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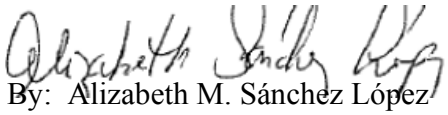
The venture creation process in Puerto Rico:

From entrepreneurial potential to firm birth



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To my family for your continuing support and inspiring me to be better and to the ones (my earth angels) who help me throughout this learning process unconditionally…

Thanks!

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ABSTRACT

The purpose of this study is to analyze the antecedents of entrepreneurial intentions; and the factors that influence the transition from intentions to entrepreneurial behavior (firm birth). The contributions are numerous: (1) evaluating the key determinants of intentions implies understanding behavior, which can lead to the development of policy that influences entrepreneurial behavior through attitudes; (2) analyzing the key assumptions of theories of planned behavior, specifically determinants of intentions will put to the test the validity of this theory within the entrepreneurial field; (3) assessing the transitions during the venture process (from intentions to firm behavior) increases our understanding of the entrepreneurial process and the factors that lead to the emergence of an organization, particularly when the relationship between intentions and behavior is imperfect (30%). Two samples were used to provide insights into the venture creation process in Puerto Rico: (1) Global Entrepreneurship Monitor Data and (2) nascent entrepreneurs. The Global Entrepreneurship Monitor, international research program that monitors entrepreneurial activity of regions, provided data to test the determinants of entrepreneurial intentions, the first stage in the entrepreneurial process. To examine the factors that influence the intention-behavior relationship we used a sample of individuals who manifested entrepreneurial intentions (nascent entrepreneurs from SBDCs). Telephone interviews (survey) were conducted with reported nascent entrepreneurs to evaluate the transitions from realized intentions to behavior. Results were summarized using descriptive statistics and inferential statistics such as Analysis of Variance (ANOVA). Multiple regression analysis was conducted to test the hypotheses. Finally, Structural Equation Models were developed in attempts to construct an overall model of venture creation. In general the findings suggest that although intentional models provide a framework to predict future behavior, there is still much more involved in the prediction of behavioral outcomes such as entrepreneurial behavior.

Keywords: Entrepreneurship, Intentional Models of Behavior and Entrepreneurial Environments

1. INTRODUCTION

1.1 Problem statement

Interest in entrepreneurship has grown over the past decades mainly for its capacity to create employment, wealth, and consequently regional development. The recognized value of entrepreneurship prompted new streams of research to shed light into this phenomenon. Researchers from several disciplines (psychology, anthropology, management, among others) have tried to capture the phenomenon through their respective field's perspective. Moreover, several theoretical approaches have been put forth to explain what make individuals create a business; how entrepreneurial endeavors are pursued; and how environments influence entrepreneurship. The entrepreneur's demographic, psychological and behavioral characteristics, as well as his or her managerial skills and technical know-how are often cited as influential factors in entrepreneurship. Other paradigms observe the environments in which new organizational units are formed in order to explore how variations in context may affect firm birth rates. This in turn emphasizes the importance of exploring entrepreneurial activity in regional settings, in this case Puerto Rico.

Puerto Rico's economic model has been sustained by federal and local tax incentives that have stimulated foreign direct investment, mainly from USA companies; exclusive trading agreements between Puerto Rico and USA; and welfare programs that intended to improve socioeconomic conditions of the region. Changes in these previous arrangements have posed several threats to Puerto Rico's economy. More recently, large amounts of public debt on the island prompted the development of the "Special Act to Declare a State of Fiscal Emergency and

to establish a Comprehensive Fiscal Stabilization Plan to Salvage the Credit of Puerto Rico" (Act No. 7). This Act put hundreds of public officials' on unemployment lists. It is important to note that the government has been the second largest employer in the island, employing more than 23 percent of the labor force (Government Development Bank of Puerto Rico, 2011). The elimination of Section 936 and exclusive trading agreements between Puerto Rico and USA, in addition to the more recent Act No. 7 has created the need to develop a sustainable economic model for the region, supported on native entrepreneurship.

Puerto Rico has had little success in stimulating entrepreneurship to help combat the over 40 percent population under poverty levels and 16.1 percent unemployment rate (Government Development Bank of Puerto Rico, 2011). Although the previous economic model generated the much needed employment at a moment in time, attempts to stimulate local entrepreneurial activity have met with difficulty since entrepreneurial activity in the region emerged over time from a spontaneous rather than systematic attempt (Aponte, 2005). A shift from an economic model to another will require the radical transformation of institutions supporting the entrepreneurial environment, for both, informal institutions (values, culture and social norms) and formal institutions (policies, laws and support programs). In Puerto Rico, two changes are required: first, the shift from a culture that values workers to a culture that values entrepreneurs; and, second the shift from dependency to self-sufficiency. In other words, Puerto Rico needs an empowered-entrepreneurial culture. This can be achieved by systematically building an environment that fosters and support entrepreneurial processes. However, the problem that arises in building an infrastructure supporting entrepreneurship is the lack of understanding of the process that drives entrepreneurial potential (intentions) towards firm birth.

As previously stated, several theoretical approaches have been put forth to explain what makes individuals create a business and how these individuals pursue their entrepreneurial endeavor. However, Reynolds (2000) indicate that none of the strategies pursued by these different approaches get to the heart of the start-up process because they do not provide a controlled comparison of those conducting start-up efforts that become infant firms with those that abandon the start-up effort. As a consequence of this, there is a lack of reliable descriptions of the entrepreneurial process as a whole – the process that considers formulation of entrepreneurial intentions; transition from intentions to actively conducting activities to start a business (nascent entrepreneurship); and successful entrepreneurial attempt (firm birth).

Psychology literature has proven intentions to be the best predictor of behavior, particularly when that behavior is rare, hard to observe, or involves unpredictable time lags. Since new businesses emerge over time and involve considerable planning; entrepreneurship is exactly the type of planned behavior (Bird, 1988; Katz & Gartner, 1988) for which intention models are ideally suited. This in turn locates entrepreneurial intentions at the core of entrepreneurship. Although entrepreneurial intentions have been used extensively as a proxy for entrepreneurial behavior, there are some limitations in understanding the factors that help transition from intentions to behavior. Moreover, putting intentions at the core of entrepreneurship creates limitations in terms of finding representative samples of the population that could provide insights into entrepreneurial behavior (firm birth). The main reason is that entrepreneurial potential (individuals who have intentions of creating a business) are unregistered. One approach to manage this limitation has been to select large samples of the adult population in regions in order to identify individuals who manifest entrepreneurial

intentions. Examples of the above are the United States Panel Study of Entrepreneurial Dynamics (Reynolds, 2000) and the Global Entrepreneurship Monitor (Reynolds et al., 2005). This sampling selection approach requires large samples of individuals to identify a representative sample of individuals with entrepreneurial intentions (entrepreneurial potential). Other approaches suggest analyzing samples of individuals with proven intentions to start a business such as clients from Small Business Development Centers (SBDCs).

This study bridges entrepreneurial intentions and behavior by using two samples. We employ data from the Global Entrepreneurship Monitor (GEM), Puerto Rico Region to explore factors that influence entrepreneurial intentions from a large sample of individuals. The Adult Population Survey (APS) considers a random sample of 2,000 individuals from the adult population (18-64) and allows the examination of entrepreneurial potential (individuals with entrepreneurial intentions) in Puerto Rico. In contrast with other studies in the field that use information once the firm has come into existence as a formal entity (the business was already created), this phase of the research examines intentionality as a property of emerging organizations. At this stage the business has not yet been created but the intention to create a business has been formulated. Contrarily, the second phase of the framework, which considers the transition from intentions to behavior, analyzes the effect of exogenous factors (personal and situational) on entrepreneurial behavior (i.e. firm birth) and on attitudes towards entrepreneurship. By using a sample of individuals with proven intentions (i.e. Small Business Development Center clients) we are able examine the relationships of personal and environmental factors on entrepreneurial attitudes and behavior. By examining these relationships we will be able to provide a complete picture of entrepreneurial behavior, which

provides the baseline to establish an infrastructure that stimulates entrepreneurship in the region: Puerto Rico.

1.2 Objectives of the research

The definition of entrepreneurship in terms of what it should comprise has taken different meanings. In 1949 Danhoff wrote, "Entrepreneurship is an activity or function and not a specific individual or occupation." This argument led to behavioral perspectives of entrepreneurship. Analyzing entrepreneurship through behavioral perspectives allows us to bridge both individual and context, since behavior is influenced by personal and environmental factors. This study adopts Gartner's (1985) conceptualization: the emergence of new organizations (firm birth). Katz & Gartner (1988) suggested four emergent properties that would indicate an organization in the process of coming into existence: intention to create an organization, assembling resources to create an organization, developing an organizational boundary (incorporation), and exchanges of resources across the boundary (sales). Depending on the property/s employed the authors suggest sample selection approaches to identify emerging organizations for further studying (i.e. large samples of adult population, subscribers of entrepreneurial magazines, and clients of SBDCs, among others).

