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RESEARCH ARTICLE

Are Female-Owned Business Ventures Riskier Than Male-Owned Business Ventures? A Comparative Study of Gender Influences on Economics and Entrepreneurial Risk Patterns

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Abstract

Female entrepreneurs still face some social injustices that affect their profitability and success compared to their male counterparts. There are often major differences between the two gender groups in terms of success, market entry and profitability. This study takes a different approach by examining gender and its influences on entrepreneurial risk patterns. The purpose of this study was to conduct a comparative study on female-owned business enterprises (FOB) and male-owned business enterprises (MOB). A crosstabulation analysis was conducted to examine gender differences in entrepreneurial risk patterns. First, a conceptual framework of the structural relationship between gender and entrepreneurial risk patterns is proposed. Second, a random sample ($N = 213$) of females ($n = 111$) and males ($n = 102$). The *Entrepreneurial Risk Assessment Scale* (ERAS) was administered to a sample of SMEs. The results of the study indicate there were slight gender differences in individual demographic variables such as capital investment amounts and market entry barriers. Furthermore, there were only slight firm idiosyncrasies between the two groups in terms of risk patterns and market behavior. The conclusions from this study indicate that FOBs were no more risky or more vulnerable to failure compared to MOB. An implication is that gender is not a strong influence on entrepreneurial risk patterns with business enterprises.

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Introduction

There are an increasing number of women who are starting their own businesses. Many are leaving the workforce and are pursuing entrepreneurship as an alternative. There has been extensive research on examining female-owned business enterprises (FOB). It is still an intriguing topic of research. Furthermore, FOBs are still experiencing gender-related barriers that act as an impediment to their success and prosperity. Moreover, there are several FOBs that are emerging in major and traditionally male-dominated industries. They are entering industries such as construction, agriculture, manufacturing, wholesale, and technology. As there are emerging trends in entrepreneurship and business ownership, FOBs continue to increase.

The majority of the prior research has devoted a considerable focus to gender differences and the struggles with female entrepreneurs. The prior research has addressed several aspects of female entrepreneurship and the barriers to their success: (a) Stevenson, 1986; Buttner and Rosen, 1989; Sexton and Bowman-Upton, 1990; (b) Brush, 1992; Kolvereid, Shane, and Westhead, 1993; Fay and Williams, 1993; and (c) Freeman and Varey, 1997; Marlow, 1997; Sang Suk, and Stearns, 2012. Consequently, we may have a one-dimensional picture on female-owned business enterprises. One of the most interesting aspects of research on female-owned business enterprises (FOB) is their success or failure rates.

However, despite the extensive research on female entrepreneurship that encompasses several areas, there is a gap in the literature. An unexplored area is an investigation of risk patterns of female business enterprises. An investigation of this issue is important, because it builds on the prior research on female entrepreneurship and provides insight into the risk behavior of female-owned enterprises. This study examines female business enterprises risk patterns that were not explored in the prior research.

In this study, the researcher extends the prior research on female entrepreneurship by the addressing the gap in examining firm risk patterns and gender. This study investigates the impact of seven factors of entrepreneurial risk: (a) *Internal Enterprise Operations*; (b) *External Enterprise Operations*; (c) *Overhead Costs and Operations*; (d) *Government and Market Forces*; (e) *Globalization and Market Forces*; and (f) *Economic Forces*. This study is a continuation of a prior study on female-owned business enterprises (Miles, 2012).

This research has two objectives: (a) examine firm risk patterns with female-owned business enterprises (FOB); and (b) conduct a comparative analysis on economic risk pattern differences between FOBs and male-owned business enterprises (MOB). This study also attempts to challenge the conventional wisdom on female-owned businesses in terms of risk patterns of FOBs. This research attempts to make three contributions to the field of study. First, provide insight into the firm dynamics of female-owned businesses. Second, provide empirical support and foundation for the research. Lastly, extend the research beyond the prior research on female-owned businesses.

This paper is constructed in the following structured format. Section One presents a review of the literature and prior research relevant to the study was compiled. Section Two presents the hypotheses proposed for the study. Section Three describes the sample, variables and data collection. Section Four presents the conceptual model of the study. Section Five presents the results and the statistical analyses of the data. Section Six presents the discussion of the results, implications, the contribution of the study, and directions for the future research. Lastly, the conclusion and summary are presented.

Literature Review and Prior Research

Prior Research on Female-Owned Businesses

A majority of the prior research on comparing female-owned businesses to male-owned businesses has been very multifaceted. Based on the prior literature there is a large body of the research has concluded there are some gender differences between female-owned businesses and their male counterparts.

The majority of the prior research on gender differences in entrepreneurship focused on six categories: (a) gender differences in personality traits and behavioral characteristics; (b) gender differences in startup dynamics; (c) gender differences in education and training in entrepreneurship; (d) gender differences in firm performance; (e) gender differences in financing and startup capital; and (f) gender differences in venture risk (also see Figure 1).

Gender Differences in Personality Traits and Behavioral Characteristics

Some of the prior research studies have focused on gender differences in personality traits and psychological and behavioral characteristics. Still there are social perceptions and prevailing myths about female entrepreneurs and their business success (Ahl, 2002; Menzies, Monica & Yvon, 2004; Minniti, Arenius & Langowitz, 2004; de Bruin, Brush, & Welter, 2006; Billore, Zainuddin, Al-Haj, & Halkias, 2010).

Many of the prior studies found there were no specific differences in personality types between males and female entrepreneurs. Thus, there was no specific personality type that can be described as female or male entrepreneurs' personality characteristics (Chu, 2000). Gender is attributed to individual characteristics. Males and females differ in their management characteristics in the owner-manager businesses (Romano, 1994; Mukhtar, 2002). Compared to males, females tended to have lower incomes, preferred to work part-time, and had perceptions of poor opportunities (Baron, Markman, & Hirska, 2001; Cowling & Taylor, 2001; Zinger, Lebrasseur, Robichaud & Riverin, 2007).

Interestingly, there were no differences in overall usage based on gender, frequency, determinants (such as perceived usefulness and perceived ease of use), and traits (such as perseverance and flexibility) observed

differences based on gender; male entrepreneurs recorded higher usage frequency than females (Ndubisi, 2008). There were gender discrimination differences between female and male entrepreneurs (Sexton & Bowman-Upton, 1990; Bruni, Gherardi, & Poggio, 2004).

Men and women did not differ in their *entrepreneurial intentions*. Furthermore, females who perceived themselves as more similar to males (high on male gender identification) had higher entrepreneurial intentions than those who saw themselves as less similar to males (low male gender identification) (Marlow, 1997; Gupta, et al, 2009). Female entrepreneurs have different personal characteristics and motivations for pursuing business ownership (Heilman & Chen, 2001; Marlow, 2002; Sarri & Trihopoulou, 2005).

