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Entrepreneurial strategy: The relationship between firm size and levels of innovation and risk in small businesses

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ABSTRACT

The expression that "Innovation is the central issue in economic prosperity" (Michael Porter), encapsulates the importance of entrepreneurial strategy, which has been linked to firm growth, particularly through its dimensions of innovation and risk. Firm growth will increase its size, which in turn may affect the entrepreneurial strategy; a research area that has been under-studied. This research contributes to the literature by exploring the relationship between firm size and the entrepreneurial strategy. Findings support the hypothesis that in larger firms the owners pursue a strategy that tends to be higher in innovation but with reduced risk, while in smaller firms the owners pursue a strategy that is higher in risk but lower in innovation. Additionally, it was found that the firms' Entrepreneurial Orientation (EO) is moderated by the organizational size; which supports the notion of bi-directional relationship between EO and organization attributes

Introduction

During the last decade, there has been a growing interest in entrepreneurial strategic orientation, emphasizing the importance of innovation as a main driver to business performance and growth (Chang, Memili, Chrisman, & Welsh, 2011; McDowell, Peake, Coder, & Harris, 2018; Pett & Wolff, 2016; Rauch, Wiklund, Lumpkin, & Frese 2009; Thornhill, 2006; Williams, Manley, Aaron, & Daniel, 2018; Zulu-Chisanga, Boso, Adeola, & Oghazi, 2014). Small businesses differ from large firms in terms of their management, organizational structure, resource availability, flexibility, culture and other attributes. Therefore, it has been said that "a small firm is not a scaled down version of a large firm" (Westhead & Storey, 1996, p.18) but rather has unique characteristics that need to be recognized (Murphy, 1996).

Small businesses have small management teams – frequently the owner-manager is over-occupied with the everyday running of the business, resulting in a short-range management perspective (Tilley, 2000). In the absence of formal business strategy, the business is steered forward according to the owner's personal characteristics and beliefs – Individual Entrepreneurial Orientation (IEO) (Mazzarol, 2004; Peake, Barber, McMilan, Bolton, & Coder, 2019). However, it has been suggested that the firm's EO does not draw only on the personality traits of the owner/manager, but rather consists of three variables – environmental, organizational, and individual (Aloulou & Fayolle, 2005; Brettel, Chomik, & Flatten, 2015; Engelen, Flatten, Thalmann, & Brettel, 2014; Miller, 2011). Thus, certain firm characteristics, including firm size, can influence the level of EO, as well as the impact of EO on firm performance (Covin & Miller, 2014; Edmond & Wiklund, 2010).

While there has been extensive research on how EO affects firm performance and growth (Harris, Gibson, & McDowell, 2014; Leal-Rodríguez & Albort-Morant, 2016; Pett & Wolff, 2016), there has been much less inquiry on the opposite direction of the impact – how firm size affects EO (Altinay, Madanoglu, De Vita, Arasli, & Ekinci 2016; Engelen, Kaulfersch, & Schmidt, 2016; Simmons, 2010; Wales, 2016). Therefore, there is a need for future research on how organizational characteristics influence the firms'

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EO (Covin & Lumpkin, 2011; Miller, 2011; Wales, 2016; Wales, Gupta, & Mousa, 2011). Driven by the call for future research, this study explores how firm size affects EO, with regard to the two dimensions of innovation and risk taking, for small and medium-size businesses (SMEs). We used a sample of 184 small businesses in the USA to construct a conceptual framework and test empirically the relationship between the size of small businesses and level of innovation and risk chosen by their owners. Findings indicate that in larger firms the owners pursue a strategy that tends to be higher in innovation but with reduced risk, while in smaller firms the owners pursue a strategy that is higher in risk but lower in innovation. Therefore, owners, managers, entrepreneurship educators, and consultants to small businesses should realize that the size of the small business plays an important role in setting business strategy.

In addition, the study also lays the foundation for further exploration of the two-way interaction between firms' EO and business performance that has been called for by Wales (2016). More specifically, inquiry of a close cyclic relationship fabric, going from EO impact on firm growth and size and in turn continue to the impact of firm size on innovation and risk taking which partially constituent EO. Such inquiry advances the lesser researched longitudinal interdependency between EO and firm attributes, while to date most research referred to one point in time (Miller, 2011; Rauch et al., 2009; Wales, 2016).

The remainder of the article is structured in the following way: The next section presents a theoretical background with regard to the variables of EO, firm size, innovation and risk taking; their interrelationships as well as influencing moderators. We then explain the theoretical framework for the research and hypotheses. This is followed by the methods, research design, and analysis of results. Finally, we discuss the findings and their theoretical and practical implications, as well as the research limitations and suggestions for further research.

Theoretical Background

Entrepreneurial Strategy and Orientation

The concept of (EO) has served to explain how businesses can create value that leads to growth (Altinay et al., 2016). EO refers to a business's strategic orientation that encapsulates managerial philosophies and firm behaviors aimed at being innovative, including features of decision-making styles, methods, and practices (Anderson, Covin, & Slevin, 2009; Lumpkin & Dess, 1996). The importance of the concept, which has been studied extensively, draws on research findings indicating a high correlation with firm success (Anderson et al. 2009; Green, Covin, & Slevin, 2008; Wiklund & Shepherd, 2005). The majority of academic work has adopted a three-dimension construct for EO – innovativeness, proactiveness, and risk-taking (George & Marino, 2011; Miller, 1983; Wales, 2016; Wales et al. 2011), although contesting concepts have been suggested, such as the Lumpkin and Dess (1996) five-part construct (George & Marino, 2011; Wales, 2016; Wales et al. 2011). Innovativeness is the propensity to pursue novel ideas and non-linear thinking and creativity, as opposed to pursuance of existing practices. Proactiveness refers to management practice of opportunity-seeking and anticipating future trends from the outside environment. Risk taking involves a behavior pattern of making large investments in activities with high levels of uncertainty, which can result in costly failure (Lumpkin & Dess, 1996; Miller & Friesen, 1982). Although EO relates to the organizational level, it is closely linked to the individual-level measure of EO (IEO), in the case of small businesses, as the business is steered forward according to the owner's personal characteristics and beliefs (Peake et al., 2019).

If EO is a multidimensional construct, the relationship between EO and its dimensions should be defined. However, such definitions of EO and its dimensions have not been consistent, with possibilities ranging from multidimensional, in which the dimensions represent independent predictors, to unidimensional construct (Covin & Wales, 2012; George & Marino, 2011; Wales, 2016; Wales, Gupta, & Mousa, 2011). While some view EO as encompassing simultaneously all three dimensions (Miller, 1983), the possibility that EO is formed by the aggregation of the dimensions was adopted by scholars who separately studied individual dimensions of EO rather than the entire EO construct (Lechner & Gudmundsson, 2014; Lumpkin & Dess, 2001; Naldi, Nordqvist, Sjöberg, & Wiklund, 2007; Wales, Gupta, & Mousa, 2011). As such, innovation has been the most researched dimension of EO, as it has been recognized to be the most powerful antecedent to firm growth and improved financial performance; as well as being easier to operationalize and measure. Risk taking has gained less attention in research, being less tangible and more difficult to operationalize. However, the dimension of proactiveness has received even less focus in EO studies (Simmons, 2010).

Firm Size and Innovation

The importance of the relationship between firm size

and its level of innovativeness derives from the understanding that innovation is a significant antecedent to growth (Engelen, et al., 2016; Wolff & Pett, 2006). Although a large body of research has focused on this relationship, the findings have been inconclusive (Laforet, 2008). On one hand, numerous studies have found a positive relationship between firm size and the level of innovation (Camisón-Zornoza, Lapiedra-Alcamí, Segarra-Ciprés, & Boronat-Navarro, 2004). However, there are multiple studies reporting a negative relationship between firm size and innovation (Camisón-Zornoza et al., 2004). Yet, others reported a U-shaped relationship where innovation is high for small and large firms and relatively low for medium-size businesses (Bertschek & Entorf, 1996), or that no relationship exists between the two (Aiken, Bacharach, & French, 1980). The conclusion has been that the relationship between firm size and innovation depends on multiple variables (Damanpour, 1992; Wolfe, 1994), yielding inconsistent findings (Fores & Camison, 2016; Laforet, 2008; Simon & Shallone, 2013) as presented below.

Positive relationship between firm size and innovation. Many studies have reported findings supporting a positive relationship between firm size and innovation (Aiken & Hage, 1971; Damanpour, 1992; Ettlie & Rubenstein, 1987; Kimberly & Evanisko, 1981; Rogers, 2004; Sullivan & Kang, 1999). The rationale for a positive relationship can be traced back to Schumpeter (1942), who is sometimes regarded as the 'Prophet of Innovation'. Schumpeter identified innovation as a prime driver for economic growth and change. His view about innovation was that it is not limited to inventions of new products, but rather it refers to the implementation of new manufacturing processes, new techniques and the commercial applications of new technology. Accordingly, he asserted that firms of larger size have higher levels of innovation as they can capitalize on their greater market power to finance R&D and exploit returns from innovations.

Since then, several explanations have been suggested for the positive relationship between firm size and innovation. First, financial resources – large firms have more financial resources that can be allocated to advance innovation, as well as better access to external finance (Ahluwalia, Mahto, & Walsh, 2017; Cohen & Klepper, 1996; Rogers, 2004). Second, human resources – large firms are able to employ higher numbers of professionals, having a wider range of knowledge and dedication to R&D efforts (Capon, Farley, Lehmann, & Hulbert, 1992; Pla-Barber & Alegre, 2007). Third, infrastructure – large firms have more resources and capabilities such as laboratories, equipment and manufacturing facilities in support of innovation activities (Damanpour & Evan, 1984; Nord & Tucker, 1987; Rogers, 2004). Fourth, risk taking – large firms' robustness enables them to bear the losses from unsuccessful innovations, and thus, able to take on greater risks (Damanpour, 1992; Kraft, 1989). Finally, market power – higher volumes of sales are translated to lower development costs per unit of product, as well as higher ability to generate returns (Acs & Audretsch, 1991; Chaney & Devinney, 1992; Galbraith, 1952).

Negative relationship between firm size and innovation. Numerous studies found a negative relationship between firm size and innovation – small businesses have shown to be relatively more innovative than large firms (Aldrich & Auster, 1986; Arvanitis, 1997; Hage, 1980; Rogers, 2004; Shefer & Frenkel, 2005; Wade, 1996). These findings contradict the Schumpeter (1942) hypothesis, and several arguments have been suggested for such a negative relationship. First, bureaucracy and rigidness – higher level of bureaucracy exist in large firms, including complex organizational structure and extensive regulations and procedures that weaken creativity and slows down innovative activity. Small firms with fewer employees, simple structures and less reliance on formal procedures, makes them much more innovative (Kamien & Schwartz, 1975; Nooteboom, 1994). Second, organizational culture – large organizations are characterized by culture that resist creativity and change (Cohen & Klepper, 1996; Hitt, Hoskisson, & Ireland, 1990). Third, flexibility in operation – large firms suffer from lower efficiency in operation, including their R&D efforts due to organizational complexity and overhead (Nooteboom, 1994; Rogers, 2004; Scherer & Ross, 1990). Fourth, adaptability to external change – small firms are more flexible to adapt to external changes which enable them to better implement new technologies and directions as well as recognize and exploit external opportunities (Damanpour, 1992). Finally, communication – small firms have the advantage of better internal communication across the organization, which enables cross disciplinary fertilization that promotes higher creativity and innovation (Sosa, Eppinger, Pich, McKendrick, & Stout, 2002).

Mixed results and moderators of firm size and innovation. Several studies reported mixed results, regarding the findings on the relationship between firm size and innovation, including: U-shaped relationship – small and large firms have been found to be more innovative than medium-sized firms (Bound, Cummins, Griliches, Hall, & Jaffe,

1982; Scherer, 1965). Such relationship could result from the different advantages applying for large and small firms, but not to medium-size firms (Bertschek & Entorf, 1996). Others reported that no relationship exists between firm size and innovation (Aiken, Bacharach, & French, 1980; Wolfe, 1994). Yet, some studies reported mixed results depending on other moderators such as industry sector and type of innovation, as described below (Acs & Audretsch, 1987; Pla-Barber & Alegre, 2007).

Industry sector as a moderator. With the understanding that the firm size-innovation relationship is complex, several studies tested the effect of industry type on the relationship. Some studies have found that a positive size-innovation relationship applies to low-tech production-intensive industries, while negative relationship between firm size and innovation was found for high-tech knowledge-intensive industries (Acs & Audretsch, 1991; Pla-Barber & Alegre, 2007; Shefer & Frenkel, 2005). The theoretical rationale given, for the difference in the direction of the relationship, was based on Barney's (1991) resource-based view of the firm. Accordingly, the direction of the relationship depends on the type of critical resources that provide the firms with competitive advantage (Pla-Barber & Alegre, 2007). For low-tech production-intensive industries, for which size related resources are critical, such as production or marketing competences, the size-innovation relationship would tend to be positive (Pla-Barber & Alegre, 2007). However, for high-tech industries, for which the critical resources are drawing on knowledge and competence to develop cutting-edge technology, the size-innovation relationship would tend to be negative (Shefer & Frenkel, 2005).

Measurement of size and innovation. Furthermore, the inconsistency in research findings about the direction of the relationship between firm size and level of innovation has been attributed to variation in the operationalization and measurement of those variables (Camisón-Zornoza et al., 2004). Firm size has been operationalized using different indicators including total number of employees, measures of firms' output such as sales volume, financial measures including net assets, and number of personnel engaged in development as a percentage of total employees (Camisón-Zornoza et al., 2004; Szymanski, Bharadwaj, & Varadarajan, 1993). However, the different indicators have served to derive a qualitative measure of firm size – large, medium and small; thereby minimizing the problem that could arise from the use of different measurement indicators (Camisón-Zornoza et al., 2004; Damanpour, 1992). Likewise, innovation has been measured in different ways (Damanpour, 1992; Verhees & Meulenberg, 2004; Wolff & Pett, 2006). Level of innovation can be measured by input, output or both (Coad & Rao, 2008). Coad and Rao (2008) stated that input refers to the level of R&D spending, which serves as an indicator for the input level for the innovation process. Whereas, the number of patents was used as a measure of innovation output, although not every innovation is patented.

Firm Size and Risk Taking

Risk taking may include several types (Lumpkin & Dess, 1996). Baird and Thomas (1985) defined three types of risk taking – entering unknown areas, investing of resources and high leverage from borrowing. The first type is generally associated with the nature of entrepreneurship of venturing into the unknown (Kreiser, Marino, & Weaver, 2002; McClelland, 1960; Miller & Friesen, 1978). The other two types of risk taking are associated with the entrepreneur's willingness to commit high levels of resources to innovation activity that is known to have high failure rates, resulting in substantial financial losses (Miller & Friesen, 1982). Thus, the common view of risk taking follows the Miller and Friesen (1978) definition as the propensity to make large investments in activities with high levels of uncertainty, which can result in failure.

The Behavioral Theory of the Firm (Cyert & March, 1963) served as the basis to suggest a possible relationship between business size and level of risk chosen by owners. With relation to the process of decision making, the theory refers to two stage phases. First, management sets goals for the firm performance. Second, a decision making process is conducted by management. If the aspiration level for goals is high, there will be higher risk taking in the decisions. Alternatively, when the performance exceeds the goals, managers will tend to lower the risks taken for future operations (Cyert & March, 1963; March & Shapira, 1992).

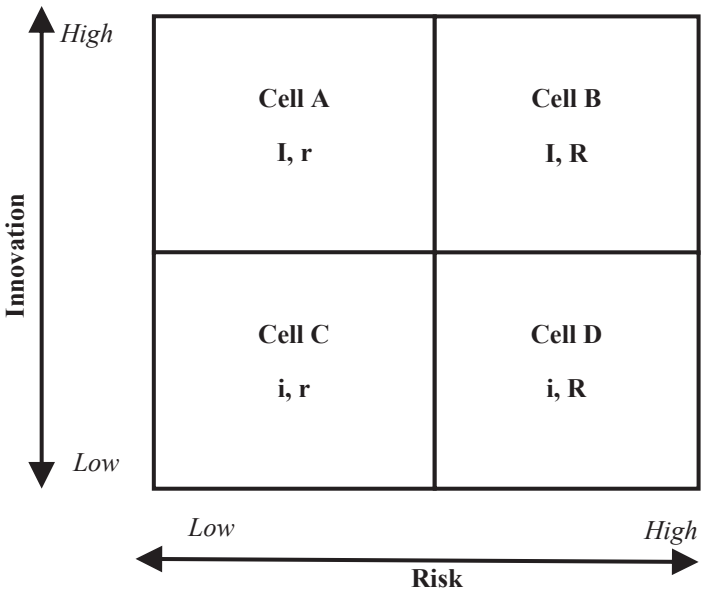
Applying the behavioral theory to the size-risk taking relationship, it is assumed that small firms aspire to grow, aiming to create strong market presence and increased survivability; by making relative high-risks decisions. Once a firm grows in size beyond the initial aspiration level, it will not pursue additional risky growth opportunities. Therefore, it is assumed that the relationship between the size of the business and the level of risk taken will be negative; suggesting that larger businesses tend to choose strategies with

lower risk in comparison to small businesses (Mahoney, 2004).

Hypotheses and the Entrepreneurial Strategy Matrix

As this research investigates how firm size affects the two dimensions of innovation and risk, we used the previously developed Entrepreneurial Strategy Matrix (ESM) (Sonfield & Lussier, 1997; Sonfield, Lussier, Corman, McKinney, 2001). The ESM model describes four possibilities of business strategy adopted by the entrepreneur, based on the two parameters of innovation and level of risk. Each of these dimensions can have dichotomous value of high (I and R) and low (i and r) levels of innovation and risk, thus creating a matrix with four quadrants as depicted in Figure 1. The essence of each of the four strategies is described in Table 1.

Figure 1. The Entrepreneurial Strategy Matrix



The Entrepreneurial Strategy Matrix (ESM) was selected for data collection for three reasons. First, because the survey instrument was designed to provide measures of the three variables being investigated in this study. The questionnaire measures the small business owner's level of innovation and risk, as seen in Figure 1, and it also provides a measure of the owner's strategy, as seen in Table 1. Secondly, the ESM conceptual model was published in a quality journal (Sonfield & Lussier, 1997), and then the survey instrument was developed by Sonfield and Lussier (2000), empirically tested for validity by Puetz and Hunt (1998) and used for empirical research published in the JSBM - Journal of *Small Business Managment* (Sonfield et al., 2001), as well as (Lussier, Sonfield, Corman, & McKinney 2001) and Sonfield and Lussier (2000), providing support for the ESM model and its survey instrument's validity. Thirdly, as most academic models are complex and difficult to use by entrepreneurs, the ESM model was developed to provide the entrepreneur with a simple model that is easy to use by practitioners, and it was successfully tested for ease of use by small business owners (Lussier, Sonfield, Frazer, Greene, & Corman, 1998). In addition, a recent Google search typing in "Entrepreneurial Strategy Matrix" resulted in more than 1,880 hits (July 1, 2019). Thus, the ESM has practical use by small business owners, e.g., impact factor.

Accordingly, the research hypotheses are:

Hypothesis 1. There is a difference in the strategy used by small business owners based on the size of the firm.

Hypothesis 2. There is a positive relationship between firm size and strategy of innovation – larger firms pursue a strategy that tends to be higher in innovation.

Hypothesis 3. There is a negative relationship between firm size and strategy of risk – smaller firms pursue a strategy that tends to be higher in risk.

Hypothesis 4. The EO at the organization level is not driven solely by the personality attributes of the owner-manager, but rather is also moderated by organizational factors, e.g., firm size.

Method

Design and Sample

The research design used the ESM survey data set of Sonfield and Lussier (2014) to identify which strategy quadrant within the ESM was selected and utilized by the respondents (Table 1). The sample was constructed by random selection of 900 small businesses from the United States representing all D&B nine industries. The mailing resulted in 78 completed questionnaires, with 98 nondelivered. Telephone interviews resulted in an additional 116 respondents; 10 not usable. Thus, after two months, the sample size for statistical testing was 184, with a response rate of 23%. To ensure nonresponse bias was not problematic, the questionnaire results of the mail and telephone interviews were statistically tested for difference, and no significant differences were found between the early and late

responses.

Measures and Statistical Analysis

The size of the business (number of employees) was the independent variable. The ESM strategy chosen by the owner of the small firm was the dependent variable. The control variable covariates are the commonly used years in business (actual number of years), industry (retail/services vs manufacturing), gender (male or female), and education (grade school to doctorate degree) as shown in Table 1. Although we don't directly measure EO, we do measure level of innovation, which is linked to the construct of EO. The variable terms dependent, independent, and covariate are SPSS terms used for statistical testing of the hypotheses that there is a difference in the strategies used by small business owners based on their size. These variables are not tested for causality or the direction of the relationship.

Regression analysis (commonly used in prediction studies with a dependent variable with a ratio level of measure) is commonly used in research because it is an advanced multivariate statistical analysis that can control for extraneous variables that you are not studying, and you don't want to affect the results of the study. However, it is not the most appropriate statistical analysis for this study because the hypothesis is designed to test difference in strategy selection (a nominal level variable with 4 descriptors). Alternatively, the analysis of covariance (ANCOVA) is also an advanced multivariate statistical analysis that is designed to test for differences between the strategies used by owner/mangers using covariates as control variables; like regression it also develops a model and the analysis includes *r*-square (Lussier, 2011). Thus, ANCOVA was used to test the hypotheses to include commonly used control variable covariates for years in business, industry, gender, and education. By controlling for industry, we help overcome a limitation of EO research. Engelen, Kaulfersch, and Schmidt (2016) stated that "a limitation to almost all empirical research on EO is that it does not distinguish between service and manufacturing firms, which could be an important differentiation since EO's influence on performance may differ with firm type" (p. 842).

Results

Here is a summary of the descriptive statistics (N = 184). The sample of small business owners includes 40% women and 60% men; 70% are retail/service firms and 30% are manufacturers. The average business and owner in the sample has approximately 15 years in business (m = 14.72 / sd 14.29), 20 employees (m = 19.71 / sd 51.51), and some college education. The sample includes entrepreneurs from 34 U.S. states. Overall, the small business owners are satisfied with their business. Table 1 includes the descriptive statistics for the owners' level of innovation and risk strategy selected.

Also, see Table 1 for the ANCOVA hypothesis testing results. The model is significant (p = .002), and thus Hypothesis 1 is supported. When comparing the mean size of business of the four strategy groups (m = 30.63, 19.10, 18.91, 11.71), they are significantly different. The businesses using the high innovation and low risk (Cell A I-r) strategies employ almost three times the number of employees as those using low innovation high risk (Cell D i-R) strategies (m = 30.6 vs. 11.7).

The results also support Hypothesis 2. Larger businesses are using higher levels of innovation (Cell A I-r) strategies, in comparison to smaller businesses, which are using lower levels of innovation (Cell C i-r) strategies. Additionally, the results support Hypothesis 3. Smaller businesses are using higher levels of risk (Cell B I-R) strategies, in comparison to larger businesses, which are using lower levels of risk (Cell A I-r) strategies. The results show that firm size acts as a moderator to the level of innovation and thus support Hypothesis 4 that EO at the organization level is not driven solely by the personality attributes of the owner-manager.

Discussion and Implications

In this section, we begin with the implications by discussing the results of our study compared to prior research, stating our theoretical contributions to the literature. Next, we discuss the limitations and recommendations for further research. We end with practical implications for small business owner/mangers, entrepreneurship educators, and other stakeholders.

The finding of this research provides unique and interesting insights into how EO, which drives the entrepreneurial business strategy, is influenced by the firm size. First, findings indicate that the sector of small businesses is not homogenous in itself, and that differences in firm size within the sector exist – larger firms within the sample had different orientation than smaller firms. The understanding that firms within the SME sector are far from being homogenous supports Beaver (2003), and Blackburn, Hart, and Wainwright (2013) findings.

Table 1
*ANCOVA Test Result*s

Strategy One strategy group selected as the major strategy	**Frequency and / Percentage Strategy Selected**	**Mean and / Standard Deviation Number of Employees**
Cell A I-r Move Quickly Protect Innovation Lock in Investment and operating costs, via control systems, contracts, etc.	24 / 13%	30.6 / 61.6
Cell B I-R Lower Investment and Operating Costs Maintain Innovation Outsource high investment operations Joint Venture options	64 / 35%	18.9 / 61.7
Cell C i-r Defend Present Position Accept Limited Payback Accept Limited Growth Potential	68 / 37%	19.1 / 46.6
Cell D i-R Increase Innovation-competitive strategy Low Investment and Operating Costs Use business plan and objective analysis Franchise Option Abandon Venture?	28 / 15%	11.7 / 17.6

F	**ANCOVA Model P-value**
3.42	.002

Source	**F**	**Significance**
Model	3.42	.002
Intercept	.562	.455
Control Variables		
Years in business	13.94	.000
Industry	.111	.740
Gender	1.62	.205
Education	.089	.766

Second, findings support the hypothesis that in larger firms the owners pursue a strategy that tends to be higher in innovation but with reduced risk, while in smaller firms the owners pursue a strategy that is higher in risk but lower in innovation. This supports Hypotheses 2 and 3, and is consistent with findings of previous research (Camisón-Zornoza et al., 2004; Laforet, 2008; Rogers, 2004) that reported a positive relationship between firm size and innovation tendency. This provides further support for the Schumpeter (1942) hypothesis asserting that firms of larger size are able to invest more resources into innovation. An important contribution of this research is that it identified an impact of firm size within the sector of small businesses, while most previous research considered the full spectrum of firm sizes – small, medium and large companies (Camisón-Zornoza et al., 2004).

Third, the findings of this research provide support for the hypothesis that the owners of larger firms within the SME sector tend to pursue less risky business strategies than the strategies chosen by owners of smaller businesses. This is consistent with a few previous reports (Mahoney, 2004; Simmons, 2010) that indicated that while small firms are growing, the owner-managers tend to make decisions that are less risky. Interestingly, more responsible behavior can relate to internal stakeholders such as employees, as well as external stakeholders such as investors; which means that as the firm grows in size, it is becoming more socially responsible toward stakeholders, as commonly accepted in the research field of corporate social reasonability (Lepoutre & Heene, 2006; McWilliams & Siegel, 2001; Stanwick & Stanwick, 1998).

Implications two and three taken together infer the probability that in larger businesses the owners tend to pursue the 'high-innovation, low-risk' cell of the Entrepreneurial Strategy Matrix. This might coincide with previous findings that larger firms can afford to use more resources to pursue the innovativeness orientation of the owner/manager (Rogers, 2004), however at the same time taking less risk as they assume more responsible behavior (Mahoney, 2004).

Finally, and having the most overarching contribution to the literature, this research has supported Hypothesis 4 that EO is not driven solely by the personality attributes of the owner-manager, but rather is also moderated by organizational factors – firm size. Thus, providing further support to the understanding that EO might be influenced and change over time, due to environmental and organizational variables (Aloulou & Fayolle, 2005; Miller, 2011). Moreover, this finding provides further support to the understanding that there is a bi-directional interaction between EO and firm size (Miller, 2011; Wales, 2016). That is, EO may promote growth and firm size, while consequently the increase in firm size may in turn affect EO.

In conclusion, this research makes two important theoretical contributions with regard to the relationship between firm size as an organizational attribute and the entrepreneurial strategic orientation, with particular focus on small businesses. First, findings indicate the possibility that indeed firm size has an impact on the EO. This is consistent with the understanding that moderators to EO can include many variables of the environment and the organization. Second, this research strengthens the understanding that EO and firm size is a two-way relationship. Such interrelations can lead to cycles of variations in EO levels that can vary between high and low levels over time.

Like all studies, there are limitations within this research and the need for further research. As stated by Engelen, Kaulfersch, and Schmidt (2016), the specific culture in each society could affect the owner entrepreneurial orientation toward innovation and risk; therefore, the results may vary in countries with different cultures. Although self-reporting data is commonly used for data collection in entrepreneurship research, it does have limitations. Our data was self-reported by the owner/managers of the businesses. Although the selection of a listed strategy is fairly objective, an owner/manager may not actually use the strategy. This could result from the difference between the self-concept of the owner/managers with regard to their orientation, and their actual behavior, due to lack of linkage between attitudes and behavior (Wicker, 1969). Moreover, the subjective reporting of all responders is not aligned within the sample due to lack of a single objective metric. The research also used a cross sectional data collection relating to one point in time. Such measurement cannot capture the interplay between EO and firm size, which is expected to create changes over time with regard to the dimension of innovation and risk within the Entrepreneurship Strategy Matrix; such dynamic changes due to the bi-directional relationship could best be captured through longitudinal research design.

Considering the findings and the limitations of our research, we suggest the need for future research. First, duplication of this study in other cultures is needed to support the generalizability for external validity of the finding outside of the USA, across different countries and cultural contexts. Secondly, the entrepreneurship strategic orientation data collected for this research was based on self-reporting by the owners of businesses, which is subjective by nature. Future research should verify those finding through a more objective data collection method. One way to achieve this is

by collecting data with regard to behavior and actions rather than self-reported attitude. Second, while our finding supports the conclusion that firm size does impact EO, future research should inquire whether other organizational attributes have similar moderating impact on EO. This could enlarge the body of knowledge on how EO draws on organizational variables. Third, while we have established that the organizational variable does influence EO, future research can investigate how environmental attributes may affect EO. This could provide support to previous indications that EO might be in the aggregate influenced by three types of variables – personal, organizational and environmental. Finally, with the acceptance of a bi-directional relationship between EO and firm size, and that such interplay creates dynamic changes over time, we recommend that future research use longitudinal design, rather than the cross-sectional approach, in order to better understand variation of EO over time.

Far reaching practical implications can be drawn from the research finding, which indicate that smaller businesses tend to start with relatively higher risk taking than larger small-businesses, and the reverse trend regarding innovation. Our findings support the hypothesis that owners of new businesses tend to take higher risks, which is one of the many reasons for the low survivability of firms within the SME sector. This behavior can result from an erroneous self-perception and lack of coherence between attitudes and behavior (Wicker, 1969). Such understanding has practical implications applying to various stakeholders of the SME sector. Entrepreneurship educators and consultants can take a center role in bringing this problem to entrepreneurs by making them aware of the tendency to subconsciously take higher risk than appropriate. Recall that the Entrepreneurial Strategy Matrix is a practical model found easy to use by entrepreneurs. Educators and consultants can make entrepreneurs aware of the ESM model and help them to use it to match their strategy to the level of risk and innovation of the new or ongoing growing business venture. Investors and lenders should utilize proper measures to closely follow-up on the entrepreneurial activity, and actively engage in controlling the level of risk taking. Research has shown the positive relationship between having social capital with supporting networking ties and performance (Engelen, Kaulfersch, & Schmidt, 2016). Thus, another important practical implication refers to entrepreneurs and potential external networking ties, with regard to the level of innovation. Findings indicate the level of innovation is low in the initial phase of SMEs, which may result from the lack of resources, which constrains innovativeness attitude. One way to overcome such resource constraint is by building networking ties between the new small business and external parties. Thus, entrepreneurs and owners of small businesses can increase the level of innovation by harnessing more resources through teaming and forming partnerships with other relevant stakeholders. In summary, all stakeholders of the SME sector should be aware of and take proper measures to educate would be entrepreneurs regarding the tendency of pursuing a high risk and low innovation of new small ventures.

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