The general purpose of this study is to analyze the antecedents of entrepreneurial intentions, attitudes towards intentions; and the factors that influence the transition from intentions to entrepreneurial behavior (firm birth) in Puerto Rico. More specifically, we will analyze the relation of personal and environmental factors on attitudes, and how these factors influence entrepreneurial behavior (firm birth). The study employs quantitative methodology to

test the determinants of entrepreneurial intentions, which have been strongly supported by the literature (planned behavior) and the factors that influence the intention-behavior relationship (entrepreneurial behavior). Moreover, the study analyzes how exogenous factors (personal and environmental) influence attitudes towards entrepreneurship (antecedents of intentions) and consequently entrepreneurial behavior. By examining these factors we will be able to provide insights into the entrepreneurial process: from the formulation of entrepreneurial intentions to successful entrepreneurial behavior (firm emergence). The specific objectives of the study are:

1. To verify the determinants (antecedents) of entrepreneurial intentions in Puerto Rico.
2. To determine the influence of exogenous factors (personal and situational) on the intention-behavior relationship from nascent entrepreneurs in Puerto Rico.
3. To evaluate how exogenous factors (personal and situational) influence entrepreneurial attitudes in Puerto Rico.

1.3 Significance and Justification

Despite several perspectives to analyze entrepreneurship, there is still lack of understanding of the entrepreneurial process and its transitions, mainly due to practical issues. As indicated by Reynolds (2000) none of the strategies pursued by these approaches get to the heart of the start-up process because they do not provide a controlled comparison of those conducting start-up efforts that become infant firms with those that abandon the start-up effort. As a consequence of this, there is a lack of reliable descriptions of the entrepreneurial process that considers formulation of entrepreneurial intentions; transition from intentions to actively

conducting activities to start a business (nascent entrepreneurship); and entrepreneurial behavior (firm birth). Overall, the main reason for the lack of descriptions of entrepreneurial processes is that entrepreneurial potential (individuals who have intentions of creating a business) and nascent entrepreneurs are unregistered, which makes it difficult to identify samples that allow exploration of the process and comparisons with others who have entrepreneurial intentions but do not manage the required transitions for firm birth. Several approaches have been suggested to manage this limitation. (i.e. large samples of adult population, subscribers of entrepreneurial magazines, and clients of SBDCs, among others).

The Global Entrepreneurship Monitor (GEM), international research program that monitors entrepreneurial activity of regions, provides data to explore the determinants of entrepreneurial intentions, the first stage in the entrepreneurial process. GEM uses large samples of the adult population to analyze and compare entrepreneurial activity in regions. Using this large sample of the adult population we will be able to assess the determinants, factors that influence entrepreneurial intention in Puerto Rico. This in turn, will allow us to test the validity of intentional models in the context of entrepreneurship. Moreover, by understanding the factors that help differentiate individuals with intentions to start a business in the future with those who have no intentions to start we will be able to develop programmatic initiatives to stimulate entrepreneurial attitudes in the region. Also, demographic differences among these groups help target individuals with predisposition to start a business (individuals with entrepreneurial intentions).

In order to examine the factors that influence entrepreneurial attitudes and behavior we will use a sample of individuals who manifested entrepreneurial intentions, individuals who were actively conducting activities to create a business in Puerto Rico. These individuals are considered nascent entrepreneurs since they already started pursuing activities to start a business. For this analysis we employed clients from SBDCs in Puerto Rico as these supply the samples required for assessing the factors embedded in entrepreneurial behavior (firm birth). This consequently leads to accurate descriptions of the entrepreneurial process: from entrepreneurial potential to firm birth. Refer to the methodology section for details and justification of sample frames. By analyzing the factors (personal and environmental) those influence entrepreneurial attitudes and behavior we will be able to test intentional theories in the context of entrepreneurship. Moreover, by examining the impact of personal (human, social, and financial capital) and environmental (facilitators, inhibitors and displacement events) on attitudes and behavior we will be able to evaluate whether these in fact influence entrepreneurial processes, as suggested by the theories of intentional behavior. Also, in terms of practical contributions, we will be able to recommend programs that influence these factors in order to further stimulate entrepreneurship in the region.

In sum, the findings of the study provide numerous implications. First, according to Krueger, Reilly and Carsrud (2000) intentional models have been quite useful at explaining planned behavior, such as entrepreneurship. Evaluating the key determinants of intentions implies understanding behavior, which can lead to the development of policy that influences entrepreneurial behavior. Second, by analyzing the key assumptions of theories of planned behavior, specifically the precursors of intentions will put to the test the validity of this theory

within the entrepreneurial field. More specifically, these theories will be put to the test in the context of Puerto Rico. Studies examining antecedents of intentions have been consistent and demonstrate that attitudes influence entrepreneurial intentions, which according to the intentional theories are a pre-condition for entrepreneurial behavior. However, in order to demonstrate universality of these theories, examination in different contexts, including regions and disciplines (i.e. entrepreneurship) are required. Also, understanding the effect personal and environmental factors allow us to develop programmatic initiatives to stimulate these in order to spur entrepreneurship and consequently regional development.

As previously stated, the Theory of Planned Behavior, TPB (Ajzen, 1991) and Shapero's Model of Entrepreneurial Event, SEE (Shapero, 1982) have been strongly supported by the literature, particularly the role of attitudes on entrepreneurial intentions. Our study put to the test these theories in the context of Puerto Rico. Nonetheless, these studies only contemplate one part of the process: the formulation of entrepreneurial intentions. This in turn, represents a serious limitation, basically because these theories use intentions as a proxy of entrepreneurial behavior. Empirical studies that address the gap from intentions to behavior have been limited, mainly due to practical issues. One exception can be found in Gelderen et al. (2005). The main reason for the lack of empirical studies is that entrepreneurial potential (individuals who have intentions of creating a business) and nascent entrepreneurs are unregistered, which makes it difficult to identify samples that allow exploration of the process and comparisons with others who have entrepreneurial intentions but do not manage the required transitions for entrepreneurial behavior (firm birth). Assessing the factors embedded in this transition (from intentions to firm birth)

increases our understanding of the entrepreneurial process and how these lead to the emergence of an organization.

Contributing to the limitation mentioned in the previous paragraph, the few studies that analyze the intention behavior link have been descriptive and do not possess an integrated conceptual model that allows explanations for the relationships. The results of this study will provide theory driven insights into the factors that lead to entrepreneurial behavior. Examining the transitions during the venture process (from intentions to firm behavior) increases our understanding of the entrepreneurial process and the factors that lead to the emergence of an organization, given that the relationship between intentions and behavior is imperfect. Moreover, the study contributes to the entrepreneurship field by enhancing our understanding of the underlying factors that must be developed in order to create positive attitudes towards entrepreneurship that lead to intentions and stimulate its transition towards behavior resulting in increased entrepreneurial activity in the region.

1.4 Structure of Research

The research is structured as follows. In the next section we present theoretical notions that drive this study. We discuss theories that help us examine the formulation of entrepreneurial intentions, including Ajzen's (1991) Theory of Planned Behavior, Shapero's (1982) Model of Entrepreneurial Event, and Krueger and Brazael's (1994) Model of Entrepreneurial Potential. Later, we discuss the literature on the transition from intentions to entrepreneurial behavior. Using the Resources Based View we provide a framework for examining exogenous factors, both personal (human, social and financial capital) and situational-environmental factors

(inhibitors, facilitators and displacement events). A framework that includes entrepreneurial potential and firm birth is presented with the proposed hypotheses. Also, we discuss the context of study (Puerto Rico) based on preliminary research conducted from secondary sources.

In the methodology section we present the design of the study, including sample selection approaches, instrument development and data collection design for both the analysis of secondary data gathered from the Global Entrepreneurship Monitor and the analysis of primary data gathered from Small Business Technology and Development Centers (SBTDCs). An evaluation of reliability of the scales is also presented in this section. In the results section we present descriptive, inferential and regression statistics, along with grouping techniques to shed light into the process of entrepreneurial intentions and behavior (firm birth). In this section we put to the test the proposed hypotheses. Afterwards, we discuss the findings of the study. Finally, we present the conclusions and implications of the study, both practical and academic. Future lines of research are also proposed in the last section.

2. THEORETICAL FRAMEWORK

In this section literature relevant to the proposed research study is discussed. First, a discussion on the entrepreneurial process is presented. Second, theoretical considerations of entrepreneurship as planned behavior are presented; more specifically a review of entrepreneurial intentions' models derived from the Theory of Planned Behavior (Ajzen, 1991) is presented. Third, an examination of the intentions-behavior literature is discussed. Fourth, interplay between the Resource Based View and Institutional Theory is presented as a framework for analyzing exogenous factors. Finally, we explain the conceptual model of the study and the expected relationships. The section is divided as follows: (2.1) *The Entrepreneurial Process*; (2.2) *The Formulation of Entrepreneurial Intentions*; (2.3) *From Intentions to Entrepreneurial Behavior;* (2.4) *A Framework for Examining Exogenous Factors*; and (2.5) *Conceptual Framework of Study*.

2.1 The Entrepreneurial Process

The concept of entrepreneurial process has become widely accepted in the context of entrepreneurship to represent the chain of events that lead to the formation of a new venture. Opportunity perception (Kirzner, 1979; Shane and Venkataraman, 2000; Alvarez and Busenitz, 2001) is often mentioned as the first event of the entrepreneurial process. Timmons (1994) identified three driving forces of entrepreneurial process: (1) founder and team, (2) opportunity, and (3) resources. Reynolds and Miller (1992) describe the gestation process, which included four key events: principal's commitment, initial hiring, initial financing, and initial sales. Vesper

(1990) argued that a new company is composed of five key ingredients: (1) technical know-how, (2) a product or service idea, (3) personal contacts, (4) physical resources, and (5) customer orders, and he offers some insights into various start-up sequences that occur among the five key ingredients.

Katz and Gartner (1988) suggested four emergent properties that would be indicators that an organization is in the process of coming into existence: (1) intention to create an organization, (2) assembling resources to create an organization, (3) developing an organizational boundary (e. g., incorporation), and (4) exchanges of resources across the boundary (e.g., sales). The model was developed in response to the lack sound definitions of organizational emergence. According to the authors, most theories considered properties that occur after organizations have been formed – *"…our theories and definitions about organizations assume that they already exist; that is, the starting point for our theories begins at the place where the emerging organization ends"* – (Katz and Gartner, 1988). In this sense, it emphasizes the limitations of employing retrospective accounts of existing organizations as these may not be representative of entrepreneurial efforts or attempts that did not converted into an organization.

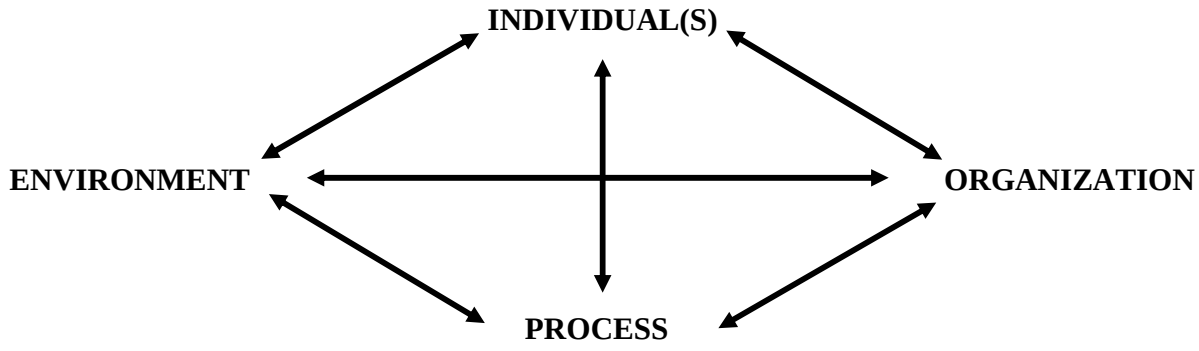
Opportunity recognition and exploitation play a central role in entrepreneurship. Shane and Venkataraman (2000) define entrepreneurship as the discovery and exploitation of opportunities. Their entrepreneurship framework comprises the existence, discovery, and exploitation of entrepreneurial opportunities. According to the authors in order for opportunities exist there must be asymmetry of information or new information that is not available to everyone. Secondly, the discovery of entrepreneurial opportunities can take place if particular

people posses prior information necessary to identify an opportunity, plus they have cognitive properties necessary to value it. Third, the decision to exploit an entrepreneurial opportunity depends on the nature of the opportunity, the expected value of it. According to Shane and Venkataraman (2000) individual differences, such as the amount of financial capital they have, the strength of social ties to resource providers, the amount of useful information they posses concerning exploitation, and different perceptions of risk and chances will affect the decision to exploit entrepreneurial opportunities.

Gartner (1985) presented a four-dimensional framework for describing the phenomenon of new venture creation: individual, process, environment and organization (Refer to Figure 1). He came up with the framework by summarizing the variables that had been used in past research to describe entrepreneurs and their ventures. According to the author, the individual/s dimension relate to intrinsic variables such as (1) psychological characteristics, (2) background of the entrepreneur, (3) experience, (4) attitudes and (5) demographics. However, he questioned the validity of using psychological characteristics. In his 1988 work, Gartner called up for a reorientation toward a behavioral approach, where the focus of research should be answering questions such as what individuals do to enable organizations' existence. The environment dimension was incorporated in his model based on the assumption that individuals and organizations respond to the environment (external conditions). These include but are not limited to: (1) venture capital availability, (2) presence of experienced entrepreneurs, (3) skilled labor force, (4) accessibility of customers and suppliers, (5) influence of governmental institutions and universities, (6) attitudes in the region, and (7) availability of supporting services. This list was based on the 12 factors proposed by Bruno and Tyebjee (1982). Gartner

(1985) included in the model an organization dimension to acknowledge variations in firm characteristics. The purpose is to shift focus from the entrepreneur to the organization, but without disregarding the central role of individual/s in venture creation. According to the author, some firm characteristics that could be examined are: (1) industry sector, (2) strategic choices, (3) existence of entrepreneurial teams, and (4) competitive entry wedges, as proposed by Vesper (1980).

Figure 1 – Gartner's Framework of Venture Creation



Source: (Gartner, 1985)

The final dimension that concerns the most with our study is process. Concerning this dimension, Gartner (1985) listed the most cited behaviors related to new venture creation: (1) the entrepreneur locates a business opportunity; (2) the entrepreneur accumulates resources; (3) the entrepreneur markets products and services; the entrepreneur produces the product; (4) the entrepreneur builds and organization; and (5) the entrepreneur responds to government and society. It is important to notice that although the author lists these behaviors; he does not imply a sequence of actions. Overall, Gartner's (1985) framework is an exhaustive framework that captures numerous variables for describing new venture creation. However, it does not explain

explicit relationships between the four dimensions and its variables. Because of this, the author argues that his framework ought to be seen as a kaleidoscope, an instrument through which to view the enormously varying patterns of new venture creation.

In 1999, Gartner et al. developed a list of five entrepreneurial behaviors or activities conducing venture creation: (1) finding and refining the opportunity: comprised of 9 activities, such as defining the purpose of the business, planning, analyzing competitors; (2) acquiring resources and help: comprised of 15 different activities such as, finding investors, getting advice from lawyers, getting a loan, acquiring technical expertise; (3) operating the business: comprised of 5 different activities, such as, dealing with distributors, managing day to day operations of the business; (4) identifying and selling to customers: comprised of 5 different activities, such as, identifying specific customers to sell to, selling to customers, managing sales channels; and (5) outside of the business factors: comprised of 4 different activities, such as, dealing with family problems, spouse, and friends. These activities were based on a previous review of the literature on entrepreneurial behavior (Gartner and Starr 1992), and subsequent empirical investigations on the nature of entrepreneurial behavior (Gartner and Starr, 1993; Gatewood et al., 1995).

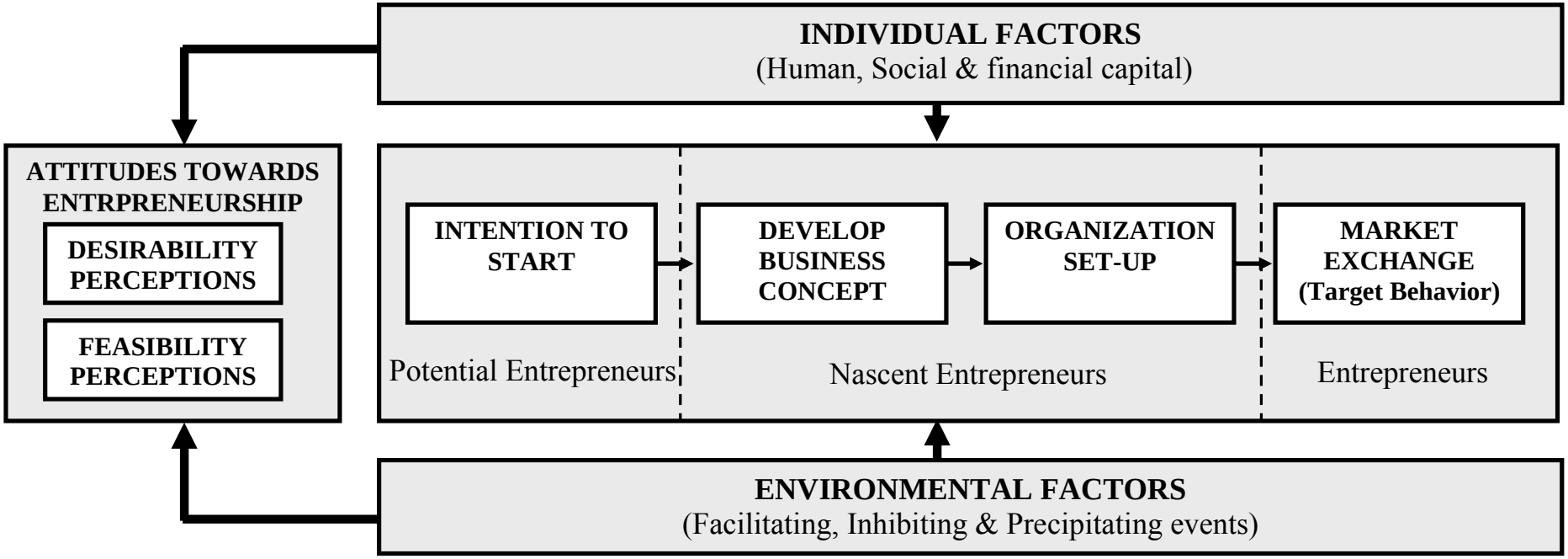
Using Gartner's (1985) framework as starting point, Bhave (1994) developed a process model of venture creation based on the need of developing empirical process studies of entrepreneurship. The author described the entrepreneurial process as an iterative, nonlinear, feedback-driven, conceptual, and physical process. It includes: (1) internally and externally stimulated opportunity recognition, (2) commitment to physical creation, (3) set-up of production technology, (4) organization creation, (5) product creation, (6) linking with markets and

customer feedback. The author summarizes the events and sub-processes in three principal stages and identifies the core variable for each stage: (1) opportunity stage, where the core variable to represent this stage is the business concept; (2) technology setup and organization creation stage, where the core variable is production technology defined as the moment when a product ready for the customer is created for the first time; and (3) exchange stage, where initial customer feedback and corrective actions are made, and the product produced. Overall, Bhave's (1994) findings are similar to those described by others(i.e. Carter et al, 1995; Reynolds and Miller, 1992). These describe the process of setting a business as entailing the execution of a number of activities, with high variation in the sequence and amount of activities (Gelderen et al. 2005).

The above discussion provides insights into the entrepreneurial process and suggests the complexity of achieving the target behavior (venture creation). The next figure (2) depicts a general process model of venture creation that will guide this study. After discussing the literature that supports this study, we illustrate a more specific model with expected relations. At this stage, we introduce a general model of venture creation in order to ease understanding of the theories discussed in next sections. It is important to notice that figure 2 only depicts the process of venture creation and how it interacts with intentional models of behavior. Nonetheless, the specific framework of this study is illustrated in the conceptual model (Figure 4). Four general phases are depicted in Figure 2: (1) intentions, (2) development of business concept, (3) organization set-up, and (4) market exchanges. Attitudes will serve as precondition to start moving along this 4-stage process. Individuals must have positive attitudes towards an object (starting a business) in order to make a decision, commit and conduct activities towards

achieving the object. However, attitudes are not formed in vacuum, but are dependent on personal and environmental factors. Also, environmental and personal factors influence each stage of the venture creation process, which could determine the success or failure to complete the outcome (entrepreneurial behavior).

Figure 2 – A Conceptualization of the Venture Creation Process



Source: Developed by the author

The four phases depicted in the figure are characterized by different milestones and completion of each stage leads to a transition (moving foward). The first phase is the development of intentions to start a business (i.e. Krueger et al., 2000, Katz and Gartner, 1988). This is also analogous to what Bhave (1994) defined as decision to start. Although in his empirical examination he found that most respondents formulated the decision to start prior opportunity recognition, he also noted the opposite in some cases. This finding is what he denominated internal and external opportunity recognition (sub-process) within the opportunity stage. This stage is characterized by a willingness and disposition to start a business, although it does not entail action. According to the literature on intentions that will be discussed in the next section, attitudes are precursors of intentions and are influenced by exogenous factors (personal and environmental). Also, these factors (personal and environmental) influence the other stages in the process of venture creation. These will determine whether or not potential entrepreneurs (individuals with intentions) can make the transition to nascent entrepreneurs. This transition will be accomplished once potential entrepreneurs start to actively conduct activities for venture creation.

The second phase requires the recognition of opportunities and the development of a concept (Gelderen et al. 2005). This is similar to Shane and Venkataraman's (2000) discovery of opportunities. The authors indicate that recognizing that an opportunity exists and has value is a required condition for entrepreneurship. This stage is also included in Bhave's (1994) process model as a sub-process of the opportunity stage. In fact, according to the author the core variable (final milestone) to represent this stage is the business concept. The distinctive characteristic at this stage when compared to the first stage (intentions) is that potential

entrepreneurs start actively conducting activities towards developing a business solution (business idea/concept). At this stage, the majority of the resources employed by the entrepreneurs are intangible (Bhave, 1994) since they are actively evaluating opportunities and concepts, thus it requires information. Social networks and human capital may play a significant role in this phase. Moreover, since individuals are now actively conducting activities to start a business, they make the transition from potential entrepreneurs to nascent entrepreneurs.

The third phase requires that resources are assembled and the setting up of the business. This is similar to Gartner (1985) who indicated that entrepreneurs accumulate resources and builds an organization. In his process model of venture creation, Bhave (1994) suggest that entrepreneurs garner resources and use these for technology set-up and organization creation. According to the author, this stage concludes when a product is ready for customers. In our study, we will denominate this phase: organization set-up. The main outcome at this stage (3) is that the business is in place and ready to sell the product or service. This stage requires more tangible resources (i.e. money to rent facilities) and more interaction with the environment (i.e. compliance with governmental institutions), which suggests the impact of personal or environmental factors.

The final stage, as suggested by Bhave (1994) and Gelderen et al. (2005) is when the organization exchanges with the market. According to Bhave (1994), first sale is the last step in venture creation. This is similar to Block and MacMillan (1985) who indicates that first sale is a significant milestone in venture creations since it gives a big push forward to the entrepreneurs. At this stage, entrepreneurs validate their business concept and learn through customer feedback.

Sales become the most tangible outcome of market exchanges. Therefore, first sale represents the confirmation that a business has been created and the transition from nascent entrepreneurs to entrepreneurs. Although several activities could be included in this final stage (i.e. adjustments of the business concept based on customer feedback), our study focuses on market exchanges as a proxy of firm emergence (goal behavior).

In sum, the entrepreneurial process is a feedback-driven process, both internally and externally stimulated. The literature suggests several phases or transitions in the venture creation process. These were depicted in Figure 2. Factors such as commitment-intention, resources and knowledge, among others are key ingredients for venture creation. Also, discovery of opportunities and exploitation, which is contingent on multiple resources (Shane and Venkataraman, 2000) is central in entrepreneurship. Overall, the discussion suggests that entrepreneurship is far from being habitual response behavior. In that sense, it is important to develop models that allow exploration of the factors at play during this intentional process. In the next section we discuss the literature of Planned Behaviors and its' applications on entrepreneurship.

2.2 The Formulation of Entrepreneurial Intentions: Theories of Planned Behavior

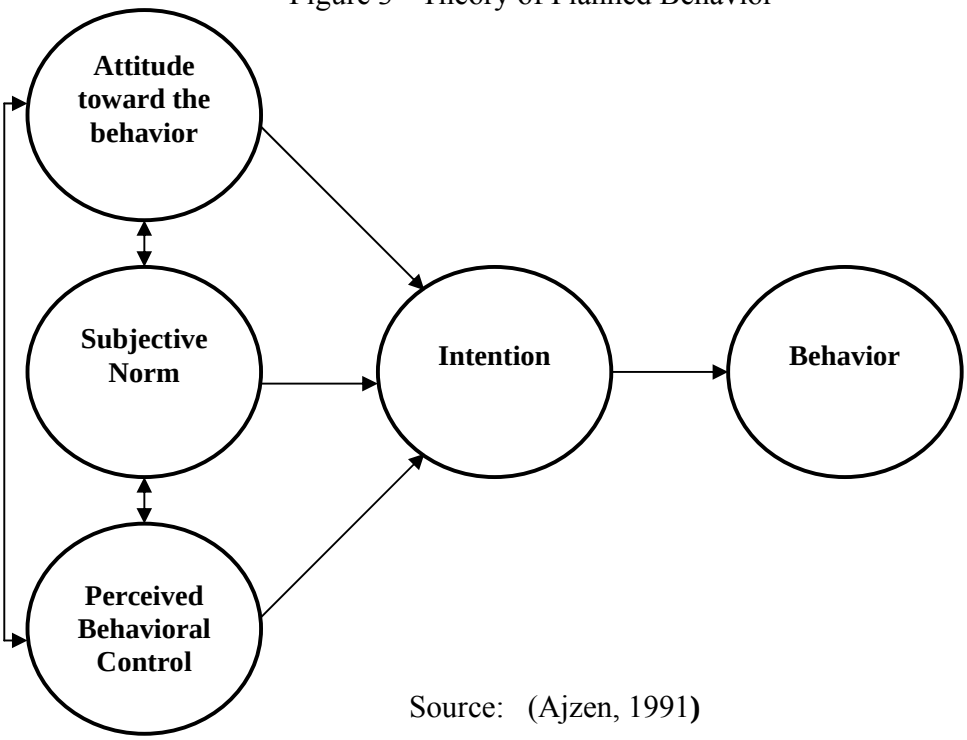
According to Krueger, Reilly and Carsrud (2000) intentional models have been quite useful at explaining planned behavior, such as venture creation. According to the authors, opportunity identification and exploitation is clearly an intentional process, and, therefore, entrepreneurial intentions clearly merit our attention. Also, intentions offer a means to better

explain and predict entrepreneurship. According to Ajzen (1991) intentions entail an enactive cognitive process which serves to channel beliefs, perceptions and other exogenous factors into the intent to act, the to take action itself. The psychological literature has proven intentions to be the best predictor of planned behavior, particularly when that behavior is rare, hard to observe, or involves unpredictable time lags. Since, new businesses emerge over time and involve considerable planning; entrepreneurship is exactly the type of planned behavior (Bird, 1988; Katz and Gartner 1988) for which intention models are ideally suited. In this section, models of intentional behavior and its application in the entrepreneurial process are discussed. More specifically, we discuss Ajzen's Theory of Planned Behavior (1991), Shapero's Model of Entrepreneurial Event (1982) and Krueger and Brazeal's model of Entrepreneurial Potential (1994).

2.2.1 Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) is an extension of the theory of reasoned action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). This theory (Refer to Figure 3) was developed in order to address the original model's limitations in dealing with behaviors over which people have incomplete volitional control. The Theory of Reasoned Action (Ajzen and Fishbein, 1980) had three conditions. First, intention can predict actual behavior given that the behavior is under complete volitional control. Second, intention can predict actual behavior given that intention has not changed before the behavior is observed. Third, intentions can predict actual behavior given that intentions correspond with behavior in terms of target and context.

Figure 3 - Theory of Planned Behavior



Source: (Ajzen, 1991)

The Theory of Planned Behavior (TPB) helps explain the factors that influence intentions and behavior: phases depicted in the venture creation process model (Figure 2) in previous section. According to several authors (i.e. Krueger et al., 2000, Katz and Gartner, 1988), intentions are precursors of behavior. Using decision to start as analogous to intentions, Bhave (1994) found that although some cases identified an opportunity prior making the decision to start, intentions were present in all cases. However, it is important to notice that intentions do not necessarily entail behavior or action, but willingness and disposition. This is why several studies describe intentions as entrepreneurial potential (i.e. Reynolds, 1997; Gelderen et al., 2005), particularly since these are a required condition in complex and planned behavior such as venture creation.

Based on this theory (TPB), the most important determinant of behavior is intention. These are a function of attitudes towards a conduct and subjective norms (Fishbein and Ajzen, 1975). While the first one refers to the beliefs individuals have towards an object based on positive or negative valuations of each belief; subjective norms relate to the beliefs of significant persons in the life of the individual and his/her motivation to satisfy their expectations. In this sense, the latter receives input from the socio-cultural context of the individual. According to the authors, these social factors are even more important contributors as they facilitate or inhibit behavior. Also, these can be modified through adequate social structures. However, noticing that not every behavior is under the individual's power, Ajzen (1991) introduced the concept of perceived control, which considers abilities and resources that may interfere with the operation of intentions.

Ajzen (1985) recognized that behavior is not under complete volitional control when it is impeded by personal and environmental factors. In this sense when these factors prevent individuals from executing the behavior, intention will predict the attempts to perform the behavior instead of the actual behavior (i.e. I will attempt/try to start a business). In this sense it is crucial to analyze the factors that can inhibit (prevent) or facilitate actual behavior. These factors will moderate the relation between intentions and behavior. Congruent with Shapero's (1982) model of entrepreneurial event, exogenous factors (personal and situational) will also influence behavior through attitudes. It is important to notice that the original derivation of the Theory of Planned Behavior (Aizen, 1985) defined intention (and its other theoretical constructs) in terms of trying to perform a given behavior rather than in relation to actual performance. However, early work with the model showed strong correlations between measures of the

model's variables that asked about trying to perform a given behavior and measures that dealt with actual performance of the behavior (Schifter & Ajzen, 1985). Since the latter measures are less cumbersome, they have been used in subsequent research, and the variables are now defined more simply in relation to behavioral performance.

Once acknowledged the fact that not all behavior is under volitional control, the latter Theory of Planned Behavior, states that performance of a behavior is a joint function of intentions and perceived behavioral control. Similarly to the theory of reasoned action, several conditions must be met, for accurate prediction of behavior. First, measures of intention and of perceived behavioral control must correspond or be compatible with the behavior that is to be predicted (Ajzen, 1988). That is, intentions and perceptions of control must be assessed in relation to the particular behavior of interest, and the specified context must be the same as that in which the behavior is to occur. Ajzen (1991) explains the issue of correspondence with the following example: if the behavior to be predicted is donating money to the Red Cross, then we must assess intentions to donate money to the Red Cross (not intentions to donate money in general nor intentions to help the Red Cross), as well as perceived control over donating money to the Red Cross. Second, for accurate behavioral prediction, intentions and perceived behavioral control must remain stable in the interval between their assessment and observation of the behavior. Intervening events may produce changes in intentions or in perceptions of behavioral control, with the effect that the original measures of these variables no longer permit accurate prediction of behavior. The third requirement for predictive validity has to do with the accuracy of perceived behavioral control.

Krueger and Carsrud (1993) indicate that understanding venture creation requires research using theory-driven models that reflect the complex process underlying intentional behavior. Intentions will depend on attitudes toward the behavior, which reflect beliefs and perceptions towards the target behavior. Krueger, Reilly and Carsrud (2000) put to the test Ajzen's (1991) Theory of Planned Behavior. The sample consisted of students facing a career choice. The results of this test show that intentions are the best predictor of any planned behavior. Personal and environmental variables have an indirect effect on entrepreneurship, specifically through attitudes and motivation to act. Overall, the authors conclude that theories of planned behavior offer the means to understand entrepreneurial processes and, stimulation entrepreneurship can be done by stimulating attitudes and perceptions towards the behavior.

Krueger and Carsrud (1993) discuss the results of an experimental test on Ajzen and Fishbein's framework of entrepreneurial intentions. The findings show that intentions depend on attitudes. Perceived behavioral control explained the most variance among all antecedents of intentions. As previously discussed, the Theory of Planned Behavior posits that exogenous factors influence entrepreneurial intentions and behavior through attitudes. According to empirical examinations, the existence exogenous factors such as role models only weakly predict future entrepreneurial activity (Brockhaus and Horwitz, 1986; Carsrud et al. 1987; Scott and Twomey, 1988). However, role model's subjective impact is a strong predictor. Role models affect entrepreneurial intentions, but only if they affect attitudes (Krueger, 1993; Scherer et al. 1989).

Krueger, Reilly and Carsrud (2000) also suggest that intentional models offer the means to understanding the role of exogenous factors in entrepreneurship. The authors conducted a study comprised of 97 senior university business students facing important career decisions. When evaluating the Theory of Planned Behavior the authors found that intentions were predicted by perceived behavioral control and attitude toward the conduct, not so by subjective norms. Perceived behavioral control represented the stronger influence on intentions. Despite the contributions of the Theory of Planned Behavior, particularly in terms of understanding the factors that influence attitudinal variables and consequently behavior, it is important to notice that this theory deals with only one part of the picture since it does not state the impact of exogenous factors in the intention-behavior relation (entrepreneurial behavior). In the next section we discuss another intentional model developed explicitly to explain entrepreneurial behavior: The Model of Entrepreneurial Event (SEE).

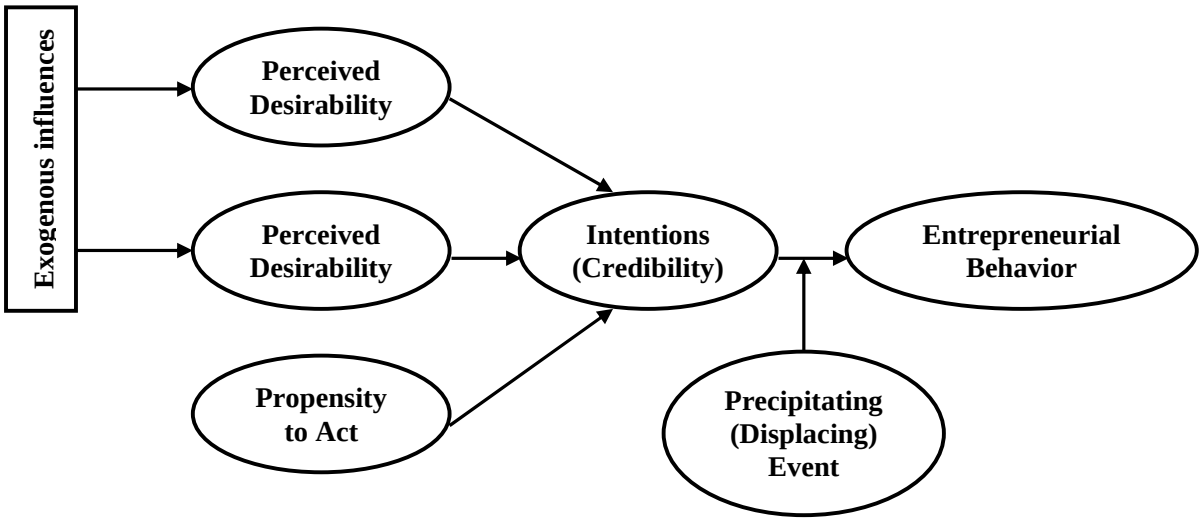
2.2.2 Shaperos's Model of Entrepreneurial Event (SEE)

In 1982 Shapero and Sokol developed a model of entrepreneurial event based on the Theory of Reasoned Action, later improved to the Theory of Planned Behavior (Refer to Figure 4). Similar to the theories discussed in the previous section, in this model intentions as well as perceptions are a necessary precondition for target behavior (entrepreneurial behavior). In order to pursue the entrepreneurial career individuals must perceive it credible. Credibility is a combination of desirability and feasibility perceptions, where desirability is related to attractiveness of the entrepreneurial career and feasibility corresponds to perceptions of how difficult is the task at hand. More specifically, desirability relates with whether individuals

consider entrepreneurial behaviors attractive (desirable), feasibility is concerned with how easy or hard the task at hand is (feasible). The latter is also congruent with Vesper (1990), who states that individuals must perceive they possess the skills to achieve the task at hand in order to decide to start a business. The author also includes two additional dimensions: propensity to act and displacement (precipitating event that triggers the actual intended behavior). In his model, the influence of exogenous factors is on desirability and feasibility perceptions, which consequently influence intentions towards behavior (Refer to Krueger, 1993). As an example, the authors indicate that exogenous factors such as prior exposure to entrepreneurial activity influence intentions toward entrepreneurial behavior through attitudes.

Shapero and Sokol (1982) emphasize the socio-cultural environment in the decision to start a business. Based on the theories of planned behavior he introduces the concepts of desirability perceptions and feasibility perceptions to the study of business creation. Basically, he integrates the attitudes towards a conduct and subjective norms within desirability construct and elements of perceived control within the feasibility construct. Although the theories of planned behavior and Shapero's model of entrepreneurial event do not state the relative importance of these dimensions in the formulation of entrepreneurial intentions, Krueger and Brazael (1994) expose the relative importance of feasibility perceptions in predicting the intention starting a business. For a discussion on competing models of entrepreneurial intentions interested readers are referred to Krueger, Reilly and Carsrud (2000).

Figure 4 - Shapero's Model of Entrepreneurial Event



Source: (Krueger and Carsrud, 1993)

Krueger and Casrud (1993) conducted a test of Shapero's model and showed that perceive feasibility, perceived desirability and propensity to act are all significant antecedents of entrepreneurial intentions. Exogenous factors such as prior exposure to entrepreneurial activity influence desirability and feasibility perceptions. Krueger, Reilly and Carsrud (2000) proved that situational and individual variables alone are poor predictors of entrepreneurial activities. However suggest that intentional models offer the means to understanding the role of these variables in entrepreneurship. The study comprised 97 senior university business students facing important career decisions in order to compare and contrast the utility of two intentional models, specifically Theory of Planned Behavior (TPB) and Shapero's Model of Entrepreneurial Event (SEE). When evaluating the TPB model the authors found that intentions were predicted by perceived feasibility and attitudes towards the conduct, not so by subjective norms. Perceived behavioral control represented the stronger influence on intentions. When comparing both

models, Shapero's (1982) model had higher adjusted R^2 than Ajzen's Theory of Planned Behavior. The analysis showed that feasibility and desirability perceptions were significant antecedents of entrepreneurial intentions.

According to Krueger (1993) exogenous factors influence intentions through attitudes and perceptions. In his analysis he analyzed the role of exogenous factors, specifically human capital measures (quality of experience and positiveness of experience) on intentions. The sample consisted of 126 university students facing immediate career choices. The results show that intentions were significantly associated to feasibility and desirability perceptions. Also, using path analysis the author found that human capital variables where related to feasibility and desirability perceptions. For example, quality of experience was strongly related to feasibility perceptions, while positiveness of experiences was associated to perceived feasibility. Finally, the study found that a person's prior exposure to entrepreneurship had a positive relationship with perceived desirability and feasibility of starting a business. These two were found positively related to entrepreneurial intentions. Once again, it is important to notice that the literature examined in this part only deals with part of the picture since it did not provide the impact of these factors in the intention-behavior relation.

2.2.3 Krueger and Brazael's Model of Entrepreneurial Potential

Krueger and Brazael (1994) developed a model of entrepreneurial potential based on the individuals' intentions to create businesses. According to this model, the perceptions of individuals produce a predisposition towards a conduct. This predisposition, influenced by a

catalytic event (usually unexpected), drive entrepreneurial intentions. Their model of entrepreneurial potential was derived from the Theory of Rational Behavior (Fishbein and Ajzen, 1975), later modified to the Theory of Planned Behavior (1991), and the Model of Entrepreneurial Event (Shapero, 1982). Both theories basically address the importance of perceptions in human behavior. According to Krueger, Reilly and Carsrud (2000) the Theory of Planned Behavior (TPB) and Shapero's Model of Entrepreneurial Event (SEE) are largely homologous to one another since both contain an element conceptually associated with perceived self-efficacy (perceived behavioral control in TPB; perceived feasibility in SEE). TPB's other two attitude measures correspond to SEE's perceived desirability (Refer to Table 1)**.** Moreover the theories emphasize the impact of the environment (social norms, policies and other institutions) in shaping perceptions and consequently behavior. In this sense, it is argued that in order to predict behavior one must consider both personal and environmental factors.

Table 1 - Ajzen's Theory of Planned Behavior and Shapero's Entrepreneurial Event

Ajzen (1991) TPB	**Shapero (1982) SEE**
Attitude Toward Behavior This construct (akin to expectancy) taps perceptions of the personal desirability of performing the behavior. This attitude depends on expectations and beliefs about personal impacts of outcomes resulting from the behavior. *Subjective Norms* Perceptions of what important people in respondents' lives think about performing a particular behavior. Included would be the individual's family expectations about the desirability of becoming a lawyer, doctor, or entrepreneur. *Perceived Behavioral Control* Perceived behavioral control, is compatible with Bandura's (1977, 1982) concept of perceived self efficacy which is concerned with judgments of how well one can execute courses of action required to deal with prospective situations.	*Perceived Desirability* Perceived desirability is the personal attractiveness of starting a business, including both intrapersonal and extra-personal impacts. The degree to which one finds the prospect of starting a business attractive. *Perceived Feasibility* Perceived feasibility is the degree to which one feels personally capable of starting a business. The degree to which one believes to be capable of starting a business. *Propensity to Act* The personal disposition to act on one's decisions. Depends on one's control perceptions, specifically the desire to gain control through taking action. Likelihood of taking action.

The literature review on intentional models reinforces the importance of attitudes in the formulation of entrepreneurial intentions, and consequently behavior. Krueger, Reilly and Carsrud (2000) comparison showed support for the theory of planned behavior, although not complete since the component of social norms was not found significant. Moreover, their analysis showed full support for Shapero's Model of Entrepreneurial Event. Others have also explained regional differences in entrepreneurial intentions, using models of intentional behavior and institutional theory, mainly through evaluation of socio-cultural factors that affect regional perceptions. For example, Liñán et al. 2011 found that social valuations of entrepreneurs were higher in the more developed regions (i.e. Catalonia). Also, the literature discussed in this section emphasizes the role of exogenous factors in shaping these perceptions and how these can be modified through appropriate social structures. Regardless of the terminology employed - Shapero's perceived feasibility and desirability or Ajzen's attitude toward behavior, subjective norms and perceived behavioral control, there is no doubt that behavior is determined by intentions while attitudes preclude intentions. According to Krueger and Carsrud (1993) models of planned behavior continue to have merit in the study of entrepreneurial behavior, particularly because its capacity to predict future behavior (usually explains 30 percent of future behavior).

Although the importance of intentions in predicting planned behaviors has been acknowledge and the determinants of intentions have been vastly examined empirically, there are issues that still need to be addressed: the transition from intentions to behavior. According to Krueger (1993) intentions refer to the specific target behavior of starting a business. However, the vision of how to achieve this goal and the details of the goal are formulated after identifying the intended goal. This in turn, could influence the outcome of the target behavior (starting or

abandoning the intended goal: starting the business). Moreover, the theories discussed in this section acknowledge that not every behavior is under volitional control, which puts forth the role of exogenous factors in the venture creation process. In this sense it is crucial to analyze the factors that influence the process by inhibiting (preventing) or facilitating actual behavior. As previously discussed, it is important to remember that intentions do not necessarily entail action, but a disposition or willingness towards a behavior; therefore the factors that influence the transition and activities to develop the business concept (phase 2), organization set-up (phase 3) and market exchanges (phase 4) depicted in the venture creation process (Figure 2) must be examined. Gartner (1985) suggested a framework that considers individual, environmental and organization characteristics. These were illustrated in Figure 1. In the next section we discuss the theoretical aspects when analyzing the gap between intentions and behavior, more specifically individual and environmental factors that could provide insights into the expected outcome of entrepreneurial intentions: entrepreneurial behavior.

2.3 From Intentions to Entrepreneurial Behavior

According to Sheeran (2002) several factors will determine how well intentions predict behavior including behavior type, intention type, properties of behavioral intentions, personality and cognitive variables. According to the author, one key determinant in the transition from intentions to behavior is whether the behavior being predicted is a single action or a goal (an outcome that can be achieved by performing a variety of single actions). Goal intentions can be defined as the instructions that people give themselves to perform particular behaviors or to achieve certain desired outcomes (Triandis, 1980). Intentions are likely to be superior predictors

of single actions than goals because goal intentions (outcomes such as building an enterprise) require multiple single actions, which in turn depend on several other factors. In this sense, the formulation of intentions is the first required step for goal attainment (firm birth), aspect already discussed in the previous section (Section 2.2).

Also Sheeran (2002) suggests that a person must have control over performing a behavior for the intention to perform that behavior be realized. The author suggests that factors such as knowledge, ability, resources, opportunity, availability, cooperation, and unexpected situations determine the amount of control a person possesses over performing the behavior. Based on the stages of the venture creation process in Figure 2, individuals must have control or at least perceived behavioral control in developing the business concept, setting up the organization and in conducting market exchanges. Although acknowledging that factors such as knowledge, ability and resources, among others is consistent with dimensions put forth by models of Planned Behavior, specifically with Ajzen's (1991) perceived behavioral control dimension and Shapero's (1982) feasibility perceptions, very little research has been conducted to address what factors determine the extent of consistency between intentions and behavior. In this sense, it is important to examine exogenous factors that impact the process, particularly when it was recognized (in previous sections) that most planned behaviors, such as entrepreneurship, are not under complete volitional control. This can only be achieved by examining factors that affect the consistency between intentions and behavior. For example, one could argue that although there is a disposition to conduct the behavior (intentions), it is not until entrepreneurs start actively conducting activities and transitioning through the stages in the venture creation process (Refer to Figure 3 in previous sections), that they will recognize whether or not he/she has control over

the process. Perceived behavioral control will be influenced by environmental and personal factors (i.e. availability of resources, support and experience, among others), and could affect the individuals' decision to continue with the formulated intention (stability of intentions). This in turn, could help explain why some authors indicate that very strong intentions do not necessarily lead to actual behavior (Triandis, 1967; Katz, 1989). Overall, the previous arguments suggest the need of considering not only temporal issues (Bird, 1991) but also factors which may precipitate (i.e. displacement events and propensity to act), facilitate and inhibit entrepreneurial behavior. Refer to Sheppard et al. 1988 for multiple construct measures.

As discussed in section 2.2 some behaviors may in fact meet the requirements posed by the Theory of Reasoned Action (behavior under complete volitional control), but the performance of most, particularly when considering goals such as starting a business, depend at least to some degree on such non-motivational factors as availability of requisite opportunities and resources (i.e. time, money, skills, cooperation of others; see Ajzen, 1985, for a discussion). Moreover, these factors represent people's actual control over the behavior. To the extent that a person has the required opportunities and resources, and intends to perform the behavior, he or she should succeed in doing so (Ajzen, 1991). However, whether a measure of perceived behavioral control can substitute for a measure of actual control depends on the accuracy of the perceptions. Perceived behavioral control may not be particularly realistic when a person has relatively little information about the behavior, when requirements or available resources have changed, or when new and unfamiliar elements have entered into the situation. Under those conditions, a measure of perceived behavioral control may add little to accuracy of behavioral

prediction. However, to the extent that perceived control is realistic, it can be used to predict the probability of a successful behavioral attempt (Ajzen, 1985).

Most studies based on the theory of planned behavior, rely on participants' perceived control, which are generally assumed to be reasonable reflections of actual control (Ajzen, 1991). For example, Krueger (1993) defines intentions as the target behavior of starting a business, when usually the plan of how to achieve the goal and specific details of the goal are not yet formulated. In this sense, intentional individuals (potential entrepreneurs) are setting a goal with very limited information. Moreover, considering the uncertainty underlying the process of venture creation, the conditions necessary to use perceive behavioral control as a measure representative of actual control may not be met. In this sense it is like recognizing that perceptions may prove wrong once embarked in the process. This in turn, may provide explanations to the gap between intentions and behavior, which according to Ajzen (1991) consistently explains 30 percent of behavior.

Katz's (1990) study of self-employment follow through strongly suggested that more people start ventures through unintentional process than through intentional processes. His findings indicate that only one third of individuals with self-employment intentions followed through. Carter, Gartner, and Reynolds (1996) found higher rates of intention-behavior start-ups. In their study, 48 percent of individuals with entrepreneurial intentions started a business. This finding was higher than those found from the general population, 3-8 percent (Reynolds and Miller, 1992). The fact that the most extensive study available on the subject indicates that there

is only about a 50 percent probability of start-up among persons with intentions suggests there is much more involved in the process (Chrisman, 1999).

Several authors emphasize the role of exogenous factors on behavior. These suggest that intentions frameworks offer a mechanism to assess hypothesize exogenous factors (such as resource availability and role models) and how they indirectly affect entrepreneurship through attitudes (Krueger, 1993). According to Krueger and Carsrud (1993) attitudes preclude intentions but derive from exogenous influences, including situational (i.e. employment status or informational cues from the environment) or personal (i.e. demographics and personality traits). For example, prior experiences and prior entrepreneurial exposure (described in terms of breadth and quality of the experience) influence intentions indirectly through attitude (social norm and perceived controllability). This in turn may reflect why entrepreneurship research that evaluates the impact of exogenous factors on entrepreneurial activity typically finds relatively small effects. In sum, the literature suggests that exogenous factors usually affect intentions and behavior indirectly through attitude changes, not directly (Ajzen, 1987, Bagozzi and Yi, 1989). These factors either drive attitudes or moderate the relationship between intentions and behaviors (facilitates or inhibit the realization of intentions).

While intentions are specific to the person and context, exogenous factors are generally personal (individual) or environmental (situational) variables. Therefore, intentional frameworks offer testable, theory driven models of how exogenous factors affect attitudes, intentions and behavior. Some examples may include the following: (1) role models will affect entrepreneurial intentions if they impact attitudes such as perceived behavioral control; (2) exogenous factors

such as unemployment, divorce and other external events may operate indirectly through Shapero's credibility dimension (feasibility and desirability); (3) precipitating events (displacement) will trigger actual intended behavior; (4) availability of resources (analogous to actual behavioral control) will moderate the intention-behavior relationship.

Martin (1985) classified exogenous factors as follows: (1) precipitating events – including job frustration, lay-off or dismissal; (2) family – supportive spouse and demographics such as single, widowed, divorced; (3) financial support – personal/family capital, friends/private capital, financial institutions, suppliers credit; and (4) supportive environment – education/cultural, accounting/legal, government advisory services, labor, transportation and entrepreneurial climate, among others. Other factors identified include: knowledge, ability, skills, personality traits, prior entrepreneurial experience and exposure, role models, resources, opportunity, time, cooperation and unexpected situations.

According to Shane and Venkataraman (2000) not all potential entrepreneurs will exploit opportunities, as people will consider opportunity costs of pursuing alternative activities in making the decision to exploit opportunities. Using data from a national study of a Small Business Development Center, Chrisman (1999) tested two hypotheses derived from resource-based theory, which consider outsider knowledge and resources in the environment as moderators of the intentions-behavior relation. The results indicate that between 60 and 78 percent of individuals with entrepreneurial intentions who received outsider assistance started a business as compared to 48 percent of the general population who indicated intent. Also,

regional differences were observed in start-up propensities, which highlight the role of resource-based theories in new venture success (emergence).

The literature on nascent entrepreneurship has been able to identify some factors that influence entrepreneurial outcomes (starting a business). Studies in this area have mainly compared nascent entrepreneurs with a control group from the general population. Few studies have been able to compare outcomes from nascent entrepreneurs. This has been due mainly for the difficulty of obtaining samples, as stated in previous sections. For example, Lia and Welsch (2005) found no significant differences in various dimensions of social capital between nascent entrepreneurs and the general public. Their study compared nascent entrepreneurs with the general public using data from the Panel Study of Entrepreneurial Dynamics. The authors did not compare nascent entrepreneurs and their outcomes. However, in 2003, Lia also analyzed the impact of social capital on entrepreneurial growth aspirations and how these compare in technology and non-technology based nascent entrepreneurs. The findings demonstrate that social capital play a positive significant role in affecting entrepreneurial aspirations for both technology and non-technology nascent entrepreneurs. However, their findings show that technology based entrepreneurs benefit more from the relational embeddedness dimension, while non-technology entrepreneurs benefit more from the structural embeddedness dimension. Human capital failed to demonstrate significant influence, contrary to other studies (i.e. Kolvereid, 1992).

Aldrich and Zimmer (1986) showed that social ties to resource providers enhance the probability of opportunity exploitations. Moreover, Cooper, Woo, and Dunkelberg (1989) found

that people are more likely to exploit opportunities if they have developed useful information from previous employment, measure of human capital. Carroll and Mosakowski (1987) found that prior entrepreneurial experience, measure of human capital, increases the probability of exploitation of entrepreneurial opportunities because learning reduces its cost. Cooper and Dunkelberg (1987) conducted a survey of 890 entrepreneurs and found that 50% had at least one parent or guardian who was self-employed, 36% had at least a college degree while 15% had college degree plus advance studies.

Other factors in the individual's personal environment that are important in the decision-making process are the social and entrepreneurial networks that provide access to support and expertise (Reynolds, 1992) as well as educational background, measure of human capital (Ronstadt, 1985). Finally, Hansen (1995) found strong relationships between the size, inter-connectivity, and frequency of interactions of an aspiring entrepreneur's network and subsequent organizational growth. A considerable body of literature demonstrates that situational variables such as location explain variations in start-up rates. Some of the reasons are: differences in support mechanisms (Barkham, 1992), characteristics of the labor force (Bull and Winter, 1991) and, availability of venture capital (Bygrave and Timmons, 1992) among others.

Davidsson and Honig (2003) examined nascent entrepreneurship by comparing individuals engaged in nascent activities with a control group. The authors found that exogenous factors such as social capital and human capital have an effect on entrepreneurship. However, social and human capital factors predict entry into nascent entrepreneurship. However, when examining the outcome of entrepreneurial activities (i.e. first sale or profit) only one aspect of

social capital (being member of a business network) had a significant positive effect. Similarly, human capital predicted entry into nascent entrepreneurship, but the hypothesis that related human capital to the final outcome of starting a viable business was not supported. In this sense, the study supports human capital in predicting entry into nascent entrepreneurship but only weakly in entrepreneurial outcomes. These findings suggest a stronger impact of human capital on the decision to start a business (i.e. feasibility and desirability perceptions).

Liao, Welsch and Tan (2005) analyzed venture gestation paths of nascent entrepreneurs using data mining techniques. Their findings showed statistical differences between nascent entrepreneurs who have successfully started the business and those who have not. They found that individuals who successfully started a business engaged in more gestation activities than those that did not. Activities such as investing money, defining market opportunities, purchasing raw materials, developing plans and models and starting marketing/promotional efforts were directly associated to first sale, but these relations were weak. The authors also found that entrepreneurship is a time-based process in which entrepreneurs engage in a variety of paths and activities. No indication of developmental stages was found. They employed data from the Panel Study of Entrepreneurial Dynamics, based on an initial sample collected during 1998-1999.

Reynolds et al. (2004) also used data from the Panel Study of Entrepreneurial Dynamics to analyze the prevalence of nascent entrepreneurs in the United States and reported by gender and ethnicity using variables such as age, education, income and context. They used screening interviews completed between July 1998 and January 2000. Their findings support the positive

impact of education (human capital variable) on nascent entrepreneurship. Moreover, indicators of financial capital such as income showed significant differences among groups, as those with higher incomes were more likely to be involved in nascent entrepreneurship. Nonetheless, those not involved in the labor force (i.e. unemployed) were less likely to start-up businesses. These last finding poses interesting questions, since theoretical assumptions such as Shapero's (1982) precipitating event suggest unemployment as a critical variable to catalyze the decision to start a business. This is similar to Reynolds (1997) finding who indicated that unemployment did not have any influence on nascent entrepreneurship. Although variables concerning displacement events (precipitating events) as defined by Shapero (1982) have not shown significant relationships in entrepreneurship, there has been lack of empirical studies addressing these. Moreover, given that a significant amount of government funds are directed towards entrepreneurial programs for this population in the context of study (Puerto Rico), this study addresses the relationship of this variable on entrepreneurial intentions and behavior.

Gatewood, Shaver and Gartner (1995) examined activities of nascent entrepreneurship. Results show that individuals who focus on tangible activities for setting up of the business distinguish those who started from those who did not. However, the authors suggest focusing on details derived from the attribution model, including perceptions of skills, abilities, difficulty of the task, luck and the value of the opportunity will likely lead to a more comprehensive conception of the factors that influence venture creation. Similarly, Carter, Gartner and Reynolds (1996) analyzed venture start-up activities of nascent entrepreneurs, defined as individuals who were taking steps to found a new business. Their analysis suggests that individuals who succeed starting a business differentiate from other who did not succeeded in the

activities undertaken. According to the authors, the started group was aggressive in making their business real. They looked for facilities and equipment; sought and got financial support; formed a legal entity; organized a team; and acted with greater levels of intensity. Interestingly, individuals who abandoned the startup effort were similar to the started group in terms of intensity of start-up activities. Nonetheless, they put more thought in developing plans and prototypes, which according to the authors suggest they discover their initial ideas will not lead to success. In this study looking and obtaining financial support characterized the group that succeeded in starting a business.

Evans and Leighton (1991) suggest that the exploitation of opportunities is more common when people have greater financial capital since the individual already posses a critical resource. The task of seeking and obtaining financial support has already been accomplished (the entrepreneur does not have to search for finance since he/she already have it). However, Reynolds (1997) analyzed factors that lead individuals from the general population to start firms, including financial indicators. His analysis showed that household income and availability of financial resources play a minor role in the decision to initiate a new firm start-up. Moreover, the financial reserves variable was not consistent between groups. Given this result, it is no wonder that the empirical support for liquidity effects have been modest (Reynolds, 1997).

To our knowledge, the most recent study addressing factors from nascent entrepreneurship to successful start-up (entrepreneurial behavior) is the study conducted by Gelderen et al. (2005). Their study analyzed variables that influence success in a business start-up. Due to the lack of empirical research addressing outcomes in nascent entrepreneurship, the

authors explored the validity of multiple models in the field. Mainly, they analyzed variables using the four main approaches suggested by Gartner's (1985) framework: individual, environment, process and organization. More specifically, they analyzed human capital variables, motivation variables, financial variables, environmental conditions variables, and process variables. The logistic results showed that industry experience and exposure to guidance and advice agencies was positively related to successful start-up. Also, their findings showed that nascent entrepreneurs who intend to use more financial capital have lower probabilities to get their business running. Change in required start-up capital along the process also has a significant effect, which according to the authors, lowering financial capital requirements increase chances of getting started.

Based on the premise that exogenous factors influence intentions and behavior by changing attitudes or moderating the intention-behavior relationship (by precipitating, facilitating or inhibiting behavior), