organizations should be: what happens with the next generation of strategic leaders, referred to as Generation X (born 1965 through 1976) and Generation Y (born 1977 through 1994)? Will they be as diverse from the Baby Boomers as the Baby Boomers were from the Silent Generation (born before 1943)? If so, what types of strategic leadership differences should we expect in the future of our organizations?

STRATEGIC LEADERSHIP

Organizations in the global economy of the 21st century face challenges and threats never before experienced. Today, changes are revolutionary and no longer evolutionary in nature (Greenwood and Hinings, 1996). Revolutionary changes are constant, swift, frequent, and affect virtually all parts of an organization simultaneously. While these changes may invoke a sense of fear and anxiety to the organizations unprepared for the future, organizations with strong strategic leadership will welcome this new millennium as a great opportunity to excel.

An effective strategic leader will create a viable future for the organization by anticipating, envisioning, maintaining flexibility, thinking strategically, and working with others to initiate change (Christensen, 1997). Effective strategic leadership can enhance a firm's ability to cope with the turbulent and unpredictable environments that are exemplified in today's global environment (Huey, 1994).

While many previous authors have accurately pointed out the importance of strong strategic leadership in today's business environment, little is published to describe the influences that affect the new generations' ability to provide such strong strategic leadership for today's business organizations.

GENERATIONAL DIFFERENCES

Recent studies have indicated that, like the Baby Boomers, Generations X and Y have continued to move further away from the bureaucratic axioms of the past (Longenecker, McKinney, & Moore, 1989).

Generation X was raised in a time of cultural revelation in our country with the appearance of such things as the insurgence of rock music, computers, Watergate scandals, and the assassinations of President Kennedy and Martin Luther King, Jr. Also, this generation grew up seeing their parents being more focused on work and less family oriented than generations in recent history. These individuals saw a very strong change in the way people perceived work, entertainment, ethical behavior, war, racial diversity, and the government, just to name a few.

Generation Y has grown up with even more diverse experiences. This generation is the product of more single parent families than any generation before. This generation has seen a new wave of unethical behavior in our society with the O.J. Simpson trial, multiple school shootings, the perjury trial and impending impeachment of President Clinton, and the downfall of organizational icons such as Enron, Arthur Anderson, and Martha Stewart.

The emergence of violent video games, sexually explicit rap music, "reality TV" and other current entertainment programming, has increased the amount of violence, language and sexual content that this generation has been allowed to experience and associate with acceptable behavior (Pelton & Sheb, 2004).

The value system of the newer generations began in their early life as they were taught to behave according to their parents' expectations. Their value systems were further developed in later life as the individuals watched TV, listened to music, joined sports teams, attended schools, universities, social institutions, and began to work in organizations (Meglino & Ravlin, 1998).

This generation has witnessed the introduction of quick and endless information by using lap top computers, the internet, cell phones, etc. They have been raised in an information and technology explosion era (Wolberg and Pokrywczynski 2001).

The days of waiting for a letter, going to the library, and searching through encyclopedias for needed information, has not been experienced by this generation. They expect instant results and returns, which has lead to a lifetime of instant gratification and, ultimately, the disappearance of the virtue of patience.

This generation experienced more parental divorce than in any generation before them. They experienced higher insecurity in financial needs and family needs as they watched their parents lose their jobs because of corporate downsizing and economic strains on commerce.

Generations X and Y have developed a lower value on work, are less willing to sacrifice personal life styles and career for the organization, and hold less loyalty to the firm. As they saw the organization's perception of the social contract between worker and firm erode, they became less secure in their future with any organization (Davis, Pawloski, and Houston 2006). They shifted their focus from the "nose to the grindstone" paradigm of their parents and grandparents, to a higher quality of life paradigm that cherishes free time and searches for a balance between work and play.

Pelton and True (2004) suggests that because of the experiences, socialization of accepted behaviors, and creation of new paradigms by the newer generations, the leaders of these generations will be the most consumption-oriented and ethnically-diverse leaders in history. They suggest that

the entrepreneurial and ethical perspectives of these new leaders should, as the Baby Boom leaders did before them, change the face of the business environment forever.

ETHICAL DIFFERENCES

In today's business environment, more and more incidents of unethical behavior by organizational leaders are surfacing throughout business organizations. Petress (2003) suggests the publicized situations of individuals in corporate America exhibiting ethical lapses are not a result of a sudden decline in moral values. Instead, much of their ethical behavior developed over time.

The newer generations of managers are believed to accept and become involved in unethical behavior much more readily than do their predecessors. Longenecker and colleagues (1989) conducted a study that examined the ethical beliefs of individuals from different generations. The study used 16 ethical dilemma vignettes to measure the ethical behavior of the respondents. In 14 of the study's 16 vignettes, the new generation respondents showed greater tolerance of ethically questionable behavior than did the older respondents. One of the primary findings of the study was that when considering ethical issues such as padding expense accounts, evading taxes, bid rigging, giving illegal gifts for business purposes, using insider information, engaging in copyrighting violations, and willingness to change financial reports, the younger generation's acceptance of these behaviors were significantly more tolerable than those of the older respondents. These findings were also reflected in a recent Gallup Poll (March, 2004), where approximately 67% of older Americans stated that they were dissatisfied with the moral and ethical climate of the nation, while only about 47% of the newer generations voiced a dissatisfaction with the present climate.

These numbers are a concern in today's business environment because as the later part of the Baby Boom generation moves toward retirement, Generation X and Y managers are slowly and quietly moving into the management teams of business organizations (Wood, 2005).

ENTREPRENEURIAL DIFFERENCES

Entrepreneurial thinking has always been an important mainstay in our business environment. As we progressed from agrarian existence, thru the industrial age, to now, it has been entrepreneurs who often forged the way to change.

The Baby Boomers used entrepreneurial innovation to help our country grow into the top-producing nation in the world. With their strong work ethic, they conceptualized and brought to fruition many new business ideas and concepts that made this country's business environment the envy of all who saw it.

Technology was the primary driver of growth and change for this generation. Through new technology, they were able to create goods and service companies that had the ability to change quickly to the market's erratic fluctuations. This generation's materialistic paradigm created an entrepreneurial spirit like never before seen in the business world.

The newer generations are even more tech savvy than their generational predecessors (Johns, 2003). For this reason, we can expect that entrepreneurial growth will continue to be spurred on by the cutting edge technology of today. Though similar in this respect, the entrepreneurial ideas of the Baby Boomers and generation X and Y become much more delineated at that point.

The newer generations have been described as individualistic, distrustful of corporations, lacking in company loyalty, living their lives on the edge, embracing of change, and very outcome focused (Allen, 2004). The newer generation will try to get things done quicker, even if it means bending the rules a little (Eisner, 2005).

Most of the entrepreneurs of the Baby Boom generation started their careers working for a company. After acquiring knowledge and experience, their confidence in their own ideas and their abilities to contribute something meaningful by starting their own company increased. They then moved into their own companies in order to pursue their entrepreneurial ideas.

The newer generations are more confident in themselves and much quicker in their careers. These generations have been told that they can do anything and they tend to believe it from the start (Martin, 2004). They need and demand instant gratification in their careers. This generation is more likely to "rock the boat" than any generation before them (Johns, 2003).

The goal of gaining status and material worth, sought by the entrepreneurs of the Baby Boom generation, has been replaced with the newer generation's desire to find intellectually challenging work that makes a difference and helps society. Therefore, the newer generation is just as happy being an entrepreneur within the boundaries of their present company. This type of entrepreneur, referred to as an intrepreneur, find challenges within the company that satisfies their creative desire while helping them to create something they feel is meaningful and contributes to society.

While the entrepreneurial spirit of this newer generation is energetic, to say the least, it lacks direction (Eisner, 2005). The newer generation of entrepreneurs are inclined to plunge themselves in to work they find interesting and important even if they know little about it (Lewis, 2003). Since the desire to work on challenging tasks has taken the place of the goal of maximization of profits for this generation, it is much more accepting for this generation's entrepreneurial ideas to conclude with no financial gain.

The newer generation is also more likely than their generational predecessors to become dissatisfied and uninterested in the present idea if a newer seemingly more interesting or meaningful idea arises (Eisner, 2005). These entrepreneurial differences have made this generation more unpredictable than any before them.

UPPER ECHELON THEORY

The upper echelon theory is based upon the idea that top management teams form cognitive maps that are created from their own past experiences (Hambrick and Mason, 1984). These past experiences act to constrain top management team members as they can only consider solutions that fall within their cognitive map, referred to as their bounded rationality.

Hofstede (1996) describes an individual's personal criteria, or bounded rationality, as a type of accumulation of past and present experiences which Hofstede refers to as "software of the mind". He posits that individuals become what they are, perceive things as they do, and react as they will as a result of the people, events, and social relationships experienced in their lives. This type of learned behavior is a product of what researchers refer to as socialization (Allen and Meyer, 1990; Ashforth & Saks, 1996; Jones, 1986).

When an individual is born, he/she begins to experience their environment's distinct way of life complete with its own rhythms, rewards, relationships, demands, languages and potentials. The individual entering this environment is naive and begins searching for ways to make sense of the new environment, as well as a means of relieving the stress associated with the ambiguity of the situation. Socialization facilitates adjustments to the individual's internal value system as to which behaviors and perspectives are acceptable, customary, and desirable, and which behaviors and perspectives are considered deviant, taboo, and unacceptable (Ashforth & Saks, 1996). Stated specifically, individuals will interpret their experiences within the context of their environment's milieu (Fisher, 1986; Van Maanen, 1976). The key to understanding this new environment, and thus becoming an effective member of the environment, lies in the acquiring of a variety of information and behaviors (Fisher, 1986; Louis, 1980; Weick, 1995).