Women were much less likely than men to perceive that they have the ability to be an entrepreneur (Thebaud, 2011). Significant differences emerged between females and males in terms of gender specifics in entrepreneur personal characteristics. Those differences in characteristics were related to certain psychological motivational factors and social capital categories, but not human capital (Širec & Močnik, 2011). The following hypothesis was developed from the preceding literature and prior research:

Hypothesis 1: Female-owned business enterprises (FOB) are different compared to male-owned business enterprises (MOB) in terms of individual demographics (age, marital status, and education level).

A comparison of personality types, proved no differences between males and females. Men and women did not differ in their *entrepreneurial intentions*. However, women were much less likely than similar men to perceive that they have the ability to be an entrepreneur (Marlow, 1997; Gupta, et al, 2009).

Gender Differences in Startup Dynamics

Some of the prior studies have concluded there are gender differences in motivating factors with starting up business enterprises. Both genders have a variety of reasons for starting a business venture. Women (as well as men) were primarily motivated by autonomy, achievement, a desire for job satisfaction and other non-economic rewards (Cromie, 1987). Other contributory factors in determining gender differences between male and female entrepreneurs were: (a) family and social background; (b) differences in education level of both sexes; (c) government policies; and lastly, (d) country and social roles (Stevenson, 1986).

Gender differences tend to influence management and communication styles, entrepreneurial behavior, and impact the quality of working life of a company's workforce has been substantiated. Gender differences are apparent in startup ventures (Brush, 1992; Carter & Allan, 1997; Freeman & Varey, 1997; Orhan & Scott, 2001; Bird & Brush, 2002).

There were no gender differences concerning the perceptions of restraints to start-ups (Kolvereid, Shane, & Westhead, 1993; Mirchandani, 1996; Miaoulis, Brown, & Saunders, 2005; Hughes, et al., 2012). Female entrepreneurs tend to be similar to the majority of the male population of entrepreneurs that are constantly under threat (Lewis, 2006). There are differences between male and female entrepreneurs in terms of restricted access to markets (Bates, 2002).

Interestingly, in the field of science, there were some notable gender differences. Male and female science entrepreneurs displayed similar motivations for entrepreneurship, but collectively differed from their non-academic entrepreneur counterparts. Women science entrepreneurs also faced additional problems with work life balance conflicts and social networks (Rosa, & Dawson, 2006). Other studies noted gender differences by firm characteristics. Business ventures managed by men tended to be bigger and exist longer than the ones managed by women. However, in the case of establishing a business, both men and women were very similar (Startienė & Remeikienė, 2008).

Economic and enterprise support policies tend to contribute to the perpetuation of disadvantages faced by many female entrepreneurs (Browne, Moylan, & Scaife, 2007). Critical success factors such as family support, knowledge, communication skills, knowledge of business, product competency, business capability, and availability of resources were found to affect the success of business ventures and gender differences (Narayanasamy, Rasiah & Jacobs, 2011).

Gender Differences in Education and Training in Entrepreneurship

There were notable gender differences in education levels and entrepreneurship training programs and curriculums. There were significant differences between the characteristics of the male and female entrepreneurs, and the businesses, which they form. Women appear to have different educational and work backgrounds coming into business ownership (DeCarlo & Lyons, 1979).

Furthermore, the female respondents proved to have a significantly lower age profile than the men, although both remained within the age range of 30-40 found by other studies (Birley, Moss & Saunders, 1987). Women in male-dominated fields felt forced into allowing external factors (customers, suppliers, environments, etc.) to dictate their strategies, regardless of their personal values. In contrast, their male counterparts' strategies mirrored personal values (Olson & Currie, 1992).

There were notable gender differences in needing assistance from the Small Business Development Center (SBDC). Interestingly, Hispanic males felt they needed less assistance in the areas of finance and accounting compared to the Hispanic females. There were behavioral differences in assistance seeking also are present between Hispanic and Caucasian males and females (Jones & Tullous, 2002). Educational attainment was an impact on differences between women and minority-owned firms in terms of debt capital (Coleman, 2000).

Female business owners with a college degree rated firm performance higher compared to male business owners with the same education. However, education alone was not a significant factor in small business performance (Swinney, Runyan & Huddleston, 2006). Training on starting a new business, as a common factor, has a greater influence on female entrepreneurial activity (Tsyganova & Shirokova, 2010).

Training programs for women to improve their management skills reduced the gender gap in starting a business. Gender differences were negligible after controlling for the managerial experience. The lower probability of females starting a business was attributed to the lack of managerial experience (Kodama & Odaki, 2011). Female entrepreneurs tend to nurture satisfaction with work-family balance by creating work-family synergies. However, male entrepreneurs tend to nurture satisfaction with work-family balance by obtaining family support at home (Eddleston & Powell, 2012).

Gender Differences in Firm Performance

There were some critical studies concerning gender differences and firm performance. Female entrepreneurs tend to underperform relative to men when the data is examined at the most aggregate level (Du Rietz & Henrekson, 2000). Furthermore, there were sharp structural differences between male and female entrepreneurs, where female entrepreneurs, among other things, tend to run smaller firms, be underrepresented in manufacturing and construction, tend to be less export-oriented, and disproportionately reliant on households as customers (Du Rietz & Henrekson, 2000). Female-run businesses tended to primarily have women customers, supporting the proposition that women tend to set up "traditionally" female run businesses. However, men were found to have a more even spread regarding the gender of their customers (Birley, 1987).

The relationship between gender and business performance is complex. There were no significant differences in profit margins, however female-owned enterprises tend to grow more rapidly in terms of employment compared to male-owned business enterprises (Rosa, Carter, & Hamilton, 1996; Davidson & Burke, 2004; Chirwa, 2008; Popescu, 2012; Sang Suk, & Stearns, 2012). However, other studies argued that female entrepreneurs relatively underperformed compared to their male counterparts (Inmyxai, & Takahashi, 2010). The emergence of a gender gap in entrepreneurship is attributed to changes in demographic variables, different value systems and factors (Startien & Remeikien, 2008).

Some of the prior research found that on average women invested less time in the business than men. Women invested less time in the business than men because of a lower (expected) productivity and a lower preference for work time (Verheul, Carree & Thurik, 2009). The role of gender is apparent in the differences between FOBs and MOBs in terms of financial performance (Collins-Dodd, Gordon & Smart, 2004).

Female entrepreneurs received smaller loans compared to their male counterparts. The returns from each dollar they received were no lower in terms of overall sales revenue (Bardasi, Sabarwal & Terrell, 2011). The following hypothesis was developed from the preceding literature and prior research:

Hypothesis 2: FOBs are different compared to MOBs in terms of firm characteristics (length of business ownership, entity type, industry type, employee number, and capital investment).

Prior research provided evidence of differences between women and men in terms of firm characteristics. There were gender differences observed in firm performance, business performance, and demographic variables.

Gender Differences in Financing and Startup Capital

Prior research on gender differences in financing and capital has been extensive. In terms of financing, there were quantifiable gender differences are evident in certain areas of business financing. When faced with rejection of a loan request, women were more likely to seek venture capital and to put the proposed business on hold (Buttner, & Rosen, 1992). Furthermore, the intrasectoral similarities demonstrated that gender is only one of a number of variables affect the financing process (Carter & Rosa, 1998). Many times, women business owners faced debt-financing discrimination from financial institutions (Orhan, 2001). Female entrepreneurs had a smaller amount of start-up capital, but did not differ significantly with respect to the type of capital. Furthermore, the proportion of equity and debt capital (bank loans) in FOBs was the same as in those of their male counterparts (Verheul & Thurik, 2001). However, there were differences between the two genders in terms of access to debt capital (Coleman, 2004). Some of the prior research on gender differences, concluded there were financial vulnerability for small business owners regardless of gender (Gutter & Saleem, 2001). There were significant gender differences in the length of lender-borrower relationships. Male SME owners tended to have significantly longer relationships with lenders, thus male entrepreneurs benefited more from relationships with their lenders compared to female entrepreneurs (Madill, Riding, & Haines, 2006).

Female entrepreneurs were much more likely to rely on credit cards and company earnings as a prime source of business financing (Greene, 2001). There are also gender differences in terms of credit access (Wydick, 2002). In terms of *bootstrap finance methods* were similar among female- and male-owned small firms. However, differences were found relative to age, education, sales, and overdraft privileges. Some of studies have concluded there were no significant gender differences in venture innovation/risk situations as chosen by business owners. Furthermore, the male respondents did indicate a higher overall satisfaction with venture performance than did females (Sonfield, Lussier, Corman, & McKinney, 2001).

Some features of capital markets, business, and personal characteristics that limit female business owners from accessing sources of orthodox finance, can also impede their access to the most effective forms of bootstrapping (Jayawarna, Woodhams, & Jones, 2012). Lastly, there were noticeable gender differences in terms of startup capital. Males still lead females in this area (Neely & Van Auken, 2009). In terms of gender differences with starting a business venture, by implementing training programs for women had a greater influence on female entrepreneurial activity. In addition, training improved their management skill and reduced the gender gap in starting a business (Tsyganova & Shirokova, 2010; Kodama, & Odaki, 2011).

Gender Differences in Venture Risk

One critical observation that was most apparent in the literature was the gender differences in venture risk. There were no significant gender differences in venture innovation/risk situation or in strategies chosen by business owners. However, their study indicated that male respondents scored a higher overall satisfaction index with venture performance compared to females (Sonfield, Lussier, Corman, & McKinney, 2001). In terms of funding new business ventures, many times decision-makers showed bias against women entrepreneurs (Buttner & Rosen, 1989; Fay & Williams, 1993; Brush, et al., 2003).

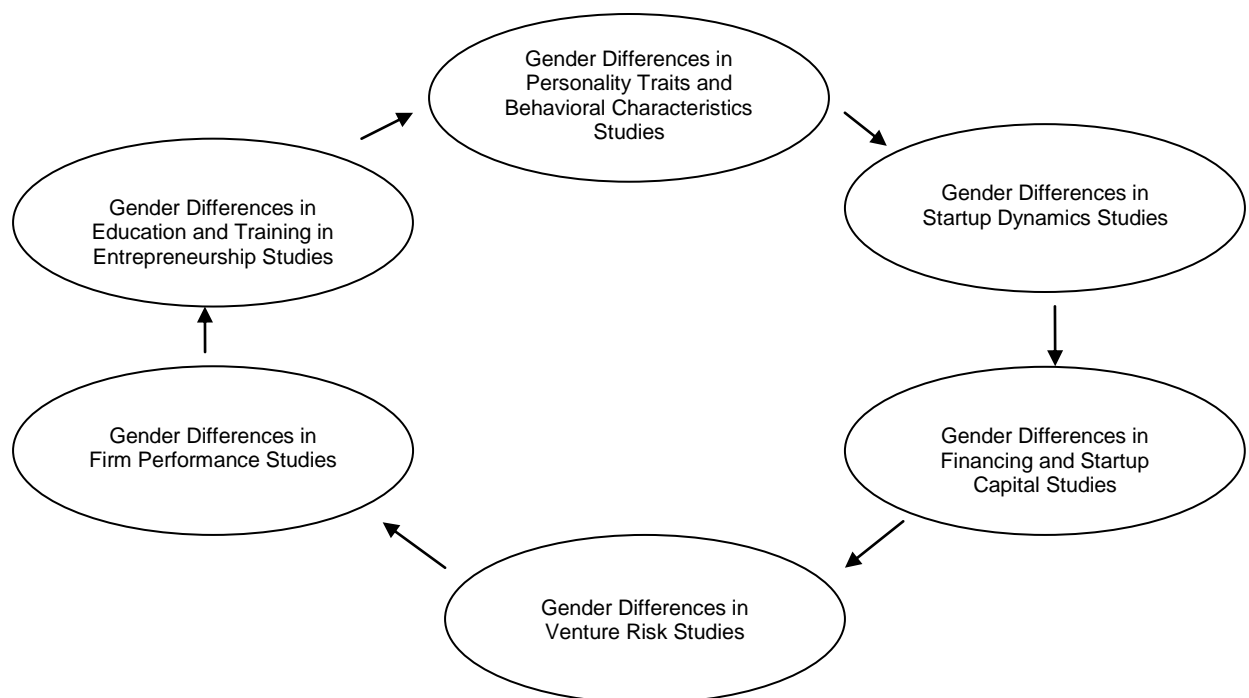
Some female entrepreneurs do not have the right educational background to start large businesses and they tend start businesses that are unattractive to venture capitalists (Menzie, Diochon, & Gasse, 2004). Female and male entrepreneurial activity rates were influenced by the same factors. However, for some factors such as unemployment, and life satisfaction had a differential impact on female and male entrepreneurship (Verheul, Van Stel & Thurik, 2006). The following hypothesis was developed from the preceding literature and prior research:

Hypothesis 3: FOBs are riskier and have a higher Entrepreneurial Orientation (ERO) Index Level Scores on the ERAS instrument as compared to MOBs.

Nevertheless, scholars have argued there were differences between women and men in entrepreneurship venture risk over the last few years. There were many factors that influence those differences between the two genders. There were gender differences observed in economic factors and innovation.

The objective of this study is to conduct a comparative research on FOBs and MOBs. The researcher wanted to take a different approach for this study. This study attempts to provide a new inquiry on female-owned businesses enterprises by examining market behavior and entrepreneurial risk patterns. Figure 1 illustrates the Literature Review Model. The researcher attempts to build on the prior research on female entrepreneurship; and thus add to the body of knowledge [see Figure 1].

Figure 1: Literature Review Conceptual Model of the Prior Research

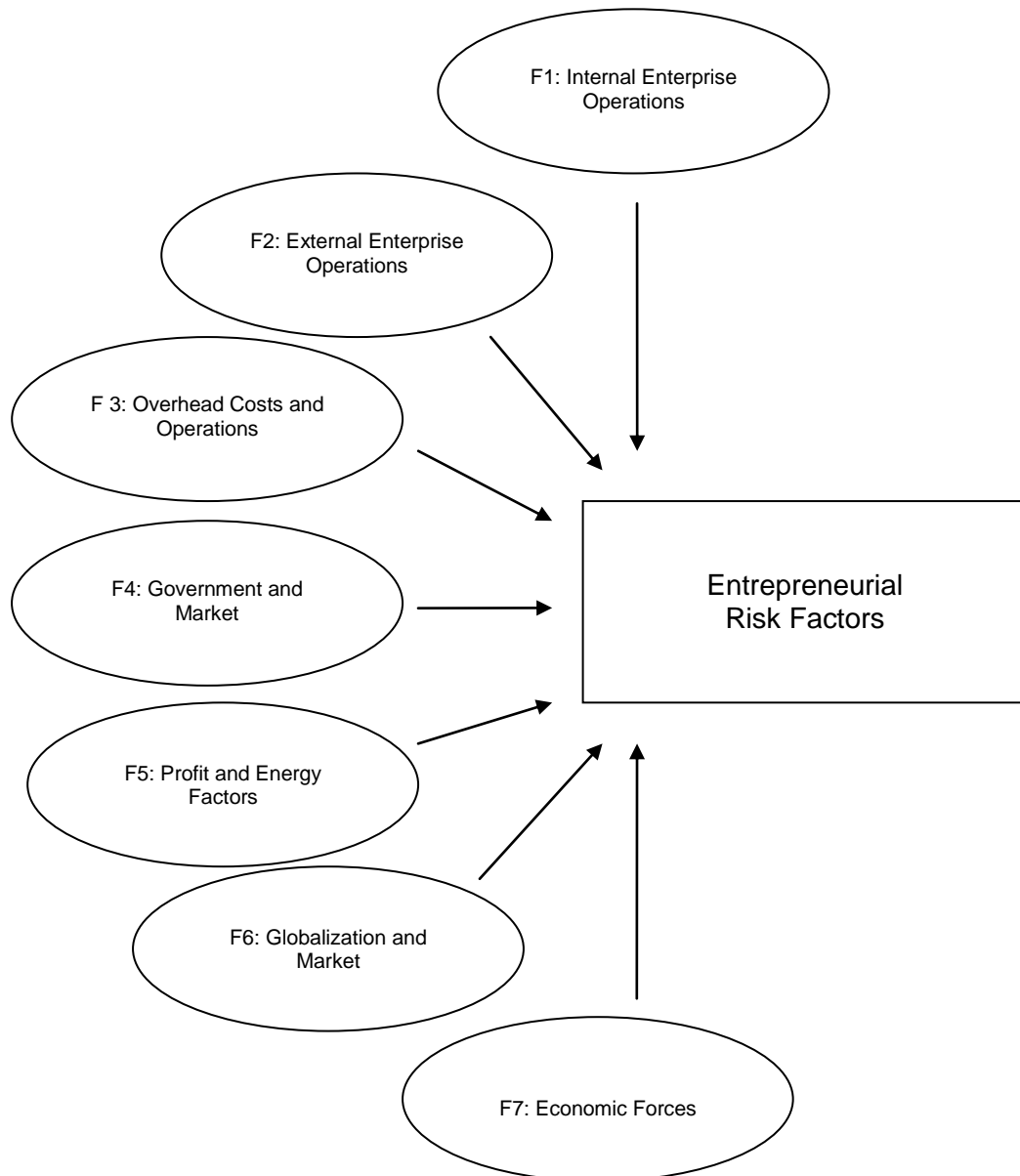


Theoretical Model and Framework

Theoretical Framework and ERO Model

The following theoretical model is presented in more detail with the specific variables for the study. The model that follows gives the both the factors and variables and thus appropriated separated by the seven factors [see Figure 2].

Figure 2: Theoretical Model Framework of the Study



The Entrepreneurial Risk Orientation (ERO) Index Levels are displayed. The model sums up the measured factors. The seven different factors were measured. See below.

Study Model: ERO Index Levels

$$ERO \text{ Index Levels} = F_1 + F_2 + F_3 + F_4 + F_5 + F_6 + F_7$$

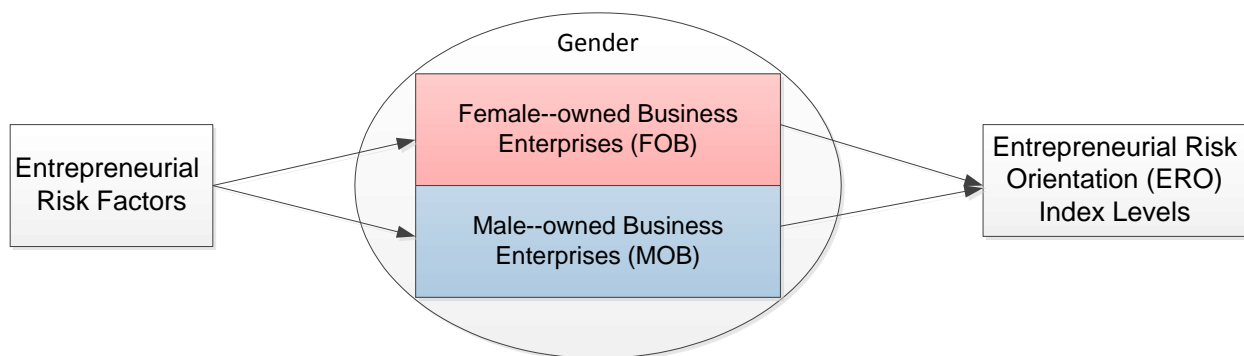
Where

- F_1 = Factor 1: Internal Enterprise Operations
- F_2 = Factor 2: External Enterprise Operations
- F_3 = Factor 3: Overhead Costs and Operations
- F_4 = Factor 4: Government and Market
- F_5 = Factor 5: Profit and Energy Factors
- F_6 = Factor 6: Globalization and Market
- F_7 = Factor 7: Economic Forces

Conceptual Model of the Study

Figure 3 illustrates the conceptual model. The model illustrates that typically risk factors influence small business enterprises (FOBs and MOBs). The conceptual model proposes the entrepreneurial risk factors influence the FOBs and MOBs. Gender is proposed as a moderating influence to the two groups. Lastly, the risk factors are measured, which determine the ERO index levels [see Figure 3].

Figure 3: Conceptual Model of the Study



Methodology

Research Design and Subjects

The study was based on the use of a comparative group research design. The study was conducted using a survey design as a data-gathering device. The characteristics and features were identified through a comprehensive literature review of the prior studies and research. The participants of the study were entrepreneurs. The participants were asked to rate their preferences of risk constructs on a five-point Likert scale structure. Three major statistical tools were used to examine the collected data: (a) descriptive statistical analysis of the sample; (b) an independent sample t-Test; and (c) multivariate regression analysis.

Instruments Used for the Study

The Entrepreneurial Risk Assessment Scale (ERAS). ERAS is a researcher-developed instrument used to measure entrepreneurial risk patterns. It consists of a 37-item scale that identifies and predicts market behavior and risk patterns in SMEs. The predecessor to ERAS was the Entrepreneurial Risk Scale (ERS). The ERAS instrument is the further development of pilot ERS instrument. ERAS measures and determines *Entrepreneurial Risk Orientation (ERO) Index Levels*. This development led to the addition of three new variables: (a) line of credit risk, (b) customer credit risk; and (c) economic risk. Analyses were made through aggregate scores obtained from the instrument. ERAS uses a 5-point Likert Scale ranging from “1” low risk variable to “5” high risk variable. Of the 37 items in the survey instrument, 25 items were utilized to assess entrepreneurial risk and ERO index levels.

Measures

ERO Index level assessed market behavioral and risk patterns of business SMEs. ERAS items consist of 22 statements, scored from 1 to 5, with higher scores indicating increasing symptom of entrepreneurial risk in business enterprises. The participants were instructed to rate various scenarios with their business ventures. Based on a review of existing factor models and item content, scores on items 16 to 37 (e.g., intellectual property risk, velocity of profit, market potential, market entry/exit barriers, competition intensity, business climate/economic location, government regulation constraints, business environment risk, environment/natural and etc.) were summed to calculate ERO index level scores.

Sample Characteristics

A sample of this study consisted of entrepreneurs ($N = 213$) both females ($n = 111$) and males ($n = 102$). The ages ranged in age from 18 to 55 years and over. The entire sample for the study ranged from low and middle socioeconomic class. Both gender groups were matched on both demographic variables (age, sex, and education) and firm demographic variables (capital investment amount, business entity type, number of employees and industry type).

Data Sources and Data Collection Procedures

A mixed sampling method was used for the study. First a random sample technique was used to collect the data. Second, a convenient sample technique was also used for the data collection. The sampling frame consisted of organizations, directories and membership groups. The sample for the study were collected from the following sources: Yellow Pages Business section; Small Business Administration (SBA) roster of borrowers; Small Business Development Center (SBDC); four local chambers of commerce member roster, personal contacts, business directories, and local businesses in the area.

To increase response rate, the SME business owners (participants) were carefully screened prior to solicitation for participation in the study. The researcher used the number of employees in the enterprise (500 or fewer) as the criteria for qualifying businesses for inclusion in the study. Data was collected between the months of March to August 2013.

Upon selection of potential participants, the data collection strategy progressed through four approaches: (a) *telephone cold calling*, administered the survey instrument through random phone calls to the participants from the directories, membership rosters, and personal contacts; (b) *web-based/email*, administration of the survey instrument via internet (Survey Monkey) following initial contact; (c) *on-site personal administered*; administered ERAS in-person to the participants; and (d) *drop-off surveys*, administration of ERAS by leaving it with the participants and making arrangements to retrieve it later.

Data Analysis and Statistical Methods

The data from the ERAS questionnaires was double-checked and entered into a Microsoft Excel spreadsheet. The SPSS 19.0 software package (SPSS, Chicago, IL, USA) was used for inputting the data and statistical analyses. Subsequently, the data was entered into a SPSS program. A crosstabulation methodology (t-Tests, multivariate regression) and a Cohen's Kappa were used to measure firm risk differences between the FOBs and MOBs.

Statistical tests were calculated for three scenarios to: (a) measure the two gender groups in terms of demographic differences and patterns; (b) measure the two gender groups in terms of firm demographic differences and patterns; and (c) measure the ERO Index Levels between the two gender groups in terms of market behavior and risk patterns.

Variables Examined for the Study

Independent Variables

To assess the entrepreneurial risk levels of the small business enterprises (SME) for the study, the ERO levels were examined from the independent variable, *gender*. Five independent variables were also used in the study (gender, business entity type, time length of business ownership, industry type, and capital investment amount). For the purposes of the study, *gender* was the primary independent variable and used as a predictor variable for this study.

Dependent Variables

For the study, the dependent variables are latent variables (factors): (a) Factor 1- Internal Enterprise Operations; (b) Factor 2 - External Enterprise Operations; (c) Factor 3 - Overhead Cost and Operations; (d) Factor 4 - Government and Market; (e) Factor 5 - Profit and Energy Factor; (f) Factor 6 - Globalization and Market; and (g) Factor 7 - Economic Forces. Therefore, for purposes of hypotheses testing, these dependent variables were defined as a composite index composed of eight to seven indicators of market behavior and entrepreneurial risk. The combined composite ERO index level scores provide a robust test of our hypotheses for the study.

Control Variables

Three control variables were used for this study: (a) *age*, (b) *marital status*, and (c) *education level*. To control the dynamics of the study, both genders of business owners were asked to consider all of the survey factors and items that can possibly influence their responses and decisions. The respondents were instructed to complete the survey based on the current state of their business enterprises.

First, the control variables were an influence but not the focus in the study. Second, there were no dummy variables used for the study. There were other controlled variables included in the analyses. For example, the *size* of the firm was controlled because firm size is based on the number of employees in the firm. Second, the group represented is controlled for the effect of group membership by gender. *Group* is a dummy variable, with a "1" indicating membership in a gender group 1: "female." and "2" indicating membership in group 2: "male."

Last, the researcher controlled for the *age* of the firm by including the time length of business ownership. The empirical analyses include descriptive statistics; mean and standard deviations comparisons and multivariate regression analysis are illustrated in the forthcoming tables and figures.

Results of the Study

Descriptive Characteristics

The descriptive statistics for demographics of the two groups are presented in Table 1. The table displays a crosstabulation of the individual demographics with the FOBs and MOBs for Study 1. The characteristics of the sample are presented in Table 1. In the sample, of the 245 participants, 213 answered the ERAS instrument. Only 213 surveys were usable. Notably, the highest mean age was 36.5 years \pm 10 (range = 36 - 46 years), and 111 (56.2%) were females.

Of these 111 FOBs, 71 (52.6%) were married compared to 64 MOBs (47.4%). In the education sector, 46.7% of FOBs (42) had some college education compared to 53.3% of MOBs (48). In terms of compensation from the business, 67.8% of FOBs (40) earned under \$10K compared to 32.2% of the MOBs (19). In both groups, the majority of the participants were married, between the ages of 36 – 46, had some college education and made a least \$10K from their business enterprises [Table 1].

The results of the cross-tabulation of the SMEs between the two groups are presented in Table 2. There were some notable results. First, the results indicate that 34.6% of the FOBs were married compared to 65.8% of MOBs. When comparisons were made in the ERAS results, 52.0% of FOBs (42) were in the services industries compared to 48.1% of MOBs (39). However, the two groups in the industry sector were not statistically significant ($p = .584$).

Although not statistically significant ($p = .476$), in the business entity type category 54.5% of FOBs (61) were sole proprietorships compared to 45.5% of MOBs (51). When comparisons were made in the category of employee number in the business, the ERAS results revealed that, 52.6% of FOBs (111) had 1-100 employees compared to 47.4% of MOBs (102). However, the two groups in this category were statistically significant ($p = .003$). When comparisons were made in the ERAS results concerning capital invested in the business enterprise, 55.6% of FOBs (104) invested up \$50K compared to 44.1% of MOBs (83). However, the two groups in the industry sector were not statistically significant ($p = .000$). There were no missing data for the ERAS (37) items [see Table 2].

Table 1. Crosstabulation of Individual Gender Demographics ($N = 213$)

Sociodemographics	Group 1		Group 2	
	(FOB) ($n = 111$)		(MOB) ($n = 102$)	
Demographic Variables	<i>n</i>	%	<i>n</i>	%
<i>Age</i>				
18 to 24	3	50.0	3	50.0
25 to 35*	16	55.2	13	44.8
36 to 46	41	56.2	32	43.8
47 to 57	35	50.7	34	49.3
58 and over	16	44.4	20	55.6
<i>Marital Status</i>				
Single (never been married)*	18	50.0	18	50.0
Married*	71	52.6	64	47.4
Divorced*	18	47.4	20	52.6
Widowed	2	100.0	-	-
Separated	2	100.0	-	-
<i>Education Level</i>				
Did not finish high school	1	50.0	1	50.0
High school diploma*	19	79.2	5	20.8
Some college	42	46.7	48	53.3
Bachelors	29	47.5	32	52.5
Graduate degree*	15	60.0	10	40.0
Post Graduate degree or higher	5	45.5	6	54.5
<i>Ethnicity</i>				
White	32	45.7	38	54.3
Black (African American)	24	60.0	16	40.0
Hispanic	47	51.1	45	48.9
Asian (Pacific Islander)	3	50.0	3	50.0
Native American	2	100.0	-	-
Other	3	100.0	-	-
<i>Compensation from Business</i>				
Under \$10,000*	40	67.8	19	32.2
\$10,001 to \$25,000	12	50.0	12	50.0
\$25,001 to \$40,000*	26	63.4	15	50.0
\$40,001 to \$60,000	10	29.4	24	70.6
\$60,001 to \$100,000	23	41.8	32	58.2
\$100,001 and over*	-	-	-	-

Table 2. Crosstabulation of Firm Demographics by Gender ($N = 213$)

Firm Demographics	Group 1		Group 2		<i>df</i>	<i>t-Test</i>	<i>p</i>
	(FOB) ($n = 111$)		(MOB) ($n = 102$)				
Venture Demographics	<i>n</i>	%	<i>n</i>	%			
Industry Type							
Agriculture	3	100.0	-	-	211	.315	.584
Communication	3	75.0	1	25.0	211		
Construction	10	45.5	12	54.5	211		
Finance	4	44.4	5	55.6	211		
Manufacturing	4	66.7	2	33.3	211		
Retail	12	54.5	10	45.5	211		
Services*	42	51.9	39	48.1	211		
Technology	5	45.5	6	54.5	211		
Transportation	1	16.7	5	83.3	211		
Wholesale	3	42.9	4	57.1	211		
Other Industry	24	57.1	18	42.9	211		
Business Entity Type							
Corporation (S or C)	27	50.0	27	50.0	211	-.628	.476
Limited Liability (LLC/LLP)	14	46.7	16	53.3	211		
Partnership	5	55.6	4	44.4	211		
Sole Proprietorship*	61	54.5	51	45.5	211		
Other	4	50.0	4	50.0	211		
Number of Employees*							
1 – 100*	111	52.6	100	47.4	211	1.474	.003
101 – 200	-	-	-	-	211		
201 – 300	-	-	-	-	211		
301 – 400	-	-	-	-	211		
401 – 499*	-	-	1	100.0	211		
500 or more*	-	-	1	100.0	211		
Capital Investment Amount*							
0 to \$50,000*	104	55.6	83	44.4	211	2.176	.000
\$50,001 to \$100,000*	2	18.2	9	81.8	211		
\$100,001 to \$500,000*	4	28.6	10	71.4	211		
\$500,001 to \$900,000	1	100.0	-	-	211		
Franchise Ownership							
Yes	11	61.1	7	38.9	211	.796	.110
No*	100	51.3	95	48.7	211		

(continued)

Table 2. Continued

Firm Demographics (N = 213)	Group 1		Group 2		<i>df</i>	<i>t-Test</i>	<i>p</i>
	(FOB) (n = 111)		(MOB) (n =102)				
Venture Demographics	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>			
<i>Length of Business Ownership</i>							
1 year or less*	43	68.3	20	31.7	211	2.495	.330
2 to 5 years*	29	32.8	34	54.0	211		
6 to 10 years	16	53.3	14	46.7	211		
11 to 15 years*	7	36.8	12	63.2	211		
16 to 19 years*	4	50.0	4	50.0	211		
20 years or more	12	40.0	18	60.0	211		
<i>Industry Experience</i>							
1 year or less*	22	76.0	7	24.1	211	2.239	.515
2 to 5 years*	18	48.6	19	51.4	211		
6 to 10 years	19	50.0	19	50.0	211		
11 to 15 years*	15	53.6	13	46.4	211		
16 to 19 years*	16	55.2	13	44.8	211		
20 years or more	21	40.4	31	59.6	211		

Comparative Analyses of Means and Standard Deviations: Independent Sample *t*-Tests

An independent sample *t*-Test was conducted for both studies to test the hypotheses in terms of market and economic behavioral differences between FOBs and MOB. Table 4 illustrates the results of market behavior and risk scores with FOBs. The market behavior patterns and risk patterns of FOBs did not reveal any significant differences compared to MOB for the study.

For example, Factor 1: *Internal Enterprise Operations* revealed similarities in means and standard deviations for FOBs ($M = 16.78$, $SD = 8.162$) and MOB ($M = 17.93$, $SD = 7.926$). Overall, for both studies, the *t*-tests means and standard deviations of both groups did not reveal any significant differences across the seven factors. Thus, the hypothesis that FOBs are different from MOB in terms of seven risk factors was not supported [see Table 3].

Table 3. Crosstabulation and Independent Sample t-Test of SMEs by Gender ($N = 213$)

Factors and Variables	(FOB) ($n = 111$)		(MOB)($n = 102$)		t -Test	p
	M	SD	M	SD		
FACTOR 1: Internal Enterprise Operations						
• V26- Line of Credit Risk	2.56	1.326	2.68	1.314	.651	.868
• V16-Owner Time Dependency Risk	2.68	1.544	2.91	1.449	1.148	.338
• V24-Customer Activity/Turnover Risk	3.18	1.230	3.45	1.207	1.619	.957
• V25-Customer Credit Risk*	2.31	1.278	2.59	1.254	1.623	.739
• V21-Expert (Team of Exp./Adv.) Risk	2.99	1.468	3.00	1.469	.045	.993
• V20-Internet/Technology Use Risk	3.06	1.316	3.30	1.233	1.379	.406
FACTOR 2: External Enterprise Operations						
• V34-Security/Crime Vulner. Risk	2.51	1.361	2.61	1.415	.496	.377
• V35-Terrorism Vulnerable Risk	2.78	1.404	2.94	1.448	.805	.995
• V32-Social Entrepreneurship Risk	1.63	1.144	1.76	1.187	.839	-.356
• V33-Environment/Climate Risk	2.61	1.409	2.78	1.467	.871	.466
FACTOR 3: Overhead Cost and Operations						
• V18-Overhead Costs Risk	2.68	1.088	2.96	1.218	1.804	.337
• V17-Labor/Intensity Risk	3.41	1.304	3.20	1.320	-1.214	.764
• V19-Equipment/Systems Invest. Risk	3.09	1.325	3.11	1.342	.097	.757
FACTOR 4: Government and Market						
• V31-Government Regulation Risk	3.26	1.494	3.31	1.407	.263	.639
• V28-Barriers to Market Entry/Exit Risk	2.71	1.331	2.93	1.388	1.179	.772
FACTOR 5: Profit and Energy Factor						
• V23-Velocity of Profit Risk	3.88	1.319	3.89	1.142	.055	.111
• V36-Energy/Dependency Risk	3.46	1.263	3.20	1.503	-1.388	.018
FACTOR 6: Globalization and Market						
• V37-Globalization Risk	3.65	1.305	3.65	1.332	-.009	.548
• V29-Competition Intensity Risk	4.02	1.152	4.00	1.117	-.116	.844
• V27-Market Potential Risk	3.99	1.424	4.35	1.216	1.987	.023
FACTOR 7: Economic Forces						
• V30-Economic Risk*	3.66	1.172	3.82	1.019	1.098	.093
• V22 Intellectual Property Risk	2.59	1.632	2.88	1.661	1.315	.801

** $p < .1$, ** $p < .05$ and *** $p < .01$.

Results of ERO Index Level Scores for FOBs and MOBs

Table 5 illustrates the results of ERO index scores between the two groups for Study 1. Based on the results, FOBs did display significantly lower ERO index level ($M = 66.71$, $SD = 29.289$) compared to MOBs ($M = 69.32$, $SD = 29.108$). The results indicate that FOBs have a lower ERO index level compared to MOBs. Overall, FOBs appears to be slightly less risky than MOBs (or FOBs are slightly higher in risk factor coefficients). However, it is noteworthy that the means in both conditions were quite low given that the scale ranged from 0 to 5. The results indicate when comparing the two groups, there were not any significant differences between in terms of ERO index levels [see Table 5].

Table 5. Results of ERO Index Level Scores for Gender Groups ($N = 213$)

Composite Factor Scores	Group 1		Group 2	
	(FOB) ($n = 111$)		(MOB) ($n = 102$)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Factor 1: Internal Enterprise Operations	16.78	8.162	17.93	7.926
Factor 2: External Enterprise Operations	9.53	5.318	10.09	5.517
Factor 3: Overhead Costs and Operations	9.18	3.717	9.27	3.88
Factor 4: Government and Market	5.97	2.825	6.24	2.795
Factor 5: Profit and Energy Factors	7.34	2.582	7.09	2.645
Factor 6: Globalization and Market	11.66	3.881	12.00	3.665
Factor 7: Economic Forces	6.25	2.804	6.70	2.68
*ERO Index Levels (Total)	66.71	29.289	69.32	29.108

Discussion

The study investigated the comparative differences between female-owned business enterprises (FOB) and male-owned business enterprises (MOB). There is a gap in the literature that specifically focuses on comparative research on gender and economic behavior of business enterprises. This study attempts to address that gap in the prior research. There were also gaps on the influence of gender as a predictor variable that can predict market behavior and risk patterns. This study took a different approach compared the prior research on female entrepreneurs and female-owned business enterprises. This study tested the relationship between seven factors (enterprises operations, internal operation, and etc.) and gender as a predictor variable. This research contributes to literature and field of study by demonstrating the importance of gender and its effect on firm risk and market behavior patterns.

Summary of Findings

This study empirically validated the relationship between gender and ERO Index Level Scores. It was observed the gender as a predictor variable had no impact on ERO Index Levels. Interestingly, FOBs (66.71) had a lower ERO index compared to MOBs (69.32). Gender proved to be an insignificant variable in term market behavior and entrepreneurial risk. Consistent with recent research on FOBs, the findings indicate that gender, is not strongly linked to entrepreneurial risk compared to MOBs.

Furthermore, there were no consistent findings in the results that proved that FOBs were more risky compared to MOBs. Gender did not have a strong relationship to entrepreneurial risk. The findings indicate gender does not have an effect on entrepreneurial risk. This finding is consistent (or inconsistent) with the prior studies. The results of the study also highlight the critical role of gender as a mediating variable on entrepreneurial risk patterns. This consistency (or inconsistency) might explain by the different factors as constructs. The impact of gender on the market behavior and risk patters of the business enterprises.

Hypotheses were tested comparing market behavior and entrepreneurial risk patterns of FOBs and MOBs. The first hypothesis suggests there are differences between female-owned business enterprises (FOB) and male-owned business enterprises (MOB) in terms of individual demographics. Based on the results of the study, there were minor

differences between FOBs and MOB. In the study, the results of the analyses revealed that: (a) *marital status*, female business owners were equally likely to be married compared to male businesses; FOBs were equally as likely to be divorced compared to MOB; (b) *education level*, FOBs were equally likely to be as college educated as MOB; (c) *compensation from the business*, FOBs were most likely to earn under \$10,000 and \$25,001 to \$40,000 compared to MOB; MOB more likely to earn \$100K compared to FOB. Based on the results of the study, the findings are inconsistent with some of the prior studies (Cromie, 1987; Miaoulis, Brown, & Saunders, 2005; Lewis, 2006; Zinger, Lebrasseur, Robichaud & Riverin, 2007; Širec & Močnik, 2011; Thebaud, 2011). Based on the results of the study, the hypotheses could not be supported.

The second hypothesis, suggests there were differences FOBs between MOB in terms of firm characteristics. The results of the revealed that were few differences : (a) in terms of *number of employees*, FOBs were least likely to have less employees compared to MOB; lastly, MOB were more likely to own a business less than one year; (b) in terms of *number of employees*, FOBs were least likely to have less employees compared to MOB; lastly, MOB were more likely to own a business less than one year; and (c) for *capital investment amount*, the results showed significant differences; FOBs were least likely to invest between \$50,001 to \$100,000 and \$100,001 to \$500,000 compared to MOB. For example, MOB were more likely to own an S or C corporation, limited-liability Corporation or partnership (LLC/LLP) compared to FOB. In terms of *industry types*, FOBs were least likely to be in the industries of communications, construction, manufacturing, technology and transportation. For *employee size*, MOB were twice as likely to have 1 to 100 employees in the firm compared to FOB. For *franchise ownership*, FOBs were equally likely to own a franchise compared to MOB.

The third hypothesis suggests there were differences FOBs between MOB in terms of firm characteristics. Multivariate regression analyses were conducted to determine the relationship between gender and entrepreneurial risk factors. The objective of the multivariate analyses is to identify which entrepreneurial risk factors are significant and then compare them across the two gender groups. Based on the results of the study, the findings were inconsistent with some of the prior studies (Sonfield, Lussier, Corman, & McKinney, 2001; Verheul, Van Stel & Thurik, 2006; Verheul, Carree & Thurik, 2009). Based on the results of the study, the hypothesis cannot be supported.

Table 6 displays of summary of the hypotheses tests. The results of the study revealed: (a) the independent sample *t*-test revealed there were *minimal* differences between FOBs and MOB in terms of the seven entrepreneurial risk factors between the two groups; (b) the multivariate regression analysis revealed that were no significant differences between the two groups in terms of the seven entrepreneurial risk factors; and (c) only three factor variables indicated any significant differences between the two groups; those variables were terrorism risk, diseconomies of scale, globalization and time intensity risk. The results revealed FOBs had a slightly lower ERO index level ($M = 66.71$, $SD = 29.289$) compared to MOB ($M = 69.32$, $SD = 29.108$). Therefore, the hypothesis could not be supported [see Table 6].

Table 6. Summary of Hypotheses Tests for the Study

Study Hypotheses	Measure Used	Supported?
H1: Gender differences in individual demographics.	t-test/crosstabs	No
H2: Gender differences in firm demographics.	t-test/crosstabs	No
H3: Gender differences in market behavior/risk factors.	regression analysis	No

*Note: Hypothesis not supported and applicable in study.

Conclusions and Critical Observations

The study focused on a comparative study of female-owned business enterprises (FOB) and male-owned business enterprises (MOB). There is a gap in the prior research that examines economic and entrepreneurial risk patterns based on gender. To address that gap, this study attempted to examine the impact of gender on entrepreneurial risk patterns that cause business failure. This study used a crosstabulation and multivariate regression analyses of the two gender groups. The study extends the previous research on FOBs and the influence on entrepreneurial risk factors on firms' vulnerability to business failure.

In conclusion, the results from the present study provide evidence there are minor differences between FOBs and MOBs in terms of market behavioral patterns and risk patterns. The findings complement findings from the previous research and filling the existing research gap and lack of evidence in that FOBs are different compared to MOBs. Concerning the main findings, the study results are largely inconsistent with the risk factors and found in previous studies and documented in the research literature. The study tested three hypotheses related to the individual demographics, firm characteristics, and risk factors linked to the literature. The results of the study reveal there were some important findings.

First, there were minimal differences between FOBs and MOBs in terms of individual demographics, such as marital status, education, and divorce rates. Second, there were no significant differences between FOBs and MOBs in terms of firm characteristics such as industry type, franchise ownership, capital investment, employee size and length of business ownership. Most of these firm differences were minimal between FOBs between MOBs. Third, most interestingly there were no significant differences between FOBs and MOBs with the seven entrepreneurial risk factors. Lastly, there were no significant differences between the two groups in terms of ERO index levels that measure entrepreneurial risk. Surprisingly, the MOBs had a slightly higher ERO index levels compared to FOBs.

Implications of the Research

One clear implication is that FOBs are not that much different compared to MOBs. FOBs are equally likely to have success and profitability compared to MOBs despite the influence of gender as an impediment. The results of our study refine and reframe the common perception that FOBs are less profitable and not as successful. Another observation is that FOBs are just as competitive and respond to the same number of ER risk factors compared to MOBs. Therefore, FOBs face similar market forces and gender does not play an integral role as much as the prior research infers.

Limitations of the Study

This study has some methodological limitations. First, the findings of the study were limited to the characteristics of the sample and the study design. The sample was derived from a survey research design with data collected from self-reported data. As a limitation, this could be subject to some bias. The risk in using self-reported data is always the possibility of respondent bias.

Second, ERAS surveys were limited because they could not get financial statement data (gross sales, net profits and etc.) from the respondents. The extent to which the findings reported could be generalized between the two genders, as a result perhaps further research may be warranted in order to address the generalizability of the findings. Thus, the results of the study could only provide general information on the financial activity of the SMEs in the study.

Lastly, it is worth noting that the statistical methodology used to examine the ERO index level scores into gender groups resulted in a relatively small percentage of FOBs (52.1%, $n = 111$). Although the findings indicate MOBs (48.1%, $n = 102$) had slightly higher ERO index level scores, this was a limitation because of the sample size. However, with further study, the ERO index levels and pattern may not change, and the magnitude of the differences between the low, medium and high gender groups may not vary with a larger sample size.

Contributions to the Field of Study

This study makes three important contributions to the body of knowledge. First, this study makes an empirical contribution by testing a theoretical linkage between two constructs (gender and entrepreneurial risk patterns) that was not previously been tested. This is one of the few studies that examine risk patterns and gender. This area of research has had minimal focus in the prior research, thus a gap that needed more exploration.

Second, this study makes the important contribution by the identifying the conceptual definition of the constructs and further development of the conceptual framework on entrepreneurial risk and female entrepreneurship. By examining risk patterns, the research moves to gain more insight and understanding the construct of entrepreneurial risk factors and their influence on gender and business enterprises.

Lastly, the final contribution of the study is that it provides the advancement of research on female-owned business enterprises. This study underscores the importance of entrepreneurial risk and gender. This research provides empirical support that female-owned business enterprises (FOB) can be just as successful economically despite the conventional wisdom that states otherwise in the literature and prior research.

Directions for Future Research Opportunities

There are a wealth of opportunities for future research on FOBs in terms of economic pattern analysis, market behavior, and entrepreneurial risk. First, future research should continue to crosstabulation research between FOBs and MOB in terms of internal economic patterns, risk patterns and profitability patterns. For example, one possible inquiry of exploration would be to explain how industry sectors and firm demographics such as customer turnover, competition intensity and other factors that affect economic behavior and entrepreneurial success for comparing FOBs to MOB. Furthermore, future research could explore the various ways in which market behavior, economic dynamics, and gender influence on business success and survival.

Second, future research could further analyze external economic patterns and gender in detail. For example, the future research could go beyond governmental data, such examining sales patterns with FOBs. Another example, future research could further examine gender and economic patterns such as market entry barriers, market saturation, and competition more extensively on FOBs. To exploit this future research opportunity, perhaps examining economic patterns in the capacity of a longitudinal study would be another future research opportunity.

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