As the current paper has stated, the present generation is very diverse from their generational predecessors. The ethical and entrepreneur perceptions of this generation are a product of a very different set of experiences.

Unethical behaviors in the organization seem to be based on the culture of the people who reside in the organization. The culture for each of the generations being described in this paper have some very different beliefs about right and wrong, moral and immoral, or ethical and unethical behaviors. As unethical behaviors have become more acceptable to the newer generations, the presence of these behaviors in today's organizations has become more prevalent.

The entrepreneurial spirit is still alive and well within our business environment but has taken different courses over time. The Baby Boomers wanted to be self sufficient, stand independently, and create material wealth while generation X and Y are impatient, do not have a lot of loyalty to the organization, are willing to be innovative either inside or outside of the corporation, demand a balance between work and self interest, and are willing to give up monetary gains in exchange for interesting and meaningful returns.

According to the upper echelon theory, as these new generations of leaders move into top positions in our organizations, they will make strategic decisions that fall within their own rational boundaries. These boundaries include the tolerance of more unethical behavior and the pursuit of more interesting, and socially meaningful entrepreneurial ideas that lead to less profitable outcomes for the organizations they represent.

More and more we are hearing about unethical behaviors in our organizations. We are also hearing of organizations that are becoming more socially responsible while foregoing opportunities to increase profits. This adds support to this paper's proposal that as the baby boomers are moving out of the top management teams and succession leads to the presence of the new generation of leaders, the strategic leadership in the organizations reflect more of the perspectives of the newer generations.

CONCLUSION

The generational differences that exist within our organizations are extremely salient and well defined in organizational literature. The baby boomers are a generation that has a strong work ethic, strives for materialistic rewards, is willing to give up family obligations in order to fulfill professional requirements, seeks more entrepreneurial activities while gravitating away from bureaucratic organizations with their strict rules, policies and cultural standards and is, for the most part, ethical minded.

The X and Y generations are very different from their generational predecessors. These generations are less willing to sacrifice quality of life for career or the organization, they hold less loyalty to a firm, they desire interesting and meaningful work, and are somewhat less ethical than the generations before them.

Based on the upper echelon theory, which states that upper management's decision making is based on the manager's lifetime accumulated bounded rationally, the generational differences that exists in the newer generations will manifest themselves in the strategic decisions of the managers of today's organizations.

The changes in the new generation's characteristics will definitely affect our future progress and accomplishments in organizations. As the Baby Boomers retire out of upper management positions and more Generation X and Y comes on board, we can expect to see decisions that are based more on interest and meaningfulness of the decision and less on opportunities to make profits. Also, the decisions will be grounded in the search for quicker returns that may require less consideration of ethical standards.

As our generations continue to revolve, so shall the decisions of our organizations strategic leaders.

REFERENCES

Allen, P. (2004). Welcoming Y. *Benefits Canada,* 28 (9), 51(3).

Allen, N. & Meyer, J. (1990). Organizational Socialization Tactics: A Longitudinal Analysis of Lengths to Newcomers' Commitment and Role Orientation. *Academy of Management Journal*, 33, 847-858.

Ashforth, B. & Saks, A. (1996). Socialization tactics: Longitudinal Effects on Newcomer Adjustment. *Academy of Management Journal*, 39(1), 149-171.

Christensen, C. (1997). Making strategy: Learning by Doing. *Harvard Business Review*, 75, (6), 141-156.

Davis, J., Pawloski, S., & Houston, A. (2006). Work Commitments of Baby Boomers and Gen-Exers in the IT profession: General Differences or Myth? *Journal of Computer Information Systems*, Spr., 43-49.

Eisner, S. (2005). Managing generation Y. *Sam Advanced Management Journal*, Autumn, 4-15.

Fisher, C. (1986). Organizational Socialization: An Integrative Review. In K.R. Rowland & G.R. Ferris (eds.), *Research in Personnel and Human Resource Management*, 4, 101-145. Greenwich, CT: JAI.

Greenwood, R. & Hinings, C. (1996). Understanding radical organizational change: Bringing together the old and the new instituationalism. *Academy of Management Review*, 21, 1022-1054.

Hambrick, D. & Mason, P. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9, 193-206.

Hofstede, G. (1996). *Cultures and Organizations: Software of the Mind*. New York: McGraw-Hill.

Huey, J. (1994). The new post-heroic leadership. *Fortune,* Feb. 21, 42-50.

Johns, K. (2003). Managing generational diversity in the workforce. *Trends & Tidbits.* April 11; http://www.workindex.com

Jones, G. (1986). Socialization Tactics, Self-efficacy, and Newcomers' Adjustments to Organizations. *Academy of Management Journal,* 29(2), 262-279.

Lewis, K. (2003). Managing multiple generations in the workplace can be a challenge. *Newhouse News Service*, November, 3.

Longenecker, J., McKinney, J., & Moore, C. (1989). The Generation Gap in Business Ethics. *Business Horizons*, September-October.

Louis, M. (1980). Surprise and Sense Making: What Newcomers Experience in Entering Unfamiliar Organizational Settings. *Administrative Science Quarterly*, 25, 226-251.

Martin, C. (2004). Managing the generation mix-part II. Top Echelon, Employers; http:www.topechelon.com

Meglino, B. & Ravlin, E. (1998). Individual Values in Organizations: Concepts, Controversies, and *Research. Journal of Management*. 24, 351-389.

Ondrack, D.A. 1973. Emerging Occupational Values: A Review and Some Findings. *Academy of Management Journal,* 16(3): 423-431.

Pelton, L., & Sheb, L. (2004). Teaching Business Ethics: Why Gen Y? *Marketing Education Review,* 14(3), 63-70.

Petress, K. (2003). Academic Dishonesty: A Plague on our Profession. Education, Spring, 12(3): 624-627.

Timmons, J. & Spinelli, S. (2004) *New Venture Creation: Entrepreneurship for the 21st Century,* 6th ed.; New York: Mc Graw-Hill/Irwin.

Van Maanen, J. (1976). Breaking In: Socialization to Work. *Handbook of Work, Organization, and Society*, (Ed.) R. Dubin. 67-130. Chicago: Rand McNally.

Weick, K. (1995). *Sensemaking in Organizations*. London: Sage.

Wolburg, J. & Pokrywczynski, J. (2001). A Psychographic Analysis of Generation Y College Students. *Journal of Advertising Research*, Sep-Oct.

Wood, S. (2005). Spanning the Generation Gap in the Workplace. *American Water Works Association Journal*, 97(5): 86-88.

WHICH CLASSROOM-RELATED ACTIVITIES ENHANCE STUDENTS' ENTREPRENEURIAL INTERESTS AND GOALS?: A SOCIAL COGNITIVE CAREER THEORY PERSPECTIVE

Gerry Segal, Florida Gulf Coast University
Jerry Schoenfeld, Florida Gulf Coast University
Dan Borgia, Florida Gulf Coast University

ABSTRACT

Social Cognitive Career Theory (SCCT: Lent, Brown & Hackett, 1994, 1996) proposes that career interests, goals, and choices are related to self-efficacy beliefs and outcome expectations. Segal, Borgia, and Schoenfeld (2002) found the SCCT model predicted goals for an entrepreneurial career. In this exploratory research, we survey entrepreneurship educators to determine their perceptions of which classroom related activities best enhance student's entrepreneurial self-efficacy and outcome expectations. Based on this, we provide pedagogical recommendations that entrepreneurship educators may use to boost students' interests and goals for entrepreneurial careers.

INTRODUCTION

As career choices go, becoming an entrepreneur is one of the most risky and unstructured choices an individual can make (Campbell, 1992). Being an entrepreneur is often viewed as an aversive career choice where one is faced with everyday life and work situations that are fraught with increased uncertainty, impediments, failures, and frustrations associated with the process of new firm creation. It seems unlikely that an individual would make a goal for an entrepreneurial career if they did not feel confident to perform the necessary tasks associated with forming and developing his or her own business.

Social Cognitive Career Theory (SCCT; Lent, Brown, & Hackett, 1994) is one of the most accepted and validated models discussed in the careers literature to understand career interests and goals (Gore & Leuwerke, 2000; Smith & Fouad, 1999; Swanson & Gore, 2000). It has been the basis for a growing and now established body of research in the career field (Fouad & Smith, 1996; Hackett & Lent, 1992; Lapan, Shaughnessy, & Boggs, 1996; Lopez, Lent, Brown, & Gore, 1997;

Smith, 2002; Fouad, Smith, & Zao, 2002; Lent, Brown, Sheu, Schmidt, et al., 2005; Williams & Subich, 2006). Recent research (Segal, Borgia, and Schoenfeld, 2002) found the SCCT model strongly predicted predict interest and goals for an entrepreneurship as a career choice.

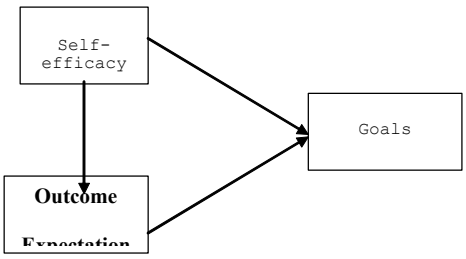
THE SCCT MODEL OF CAREER CHOICE

The career development process is affected by a variety of personal, environmental and situational factors that interrelate and change over the course of time. A number of theoretical works exist on the career development and selection process; however, the empirical evidence remains sketchy. Hackett and Lent (1992) suggested that the field would profit from theory-building efforts that "(a) bring together conceptually related constructs (e.g., self-concept, self-efficacy), (b) more fully explain outcomes that are common to a number of career theories (e.g., satisfaction, stability), and (c) account for the relations among seemingly diverse constructs (e.g., self-efficacy, interests, abilities, needs)". They presented a theoretical framework that attempted to explain central, dynamic processes and mechanisms through which career and academic interests develop, career-relevant choices are forged and enacted, and performance outcomes are achieved. The model is anchored in social cognitive theory (Bandura, 1986) and highlights the importance of self-beliefs and self-thought in fostering an individual's motivation and subsequently guiding their behavior.

Figure 1 illustrates the specific interrelatedness of the three main variables of the SCCT model, which affects the choice of career. These core variables are self-efficacy, which affects an individual's expectations for outcomes as well as their intentions towards performance, outcome expectations that affects their future performance or goals and, ultimately, their actual career goals.

Figure 1

SCCT Model



This career development theory may be particularly relevant for entrepreneurs. Krueger, Reilly, and Carsrud, (2000) compared models of entrepreneurial intentions to the ultimate choice of becoming an entrepreneur. Krueger et. al. (2000) suggested that intentions have proven to be the best predictor of planned behavior, particularly when that behavior is rare, hard to observe, or involves unpredictable time lags. Thus, social cognitive theory as utilized in the SCCT model may be ideally suited to the study of entrepreneurs and new businesses.

Self Efficacy

Much of the research on social cognitive career selection is based on the earlier works of Bandura (1997) on social cognitive theory and self-efficacy. Bandura's social cognitive theory advocated a model of triadic reciprocality, which illustrates the interacting influences between people and their behavior and environments [B = f (PÖ E)]. Self-Efficacy theory provides insight into individuals interacting with their environment and having a desire to acquire the cognitive, social and behavioral skills necessary to develop strategies that can aid in goal accomplishment. As defined by Bandura (1986), perceived self-efficacy is defined as people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances.

In the social cognitive view, self-efficacy is not a unitary, fixed or decontextualized trait but rather involves a dynamic set of self-beliefs that are specific to particular performance domains and that interact complexly with other person, behavior and environmental factors (Lent & Brown, 1996). Self-efficacy is concerned with an individual's thoughts of whether they are capable of succeeding at a particular endeavor. Unrelated to measurable, objective indices of ability or skills, self-efficacy relates to a series of self-beliefs about the capabilities one holds for a particular task. Self-efficacy beliefs are viewed as the most vital and all-encompassing explanation of personal agency (Bandura, 1997). The probability of initiating an activity may be partially explained by the extent to which an individual believes he or she can effectively perform the behavior (Bandura, 1977, 1986). Hackett and Betz (1981) wrote the seminal work in the career development literature focusing on the role of self-efficacy beliefs on the career selection process. Since that time, their work has been well supported by research. Meta-analysis (Lent et al., 1994) found that self-efficacy beliefs strongly ($R^2 = 0.52$) predicted career interests.

Self-efficacy not only contributes to interests and goals directly, but also through its effect on outcome expectations. This effect may be explained by the fact that people tend to expect more desirable outcomes in activities in which they see themselves to be efficacious (Bandura, 1997).

Outcomes Expectations

Outcome beliefs form as a result of an individual's expectations about the consequences of their behavior. Whereas self-efficacy is concerned with, "Will I be able to do this?" outcomes are concerned with, "If I do this, then what will be the outcome?" Outcome expectations were originally defined by Vroom (1964) in his efforts at introducing expectancy theory to organizational settings. According to Vroom, an individual will choose among alternative behaviors by considering which behavior will lead to the most desirable outcome. Outcome expectations play an important role in motivating individuals toward goals. Outcome expectations include several types of beliefs about response outcomes, such as beliefs about extrinsic reinforcement (receiving tangible rewards for successful performance), self-directed consequences (such as pride in oneself for mastering a challenging task), and outcomes derived from the process of performing a given activity (for instance, absorption in the task itself), (Lent et al., 1994). Bandura (1986) suggested three classes of outcome expectations: physical (e.g., financial gains), social (e. g., status), and self-evaluative (e.g., pride) that may affect career behavior.

SCCT suggests that outcome expectations are important determinants of career interests and goals (Gore & Leuwerke, 2000). People will have stronger interests in activities and careers and will develop goals to enter careers in which they anticipate desirable outcomes. The decision between a career of self-employment or working for others may be viewed as a cognitive process in which individuals compare the relative desirability of each career option. As noted by Bandura (1997), this cognitive process also encapsulates important affective reflections when making an employment decision. If an individual believes self-employment is more likely than working for others to lead to valued outcomes, then he or she is more likely to be drawn to self-employment.

Goals

Bandura (1986) defined goals as the determination to engage in a particular activity. In SCCT, goals are defined broadly and include plans, aspirations, or intentions. Bagozzi, Baumgartner, and Yi (1989) found that goals are the single best predictor of planned behavior. While environmental factors and personal experiences help to shape ones behavior, the setting of specific goals helps the individual to organize and direct their behavior in a sustained manner and increase the likelihood that desired goals will be achieved (Lent et al., 1994). Goals are an important element of many career choice and decision-making theories although many terms have been utilized including career plans, career decisions and career aspirations. Lent, Brown, & Hackett (1994) point out that the differences among the various terms for goals are generally minor and relate principally to their degree of specificity and proximity to actual choice implementation.

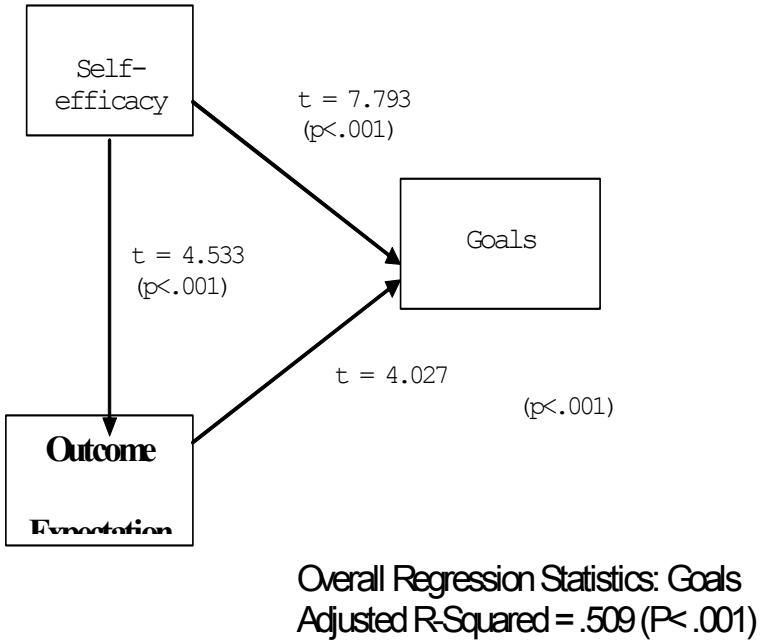
SCCT and Entrepreneurship Careers

As educators a primary goal is to facilitate the post graduation career success of our students by providing the necessary content knowledge, skills, experience, and confidence. The SCCT model of career choice's principle components of self-efficacy, outcome expectations, and goal establishment has been demonstrated to explain the career choice of entrepreneurship (Segal, Borgia, and Schoenfeld, 2002).

Segal, Borgia, and Schoenfeld (2002) tested the SCCT model on a sample of 115 undergraduate business students. Results (Figure 2) indicated that the SCCT model strongly (R^2 = 0.509) predicted interest and goals for entrepreneurship as a career choice. As hypothesized, students with higher entrepreneurial self-efficacy and higher self-employment outcome expectations had higher intentions to become self-employed.

Figure 2

Results for the SCCT Model



Using this knowledge, there are a number of pedagogical techniques that should be considered by entrepreneurship educators for use in their entrepreneurship curriculum delivery that will facilitate and strengthen the desire to major in and pursue a career in entrepreneurship.

Self-Efficacy Implications

That higher entrepreneurial self-efficacy leads to higher entrepreneurial intentions has several practical implications for educators. According to Bandura (1986), self-efficacy in an activity such as entrepreneurship develops through four processes: (1) enactive mastery or repeated performance accomplishments; (2) vicarious experience or modeling; (3) verbal persuasion; and (4) autonomic or physiological arousal. For educators, course development and teaching pedagogy should include various activities that will provide the opportunity for each of these four processes to be realized, leading to an overall increased entrepreneurial self-efficacy to be formed as a function of participation and completion of coursework. We will examine how educators may address each of these processes in turn; however, we do not intend to imply that these sources are independent from one another. In fact, there are activities that can be embodied within a course that would facilitate each of these processes being reinforced.

Enactive Mastery

Early task outcomes provide a powerful cue in formulating judgments of capability. The importance of self-efficacy should be recognized early in entrepreneurial education. Just as generals have learned that early victories in battle are important, so must educators recognize that early successful accomplishments may lead to future positive viewing of challenges.

The most effective process for fostering greater self-efficacy is to focus on providing hands-on opportunities to gain experience performing a particular task or activity. Studies have shown repeatedly that positive experience and success performing a task leads to increased self-efficacy. Correspondingly, failure can lead to lowered self-efficacy. For example, Bandura (1997) found that self-efficacy increases when one's experiences fail to validate one's fears and when the skills one acquires allow mastery over situations that the person once felt threatening. An important caution is that in the process of completing a task, if the learner encounters unexpected or intimidating situations, or if the experience highlights the limits of their present skills, self-efficacy decreases, even if the overall performance was deemed "successful." Only through repeated practice as the learner increases their ability to predict and manage threats do they develop a robust self-confidence that enables them to master subsequent challenges. For educators, it is imperative that they design learning opportunities in a way that allows students to know in advance what will be taught and that they experience success through active participation with the subject matter.

The Students in Free Enterprise (SIFE) program offers a framework for involving students in projects such as starting and operating a new business under faculty mentorship. Such programs can be used to provide a safe environment to build students' entrepreneurial self-efficacy. The ideal, however, would be to incorporate self-efficacy enhancement as an integral component of all programs.

Educational activities providing applied “real world” experience facilitate development of decision-making skills and can provide feedback that the student has mastered these skills. Enactive mastery may be obtained through successful accomplishment of small-scale entrepreneurial activities involving low levels of risk and challenge.

With little cost or risk, students can benefit from enactive mastery arising from "virtual reality" experiences in the classroom, including the use of (1) case methods, (2) role-playing, and (3) computer simulations. These teaching methods facilitate development of decision-making skills and can provide feedback that the student has mastered these skills. Enactive mastery may be obtained through successful accomplishment of small-scale entrepreneurial activities involving low levels of risk and challenge.

Bandura (1977, 1986) saw enactive mastery as the most important source of self-efficacy because actually performing the activity well or being successful gives people a strong sense of confidence that they can perform the required behaviors to produce the desired outcome. Failures tend to lower one’s self-evaluations while the positive feedback of task achievement increases self-efficacy levels.

Vicarious Experience

A second way that entrepreneurial self-efficacy could also be enhanced is through vicarious experience or modeling others’ behavior. As a child we learn that we do not have to touch the stove ourselves to learn it is hot. Observing others exhibit successful performance increases one’s own self-efficacy, particularly when the person modeling the behavior is someone with whom the entrepreneurship student can identify. Behavior modeling has been shown to improve performance in a wide variety of contexts. A meta-analysis of 70 studies on the effectiveness of management training (Burke & Day, 1986) found that vicarious experience, i.e., behavior modeling, was among the most effective of all training techniques.

For educators, increasing student entrepreneurial self–efficacy can be achieved by utilizing a number of activities that increase vicarious experiential learning. This includes using successful entrepreneurs as guest speakers who may serve as positive role models who share their keys to personal success. Video profiles of well-known entrepreneurs such as Richard Branson can also provide for vicarious experiences. Case studies are also rich teaching tools that in their richly written detail provide for the visualization of performance. Entrepreneurial mentoring programs could provide one- on-one learning through the observation of, and interaction with, successful practicing entrepreneurs. Student internships also put aspiring entrepreneurs in close contact with practicing entrepreneurs. Participation in business plan competitions has the opportunity for vicarious learning through the presentations of other competing teams.

Verbal Persuasion

Educators verbally reinforcing and persuading students that they can become successful entrepreneurs and liberally using positive feedback and praise are both types of verbal persuasion as described by Bandura (1977, 1986). Students' entrepreneurial self-efficacy can be enhanced by positive, encouraging comments from teachers. Indeed, entrepreneurial support systems, such as having an entrepreneurial based student organization to provide peer support, contact with alumni who offer support and encouragement, formal mentorship relationships with area entrepreneurs, and faculty student advising all can play important roles in supplying needed positive persuasion that will build student self-efficacy toward a career in entrepreneurship. Perhaps one of the reasons for the entrepreneurial drive of immigrants of certain cultures is the positive persuasion that only a close-knit family can provide.

Positive persuasion does not have to be limited to external sources. Students can provide their own intrinsic persuasion by the opportunity afforded to them by conducting research on entrepreneurship. By gathering data and discovering information on how to be a successful entrepreneur, student can convince themselves that they too are capable of becoming a successful entrepreneur. An old Chinese proverb states that all long journeys begin with small steps. Often the challenge of creating and operating a business as an entrepreneur may seem like an overwhelmingly long journey. Yet, by helping students recognize the many small steps that can be taken leading to the accomplishment of the long journey, students can be self-persuaded that the challenge of becoming an entrepreneur is not overwhelming. The development of a career prospectus that allows a student to plan their journey can often provide reduced fears, greater confidence and the visualization of success.

Autonomic Arousal

Entrepreneurship educators should address students' anxiety and fear surrounding an entrepreneurial career. The high costs of failure in the threatening and uncertain environment associated with new venture initiation can lead to dysfunctional levels of fear among students considering entering the field of entrepreneurship. Throughout the new venture initiation process one is subject to a host of negative psychological states, such as anxiety, frustration, and self-doubt. The combination of these negative affective states can lead to lowered self-efficacy beliefs.

Entrepreneurial education should therefore include self-management processes to deal with the fear inherent in entrepreneurship. Educators can alert students to expect these physiological states and reactions. Fostering their sense of excitement about potential accomplishments may help to balance their apprehension. Students can be reminded that some physiological arousal may lead to better performance, but too much physiological arousal becomes dysfunctional. This could lead

to discussion of stress management techniques, such as dietary improvement, exercise, meditation, biofeedback, and humor.

Edwards and Edwards (1991) suggested that entrepreneurs use the following six-step process to overcome fear and gain confidence: (1) since fear is a response to what we imagine might occur in the future, concentrate on the present moment; (2) recognize that you are safe right now; (3) become curious and begin thinking about what you might do now to avoid what you fear; (4) recall when you have met challenges in the past until you feel capable of handling those you now face; (5) imagine yourself taking the steps needed to prepare for challenges or threats until you feel confident in your ability to successfully carry out the necessary steps; and (6) anticipate the experience of feeling the success you have been rehearsing.

Kanfer and Ackerman (1989) has shown that helping individuals gain commitment to and the attainment of self-generated goals through assessing problems, setting specific goals in relation to those problems, monitoring ways in which the environment facilitates or hinders goal attainment, and self-administering reinforcement for progress toward or punishers for failing to work toward self-generated goals has been particularly effective in coping with overcoming negative emotional reaction such as fear and anxiety with those attempting to overcome alcoholism and substance abuse. These same techniques can be equally effective in overcoming the negative emotional responses that a novice in the field of entrepreneurship may experience at the onset of their career.

Outcome Expectations Implications

An outcome expectation is a person's belief that performing a given behavior will lead to a given outcome. Personal outcomes are those that have value to the individual such as pay, recognition and emotions. But value does not imply that outcome expectations will always be viewed as positive or desirable. Entrepreneurial behavior may result in outcomes the individual fears or dislikes. Embarrassment, long working hours, loss of pay, disciplinary actions and bankruptcy are all potential unpleasant outcome expectations.

Entrepreneurship educators influence students' outcome expectations. An entrepreneurial career can be depicted either as pursuing your dreams with unlimited potential, or as working long hours with your life's savings precariously at risk. Entrepreneurship educators can emphasize what can go wrong, or what can go right, with dramatic effects on students' outcome expectations.

The educator can play an important role in providing examples and activities that instill positive outcome expectations that correspond to the three areas identified by Bandura (1997): (1) tangible, (2) social, and (3) self-evaluative. The desirability of these expectations, and confidence in achieving these expectations, are principle components of individual motivation.

Tangible

Tangible or physical outcomes are those that are most easily identified and desired. This includes salary, standard of living, retirement security, working hours, and opportunity to pursue hobbies and other outside interests, among other outcomes. A common misconception is that the vast majority of small businesses fail within their first few years. This has a chilling effect on perceptions of outcome expectations. Yet, a large-scale study of the eight-year destiny of small firms (Kirchhoff, 1994) found that only 18 percent of all new venture initiations resulted in business failures with losses to creditors. In contrast, 28 percent survived under their original ownership and another 26 percent continued under ownership changes. To stimulate entrepreneurship, educators could remind students of the high earnings potential an entrepreneurial career makes possible. The best-selling book: The Millionaire Next Door (Stanley, 1999) reported that two-thirds of America's 3.5 million millionaires were self-employed.

As part of teaching pedagogy, educators could incorporate profiles of successful entrepreneurs, host current and retired entrepreneurs as guest speakers, establish an advisory board and utilize other means of providing other visible demonstrations on the positive aspects of entrepreneurship to raise student outcome expectations on the tangible benefits of this career choice. Having students create and establish their own business as part of a course or courses can also lead to demonstrated tangible success. At a more basic level, the reinforcement one receives from achieving classroom success as indicated through grades is a tangible, more measurable indicator of continued positive outcome expectations.

Social

While tangible outcome expectations are important and highly valued there are other outcomes that are desirable. This includes the social-related outcomes that can be correlated to entrepreneurship. These include respect and recognition, participation in civic and community groups, and being asked to serve as a guest speaker in a classroom or other venue.

Educators should include a focus on these important social outcomes that can raise expectations when interacting with successful entrepreneurs whether they are alumni, on advisory boards, guest speakers, or part of a written biography. As Kelly (2002) has indicated, individual needs are varied and change as a function of time, experience, and need accomplishment. A focus on tangible rewards only may not create the needed outcome expectation level needed to motivate a student to pursue an entrepreneurial career.

Self-Evaluative

At the highest level of needs is the more internally focused self-evaluative outcome area. These include an enhanced sense of pride, achievement, contribution to society, independence and self-actualization. Profiles and question and answer sessions with entrepreneurs can help to establish the role that these self-evaluative outcomes played in the successful entrepreneur's career. Other activities that can be incorporated into the entrepreneurship curriculum can begin to lay the foundation for realization of this outcome. This includes activities such as new venture creation, business plan competitions, class presentations, and college or course-related rewards and honors.

METHODOLOGY

As noted above, prior research has demonstrated that students with higher entrepreneurial self-efficacy and outcome expectations are more likely to form intentions or goals for an entrepreneurial career. However, there has been little research pertaining to how the use of different classroom-related activities influences students' entrepreneurial self-efficacy and outcome expectations.

We conducted an exploratory survey to determine which classroom activities best enhance students' entrepreneurial self-efficacy and outcome expectations.

We posted a request on the Academy of Management Entrepreneurship Division's Entrepreneurship Discussion Network (ENTREP-L) asking educators who had taught entrepreneurship or small business management during the previous 12 months to complete an on-line survey. Because of the exploratory nature of this study, we simply surveyed the entrepreneurship educators' perceptions and summarized their responses.

Thirty four entrepreneurship educators completed our on-line survey. We freely acknowledge that this was a non-representative convenience sample of entrepreneurship educators. Despite this, we felt the perceptions of these 34 educators offered something of value.

Survey Construction

We reviewed the entrepreneurship education literature to generate a list of twenty classroom-related pedagogical methods typically used by entrepreneurship educators. Table 1 provides a summary of these classroom-related activities that may be embodied in individual courses and throughout a program of entrepreneurship study.

Table 1: Pedagogical Methods Identified in Literature Review
Business Plan Competitions
Personal Career Plan
Small business Consulting Projects, including SBI® case-writing
New Venture Computer Simulations
Abundant Specific Feedback
Creating a Business Plan as a Class Project
Discussions on Current Events Involving Entrepreneurship
Videos about Entrepreneurial Firms
Entrepreneur Biographies (video and text based)
Encouraging Entrepreneurial Careers through Instructor Attitude/Enthusiasm
Entrepreneur Guest Speakers
Exercises and Role Play Activities Covering Critical Entrepreneurial Functions
Field Trips to Local Small Businesses
Formal Mentoring by an Entrepreneur
Internships with Entrepreneurs and Small Businesses
Lecturing
New Venture Initiation (actually starting a business as part of a class)
Self-Management Training (emotional intelligence, goal-setting, time-management, etc.)
Entrepreneurship Club

We constructed an on-line survey asking respondents to rate these twenty educational activities based on how likely they are to afford an opportunity to provide positive (1) enactive mastery, (2) modeling, (3) verbal persuasion, (4) autonomic arousal, and (5) outcome expectations for student participants.

The survey defined these five dimensions as follows:

1. Enactive mastery (hands-on opportunities to gain experience performing a particular task or activity)

2. Vicarious experience or modeling (observing others exhibiting successful performance)
3. Verbal Persuasion (verbally reinforcing and persuading students that they can become successful entrepreneurs and using positive feedback and praise) for the student participant.
4. Autonomic/ Physical Arousal (fostering positive emotional reactions, such as remaining calm and focused when confronted by difficult or stressful challenges)
5. Enhanced outcome expectations (tangible, social, and self-evaluative)

The on-line survey asked respondents to rate the 20 activities based on how likely they are to afford an opportunity to positively influence the five dimensions using the measurement scale: 1 definitely not, 2. very unlikely, 3 unlikely, 4 neither likely nor unlikely, 5 likely, 6.very likely, and 7 definitely.

RESULTS

The results are shown in Table 2. Mean scores are listed for each classroom-related activity's potential to enhance (1) enactive mastery, (2) modeling, (3) verbal persuasion, (4) autonomic arousal, and (5) outcome expectations.

Table 2: Survey Results

Classroom-related Activity	Scores (Means)					
	Verbal Persuasion	Role-Modeling	Affective	Enactive Mastery	Efficacy Index	Outcome Expectations
Business Plan Competitions	4.79	3.79	4.50	5.21	18.29	4.71
Personal Career plan	4.56	3.65	3.26	3.21	14.68	5.03
Case Study	4.29	4.03	2.88	3.38	14.59	4.12
Small business consulting projects, including SBI® case-writing	5.32	4.94	4.71	5.82	20.79	5.44
New Venture Computer Simulations	4.15	3.59	4.00	4.59	16.32	3.71
Abundant specific feedback	5.03	4.56	4.56	4.35	18.50	4.91

Table 2: Survey Results

Classroom-related Activity	Scores (Means)					
	Verbal Persuasion	Role-Modeling	Affective	Enactive Mastery	Efficacy Index	Outcome Expectations
Creating a Business Plan as a class project	5.21	4.53	4.47	5.35	19.56	5.35
Discussions on current events involving entrepreneurship	4.71	4.24	3.09	3.44	15.47	4.71
Videos about entrepreneurial firms	4.32	4.71	3.00	3.18	15.21	4.62
Entrepreneur Biographies (video and text based)	4.44	5.00	3.29	3.18	15.91	4.53
Encouraging entrepreneurial careers – instructor attitude/enthusiasm	5.38	4.65	3.74	3.56	17.32	4.74
Entrepreneur guest speakers	5.47	5.68	3.88	4.03	19.06	5.35
Exercises and Role Play covering critical entrepreneurial functions	4.82	4.82	5.32	5.18	20.15	4.88
Field trips to local small businesses	4.71	5.09	3.71	4.29	17.79	4.82
Formal mentoring by an entrepreneur	5.82	6.03	4.94	5.41	22.21	5.97
Internships with entrepreneurs and small businesses	5.74	5.88	5.26	5.94	22.82	6.15
Lecturing	3.53	3.24	2.44	2.74	11.94	2.79
New Venture Initiation (starting a business as part of a class)	5.85	4.82	5.26	6.12	22.06	6.18
Self-management training (i.e., goal-setting, time-mgt.)	4.24	3.79	4.88	4.12	17.03	3.94
Entrepreneurship Club	4.32	4.12	3.15	3.47	15.06	3.85

For the key dimension of enactive mastery, starting a business as part of a class was rated the highest at 6.12. This was followed closely by internships (5.94) and consulting projects (5.82).

Other activities that scored high were formal mentoring by an entrepreneur (5.41) creating a business plan (5.35) and business plan competitions (5.21).

In the vicarious experience or modeling dimension, formal mentoring by an entrepreneur rated highest (6.03), followed by internships (5.88) and entrepreneur guest speakers (5.68). The only other activity with a rating of at least five was entrepreneur bibliographies (5.00).

The respondents reported that new venture initiation (5.85) provided the best opportunity to provide verbal persuasion to students. This was followed by formal mentoring (5.82) and internships (5.74). Other activities that scored high were entrepreneur guest speakers (5.47), encouraging entrepreneurial careers with instructor attitude/ enthusiasm (5.38) and consulting projects (5.32).

The affective or autonomic arousal dimension had the lowest ratings. Respondents apparently felt that various classroom activities had less effect on this self-efficacy dimension. Class exercises and role play (5.32) were seen as the best way to help students learn to foster positive emotional reactions, such as remaining calm and focused when confronted by difficult or stressful challenges. This was followed by two activities with scores of 5.26: (1) exercises and role play and (2) new venture initiation.

We added the four dimensions of self-efficacy to obtain a self-efficacy index. We used this index to measure the total impact of the various classroom activities to build self-efficacy. These self-efficacy indices are listed in rank order in Table 3. Internships had the highest index score (22.82), followed by formal mentoring by an entrepreneur (22.21) and starting a business (22.06). Other classroom activities with high overall self-efficacy index scores were consulting projects (20.79) and exercises and role play (20.15).

Table 3: Classroom-related Activities Ranked by Self-efficacy Index

CLASSROOM ACTIVITY	INDEX
Internships with entrepreneurs and small businesses	22.82
Formal mentoring by an entrepreneur	22.21
New Venture Initiation (starting a business as part of a class)	22.06
Small business consulting projects, including SBI® case writing	20.79
Creating a Business Plan as a class project	19.56
Entrepreneur guest speakers	19.06
Abundant specific feedback	18.50
Business Plan Competitions	18.29
Field trips to local small businesses	17.79
Encouraging entrepreneurial careers – instructor attitude/enthusiasm	17.32
Self –management training (E.Q., goal-setting, time-mgt.)	17.03

Table 3: Classroom-related Activities Ranked by Self-efficacy Index	
CLASSROOM ACTIVITY	INDEX
New Venture Computer Simulations	16.32
Entrepreneur Biographies (video and text based)	15.91
Discussions on current events involving entrepreneurship	15.47
Videos about entrepreneurial firms	15.21
Entrepreneurship Club	15.06
Personal Career Plan	15.91
Case Study	14.59
Lecturing	11.94

Because Bandura (1997) argued that enactive mastery was paramount, we tried over-weighting this dimension to determine how this would affect our rankings. We found that even doubling the weight of enactive mastery had little effect on the rank order. Internships remained in the top position. Mentoring and starting a business remained in the top three. Even with enactive mastery double-weighted, the original ten top ranked activities remained in the top ten.

The top four classroom activities to enhance self-efficacy also had the strongest influence on student outcome expectations. Outcome expectations results are listed in rank order in Table 4. Starting a business had the highest score (6.18), followed by internships (6.16), formal mentoring by an entrepreneur (5.97), and consulting projects (5.44). Other classroom activities with high outcome expectation scores were creating a business plan and entrepreneur guest speakers (both were 5.35).

Table 4: Classroom-related Activities Ranked by Outcome Expectations	
CLASSROOM-RELATED ACTIVITY	OUTCOME EXPECTATION
New Venture Initiation (starting a business as part of a class)	6.18
Internships with entrepreneurs and small businesses	6.15
Formal mentoring by an entrepreneur	5.97
Small business consulting projects, including SBI ® case-writing	5.44
Entrepreneur guest speakers (tie)	5.35
Creating a Business Plan as a class project (tie)	5.35
Personal Career plan	5.03
Abundant specific Feedback	4.91

Table 4: Classroom-related Activities Ranked by Outcome Expectations	
CLASSROOM-RELATED ACTIVITY	OUTCOME EXPECTATION
Exercises and Role Play covering critical entrepreneurial functions	4.88
Field trips to local small businesses	4.82
Encouraging entrepreneurial careers – instructor attitude/enthusiasm	4.74
Discussions on current events involving entrepreneurship (tie)	4.71
Business Plan Competitions (tie)	4.71
Videos about entrepreneurial firms	4.62
Entrepreneur Biographies (video and text based)	4.53
Case Study	4.12
Self-management training (E.Q., goal-setting, time-mgt.)	3.94
Entrepreneurship Club	3.85
New Venture Computer Simulations	3.71
Lecturing	2.79

It is also interesting to note those classroom-related activities with low scores. Lecturing consistently ranked last, both in terms of self-efficacy and outcome expectations. Case study and entrepreneurship clubs ranked in the bottom five places in tables 3 and 4.

DISCUSSION

This research shows that there are a number of pedagogical techniques that should be considered by entrepreneurship educators to facilitate and strengthen students' intentions to major in and pursue a career in entrepreneurship. Course development and teaching pedagogy should include various activities that will provide the opportunity for each of these processes to be realized. The educator's goal is enhanced student entrepreneurial self-efficacy and outcome expectations as an inherent byproduct of participation and completion of coursework. The more highly-ranked classroom-related activities that can be incorporated in the development of course pedagogy, the greater the level of self-efficacy and outcome expectations that can fostered throughout the educational experience.

It is revealing that classroom lecturing was rated last in affecting students' self-efficacy and outcome expectations. Another commonly-used classroom technique, case study, also ranked low. The implication seems to be that real-world experience is the best teacher.

It is possible that entrepreneurship educators focus excessively on student knowledge and ability. "Hands-on" learning experiences may be as important as the more cognitive and theoretical information often emphasized in the preparation of program graduates. Knowledge and ability is necessary, but not sufficient for accomplished performance (Bandura, 1986). The relationship of knowledge and ability with performance is mediated by self-efficacy and outcome expectations. In other words, students possessing the requisite knowledge and skills for entrepreneurship may lack self-confidence or perceptions of desirable outcomes.

Entrepreneurship educators need to build integrative educational activities into their curriculum. It is important to make bridges connecting students to the external entrepreneurial environment. The top activities involved getting out of the classroom, either to start a business or to work closely with an entrepreneur. Clearly, the most effective classroom-related activities are those that strongly connect entrepreneurship students to a real venture or entrepreneur.

We are encouraged by the findings of this exploratory study. Empirical research should be used to further investigate the link between pedagogical methodology and students' entrepreneurial intentions.

REFERENCES

Bagozzi, R., Baumgartner, H., & Yi, Y. (1989). An investigation into the role of intentions as mediators of the attitude-behavior relationship. *Journal of Economic Psychology*, 10, 35-62.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191-215.

Bandura, A. (1986). *Social foundations of thought and action*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York: Freeman.

Burke, M.J., & Day, R.R. (1986). A Cumulative Study of the Effectiveness of Managerial Training. *Journal of Applied Psychology*, 71(2), 232 -246.

Campbell, C. A. (1992). A decision theory model for entrepreneurial acts. *Entrepreneurship Theory and Practice,* 17 (1), 21-27.

Edwards, S., & Edwards, P. (1991). *Making it on your own: Surviving and thriving on the ups and downs of being self-employed.* New York: St. Martin's Press.

Fouad, N. A., & Smith, P. L. (1996). A test of a social cognitive model for middle school students: Math and science. *Journal of Counseling Psychology,* 43, 338-346.

Fouad, N. A, Smith, P. L., & Zao, K. E. (2002). Across academic domains: Extensions of the social-cognitive career model. *Journal of Counseling Psychology,* 49(2), 164 – 177.

Gore, P. A., & Leuwerke, W. C. (2000). Predicting occupational considerations: A comparison of self-efficacy beliefs, outcome expectations, and person-environment congruence. *Journal of Career Assessment,* 8(3), 237-250.

Hackett, G., & Betz, N. E. (1981). A self-efficacy approach to the career development of women. *Journal of Vocational Behavior*, 18, 326-336.

Hackett, G., & Lent, R. W. (1992). *Theoretical advances and current inquiry in career psychology.* New York: Wiley.

Kanfer, R., & Ackerman, P.L. (1989). Motivation and cognitive abilities: An integrative/ aptitude treatment interaction approach to skill acquisition. *Journal of Applied Psychology,* 74 657-690.

Kelley, P. (2002). Revisiting Maslow. *Workspan*. 45, 50 – 56.

Kirchhoff, B. A. (1994). *Entrepreneurship and dynamic capitalism.* Westport, CT: Greenwood Publishing Group, Inc.

Krueger, N. F., Jr., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, 15, 411-432.

Lapan, R. T., Shaughnessy, P., & Boggs, K. (1996). Efficacy expectations and vocational interests as mediators between sex and choice of math/science college majors: A longitudinal study. *Journal of Vocational Behavior*, 49, 277-291.

Lent, R. W., & Brown, S. D. (1996). Social cognitive approach to career development: An overview. *The Career Development Quarterly*, 44, 310-321.

Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior,* 45, 79-122.

Lent, R. W., Brown, S. D., & Hackett, G. (1996). Career development from a social cognitive perspective. In D. Brown, L. Brooks, & Associates (Eds.), *Career choice and development: Applying contemporary theories to practice* (3rd ed., pp. 373-421). San Francisco: Jossey-Bass.

Lent, R.W., Brown, S. B., Sheu, H., Schmidt, J., et al. (2005). Social Cognitive Predictors of Academic Interests and Goals in Engineering: Utility for Women and Students at Historically Black Universities. *Journal of Counseling Psychology*, 52(1), 84-95.

Lopez, F. G., Lent, R. W., Brown, S. D., & Gore, P. A. (1997). Role of social-cognitive expectations in high school students' mathematics-related interest and performance. *Journal of Counseling Psychology,* 44, 44-52.

Segal, G., Borgia, D., & Schoenfeld, J. (2002). Using social cognitive career theory to predict self-employment goals. *New England Journal of Entrepreneurship*, 5 (2), 47 – 56.

Smith, S. M. (2002). Using the social cognitive model to explain vocational interest in information technology. *Information Technology, Learning, and Performance Journal*, 20(1),1-10.

Smith, P. L., & Fouad, N. A. (1999). Subject-matter specificity of self-efficacy, outcome expectancies, interests, and goals: Implications for the social-cognitive model. *Journal of Counseling Psychology,* 46, 461-471.

Stanley, T J. & W. D. Danko. (1999). *The millionaire next door.* New York.: Simon & Schuster

Swanson, J. L., & Gore, P. A. (2000). *Advances in vocational psychology theory and research* (3rd ed.). New York: Wiley.

Williams, M.W., & Subich, L.M. (2006). The gendered nature of career related learning experiences: A social cognitive career theory perspective. *Journal of Vocational Behavior,* 69 (2), 262 – 271.

Vroom, V. H. (1964). *Work and motivation.* New York: Wiley.

ENTREPRENEURSHIP: PUBLIC OR PRIVATE GOOD?

Inder P Nijhawan, Fayetteville State University
Khalid Dubas, Fayetteville State University

ABSTRACT

The paper examines the rationale for using entrepreneurship (small business formation) as a strategy for economic transformation. The data set for 50 states is used to test the hypothesis that the states that promote more entrepreneurial activities tend to experience higher Gross State Product (GSP) growth. Learner and Levine methodology is used to test the robustness of the entrepreneurship coefficient by altering the conditioning variables. Cluster analysis is also used to further test the hypothesis. The paper finds credible evidence in support of the hypothesis that entrepreneurship is a significant strategy for fostering economic transformation of communities that are ravaged by the loss of industries due to globalization and out-sourcing.

INTRODUCTION

Entrepreneurship is defined as an innovative or creative act that adds value to an organization or society. Entrepreneurship thus defined can occur in any size business – small or large. However, for this study, entrepreneurship is deemed synonymous with small business formation. Indeed, when Schumpeter (1912) described the critical role of entrepreneurs in economic development, he thought of small size businesses that create new products, new processes and/or reengineer the existing methods of production. These inventions and innovations render the existing technology obsolete and contribute to "creative destruction" that Schumpeter deems essential for economy to grow and develop.

There are at least three reasons why the state funding for entrepreneurial activities has grown dramatically over the last two decades.

First, the break-up of Soviet Union and transition of Eastern Europe from centralized to market economies have renewed interest in small business formation. The interest in small businesses has been further galvanized by globalization which has resulted in some cases, mass scale closing of factories and plants. Many small communities are devastated because the closed factories were the major and, in some cases, their only source of employment. Outsourcing has further taken its toll even in some many mid-size towns. More and more communities and states are pinning their hopes on the small business formation to transform the communities affected by international

competition so much so they are willing to dole out millions of dollars to create an environment that is friendly to entrepreneurial activities. More so because the cost of attracting large firms (measured by subsidies and tax breaks) could be prohibitive for a town with modest resources.

Second, Kirchhoff (1994) contends that small business role in economic development has changed because of flexibility in automation made possible by changes in technology, steady decline in transaction cost caused by the widespread of use and availability of internet, favorable environment created by knowledge based economy and demand for specialized goods created by global market. In view of these changes, small businesses are no longer considered a liability that needs to be maintained for social and political stability despite its inefficiencies. Kirchhoff believes that small business formation is indeed "a major source of innovations, employment opportunities and entrepreneurial activities".

Third, entrepreneurship, as defined above, satisfies the twin conditions for a public good: (1) Entrepreneurial activities create benefits that spillover in the entire economy. (2) It is difficult, impractical and cost ineffective to collect money from all those who benefit from initial entrepreneurial activities. The spillover benefits of entrepreneurial activities are chronicled by several studies: Audretsch, Carree and Thurik, (2001), Baumol (1993), Carree and Thurik (1998) and Shumpeter (1912). McDowell (2004) estimates that the direct and indirect effects of small business formation accounts for more than half of gross domestic product and approximately sixty to eighty percent of the new jobs created in this country. Robbins and Kirchhoff (1994) and Loveman, G. and W. Sengenberger,, (1991) note that high rates of gross state product and productivity growth are directly related to the size and extent of business formations.

Audretsch, Carree and Thurik, (2001) study shows that entrepreneurs create employment opportunities with secondary and tertiary employment effects in the economy. Using the data from 23 OECD countries, they show that an increase in the number of business owners per unit of labor force leads to lower levels of unemployment. Headd (2000) claims that entrepreneurs not only create employment opportunities but in some cases they hire individuals who might otherwise remain unemployed because they are too young or too old or lack experience, education or skills to be employed by the large or medium size firms. However, the relationship between employment creation and entrepreneurship may not be as clear cut as is generally thought. The causality may run both ways: Entrepreneurial activities create employment opportunities and lack of employment opportunities may stimulate self-employment. Audretsch, Carree and Thurik (2001) attempt to resolve this issue by studying the relationship between unemployment (reverse of economic growth) and small business formation. However, Reynolds, Hay, Bygrave, Camp and Autio (2000) take a more direct approach and study the correlation between employment growth and entrepreneurial activity. In both studies the relationship between employment creation and small business formation is positive. According to Audretsch (2001) the Census data further supports the job creation capacity of the small business (less than 20 employees). Between 1990-2003, small firms share in job

creation was 79.5 percent compared to 13.2 percent for mid-size companies (20-499 employees) and 7.3 percent for large size firms employing 500 and more employees.

Other spillover effects include the favorable effect of small business formation on the inflation and unemployment trends. Acs and Audretsch (1990) and Audretsch (1995) claim that contrary to the general impression, small businesses also contribute disproportionately to the pool of inventions and innovations. Small businesses have successfully changed the market structure which was dominated by large size oligopolistic companies. Further, competition spurred by an increase in number of small firms has a favorable effect on total factor productivity (Carrie and Thurik 1998). The small business' flexible techniques of production have enabled many communities to absorb the shocks of demand fluctuations (Small Business Research Bulletin, 2001-2002). Carree and Thurik (1998) believes that small businesses also provide a ready market for business loans for most banks. Reuters (2005) claims that .small businesses also are responsible for increased capital spending and higher employment retention.

Spillover benefits listed above provide a strong case for using public funds to support of entrepreneurial activities. After all, it is not just the entrepreneur, but the entire society gains from these activities. Further, since, by its very nature, the gains of entrepreneurial activities are dispersed in the entire economy, there is no mechanism available to an entrepreneur to collect money from non-paying beneficiaries. This provides further rationale for using public funds to support the entrepreneurial activities. Like other public goods, entrepreneurial activities may be under-produced. Thus the state may have a ground for using coercion (taxes) to finance entrepreneurial activities.

One may argue that there is nothing special about the spillover benefits of small firms; the large companies also create the spillover benefits. A recent study by Edmiston (2004) shows that the large firms with 300 or more workers may retard the growth of existing firms or make it unattractive for new firms to enter. The study shows that in Georgia a new firm hiring 1000 workers may eliminate 715 other jobs that would have been created or retained had the company not located. Fox and Murray (2004) claim that the net employment effect of large firm may be close to zero considering the jobs it destroys and new job creation it retards. Edmiston (2004) supports this view when he concludes that "The evidence suggests that the negative effects dominate with many large-firm locations". Indeed, costs of attracting large firms are often underestimated. The cost is estimated based on total subsidies divided by the number of jobs created. But the cost per job is much higher in that the large firms destroy many jobs (Edmiston, 2007).

Much of the case in favor of the states support of entrepreneurial activities stems from the hypothesis that small business formation is an important determinant of economic development. The positive relationship between small business formation and economic growth is chronicled by a number studies: Audretsch and Thurik, 2000; Audretsch, Carree, van Stel and Thurik, 2002; Carree and Thurik, 1999; Carree, van Stel, Thurik and Wennekers, 2001; Audretsch, Carree and Thurik, 2001.

In all of these studies the international or national data is used to test the validity of the hypothesis. Our study differs from these in that we use data from fifty states to examine the robustness of the statistical relationship between small business formation and economic growth.

METHODS

In what follows, we use the methodology suggested by Learner (1983) and Levine et al (1991) to test the robustness of small business formation coefficient by specifying and altering a set of other conditioning variables which explain GSP growth rate. It is assumed that the small business formation coefficient is statistically robust if it's a *priori* sign and statistical significance is insensitive to alternations in the conditioning set of variables.

The initial regression model includes the following:

$$(1) \qquad G_i = a + b_1 Pop + b_2 Inc_i + b_3 Lab_i + b_4 Edu_i + E_i$$

Where G_i is the GSP growth rate between 1999-2003, Pop_i is the percentage growth rate of population in each state, Inc_i is the per capita income in 1990 for each state, Lab_i is the percentage change in labor force in each state, Edu_i is the percentage change in number of persons with college degree in each $state_i$. SB_i is the percentage change in small business formation in each state and E_i is error term.

Next, the robustness of the small business formation coefficient was tested by adding and altering a set of generally accepted variables in state growth literature. Equation 2 represents a general model that includes the following:

$$(2) \qquad G_i = aS + b_1 I + b_2 P + E$$

Where G_i is the GSP average growth rate between 1999-2003; S stands for a set of variables, which are generally included in most empirical studies on the determinant of GSP growth rate. These variables include all the variables mentioned in equation 1. Small business formation represents the variable of interest "I" and is measured by the percent of businesses with less than 500 workers per million of population and "P" represents a pool of other potential variables, which are identified by researchers on GSP growth rate. The list of "P" variables include ratio of net exports in GSP for each state, innovations and ideas measured by the percentage of small business research grants per million population, financial capital availability measured by the venture capital commitment per person, research expenditure per person in each state and percentage of immigrants in each state and "E" represents the error term.

The cross- section data from 50 states within United States was used to test the hypothesis that the differences in GSP rates of growth of different states can be explained by the differences in rate of increase in businesses established in different states.

The cross-section data for 50 states are derived from the Bureau of Economic Research and Census Bureau. The data for small business formation is taken from Small Business Administration, office of Advocacy (2005).

RESULTS

Table 1 shows that 42 percent of the variation in the average rate of growth of GSP is explained by the variables included in the model 1. The F- test indicates that the equation is statistically significant at .05 level. Signs of all the variables are what were expected a priori. The critical t-values indicate that all the explanatory variables except education are statistically significant at .05 level.

Table 1

	R^2	F-statistic	Co-efficient	t-statistics
Model 1	.429	8.519		
Constant			-7.897	-. 687
Population			- .529	-2.649
Education			. .108	2.062
Labor			. 018	2.352
Income			. 102	3.150
Model 2	.511	9.395		
Constant			-3.137	- .291
Population			- .418	-2.432
Education			. 003	.020
Labor			. 012	1.990
Income			. 001	1.915
Small business			3.837	2.799

Table 1				
	R^2	F-statistic	Co-efficient	t-statistics
Model 3	.649	7.479		
Constant			-10.178	- .697
Population			-.400	- 2.091
Education			.043	.278
Labor			.009	1.415
Income			.001	1.959
Small business			5 .0144	3.385
Ideas and Innovation			.790	1.903
Research and Development			.540	.912
Model 4	.535	7.081		
Constant			-2.065	.751
Population			-2.990	-1.808
Education			.123	.692
Labor			.002	1.020
Income			.003	2.395
Small business			3.885	2.770
Trade			4.125	1.087
Immigration			- 0.182	-1.227

Next, we include in our model the "I" (interest) variable i.e. small business formation rate (see model 2). It is noteworthy that all the vital statistics show an improvement: R^2 jumps from .429 to .511, F statistic increases from 8.519 to 9.395 and is statistically significant at 0.05 and 0.01 levels. Small business formation coefficient is not only statistically significant at 0.05 level, but its coefficient also is the largest. The fact that the magnitude of intercept is small and is statistically insignificant vindicates that the omitted variables are unimportant.

Next, we test the robustness of small business formation coefficient by adding and altering a set of generally accepted variables in GSP growth literature. The equation 2 stipulates a general model:

$$(2) \qquad G_i = aS+b_1I+b_2 P+E$$

Based on the above equation, two (2) additional regression models are presented. Whereas the regression Models 1 and 2 include only "S" variables and "I" interest variable, models 3 and 4 include all the variables included in model 1 plus possible combinations of "P"variables that are included in the GSP growth literature. If the statistical significance and the sign of the coefficient of business formation remains in tact at the extreme bounds, and is not sensitive to the inclusion of a combination of "P" variables, it can be stated with confidence that business formation variable coefficient is robust. A perusal of the regression models 3 and 4 indicate that neither the sign nor the statistical significance of the business formation coefficient is affected by addition of a set of conditioning variables such as ideas and innovations, research and development expenditures, share of immigrants in total population and exports share in GSP for each state. It is, indeed, interesting to note that whereas some other variables are proven to be fragile (see for example, the variables Labor and Income), the small business formation coefficient maintains its robustness when conditioning variables are changed.

Admittedly, even if the small business formation coefficient is robust, the regression analysis at best indicates an associative relationship; it does not conclusively prove that small business formation is the cause of variance in GSP growth rate. However, there is an intuitive reason that small business formation is the cause and not the effect of GSP growth rate. Our measure of small business formation is dated 1999 compared to the average GSP growth rate over the period 1999-2003. It is, therefore, logical to argue that the average rate growth of the GSP between 2000-2003 could not have affected the small business formation four years earlier.

Cluster analysis was used to further test the hypothesis. A hierarchical clustering analysis with the Ward method was used to group all 50 states on PerSmallBusiness and GSPrateofGrowth variables. This method produced 6 clusters as follows:

Table 2: Mean Values for PerSmallBusiness and GSPrateofGrowth for Six Clusters

Cluster	# States	PerSmallBusiness	GSPrateofGrowth
1	21	210.57	11.43
2	9	227.67	18.59
3	2	322.50	30.44
4	7	263.00	15.16
5	8	309.75	19.04
6	3	304.33	10.23
Overall mean		246.96	15.14

Mean values and overall mean values are given for the above two variables for all clusters. Clusters 3, 4 and 5 have the average PerSmallBusiness values higher than the overall average and the corresponding average values for GSPrateofGrowth are also above the overall average for this variable. These two variables have below the overall average values for both of these variables for cluster 1 so it is consistent with a positive relationship between PerSmallBusiness and GSPrateofGrowth. This relationship, however, does not hold for clusters 2 and 6 that contain a total of 12 states.

It could therefore be stated that higher levels of PerSmallBusiness are associated with higher levels of GSPrateofGrowth for most clusters that contain a total of 38 states. In addition, the highest average value of PerSmallBusiness (322.50) was also associated with the highest average value of GSPrateofGrowth (30.44) for cluster 3 that contained two states. Similarly, the lowest average value of PerSmallBusiness (210.57) was also associated with the lowest average value of GSPrateofGrowth (11.43) for cluster 1 that contained 21 states.

SUMMARY AND CONCLUSIONS

The paper finds ample theoretical and empirical evidence in support of using entrepreneurial activities as a strategy for economic development. The spillover effects of entrepreneurial activities and the inability of small entrepreneurs to garner compensation from all the beneficiaries of their activities provides a strong support for public funding. Entrepreneurial activities satisfy all the characteristics of a public good and is, therefore, likely to be under-produced unless public funds are provided.

REFERENCES

Acs, Z.J., B. Carlsson & Ch. Karlsson, (1999), The linkages among entrepreneurship, SMEs and the macroeconomy, in Z.J. Acs, B. Carlsson & Ch. Karlsson (eds.), *Entrepreneurship, Small and Medium-Sized Enterprises and the Macroeconomy,* Cambridge, UK: Cambridge University Press. (Reference cited in David Audretsch & Roy Thurik, Discussion Papers on Entrepreneurship, Growth and Public Policy, ed Group Entrepreneuship, Growth and Public Policy, MPI Jena, Max Planck Institute for Reseach into Economic System, Group Entrepreneurship, Growth and Public Policy, ISSN 1613-8333).

Acs, Z.J., B. Carlsson & Ch. Karlsson, (1999), The linkages among entrepreneurship, SMEs and the macroeconomy, in Z.J. Acs, B. Carlsson and Ch. Karlsson (eds.), *Entrepreneurship, Small and Medium-Sized Enterprises and the Macroeconomy*, Cambridge, UK: Cambridge University Press.

Audretsch, D.B., (1995), *Innovation and Industry Evolution*, Cambridge, MA: MIT Press. (Reference cited in David Audretsch and Roy Thurik, Discussion Papers on Entrepreneurship, Growth and Public Policy, ed Group

Entrepreneuship, Growth and Public Policy, MPI Jena, Max Planck Institute for Reseach into Economic System, Group Entrepreneurship, Growth and Public Policy, ISSN 1613-8333).

Audretsch, D.B. M.A. Carree & A.R. Thurik, (2001), Does entrepreneurship reduce unemployment? Discussion paper, Tinbergen Institute, Erasmus University Rotterdam.

Audretsch, D.B. & A.R. Thurik, (2000), Capitalism and Democracy in the 21st century: from the Managed to the Entrepreneurial Economy, *Journal of Evolutionary Economics*, 10(1), 17-34. (Reference cited in David Audretsch and Roy Thurik, Discussion Papers on Entrepreneurship, Growth and Public Policy, ed Group Entrepreneuship, Growth and Public Policy, MPI Jena, Max Planck Institute for Reseach into Economic System, Group Entrepreneurship, Growth and Public Policy, ISSN 1613-8333).

Baumol, W.J., (1993), *Entrepreneurship, Management and the Structure of Payoffs*, Cambridge, MA: MIT.

Bureau of Economic Research, Federal Spending Report, (2005).

Carree, M.A. & A.R. Thurik, (1998), Small firms and economic growth in Europe, *Atlantic Economic Journal*, 26(2), 137-146.

Carree, M.A., A. van Stel, A.R. Thurik & A.R.M. Wennekers, (2001), Economic Development and Business Ownership: An Analysis Using Data of 23 OECD countries in the period 1976-1996, *Small Business Economics*, Vol. 16.

Edmiston, K.D. (2004). The Net Effects of Large Plant Locations and Expansions on County Employment, *Journal of Regional Science*, 44(2), 289-319. (Reference cited in David Audretsch and Roy Thurik, Discussion Papers on Entrepreneurship, Growth and Public Policy, ed Group Entrepreneuship, Growth and Public Policy, MPI Jena, Max Planck Institute for Reseach into Economic System, Group Entrepreneurship, Growth and Public Policy, ISSN 1613-8333).

Edmiston, K.D. & G.K. Turnbull. (2007). Local Competition for Economic Development, *Journal of Urban Economics*, forthcoming.

Fox, W.F. & M.N. Murray. (2004). Do Economic Effects Justify the Use of Fiscal Incentives? *Southern Economic Journal*, 71(1), 78-92.

Headd, Brian., (2000), *Small Business Economic Indicators*, The Office of Advocacy of the U.S. Small Business Administration.

Kirchhoff, B.A., (1994), *Entrepreneurship and Dynamic Capitalism,* Westport, CT: Praeger.

Learner, Edward E. (1983). Let's Take the Con Out of Econometrics. *American Economic Review*. March,73, 31-43.

Levine, Edward & David Renet. (1991). Cross-Country Studies of Growth and Policy: Some Methodological Conceptual and Statistical Problems. *World Bank Papers Series*, Number 608, 175-186.

Loveman, G. & W. Sengenberger, (1991), "The re-emergence of small-scale production; An international comparison, *Small Business Economics,* 3, 1-37.

McDowell, John. (2004). *New look at Entrepreneurship in The 21st Century*, Small Business Administration, Office of Advocacy.

Reynolds, P.D., M. Hay, W.D. Bygrave, S.M. Camp & E. Autio, (2000), Global Entrepreneurship Monitor: 2000 Executive Report, Kauffman Centre for Entrepeneurial Leadership at the Ewing Marion Kauff-man Foundation.

Reuters (2005), Small businesses: still optimistic, *CNN Money*.

Robbins & Kirchhoff, B.A. (1994), *Entrepreneurship and Dynamic Capitalism,* Westport, CT: Praeger.

Schumpeter, J.A., (1912), *The Theory of Economic Development,* Oxford: Oxford University Press.

Small Business Administration, Office of Advocacy. (2005).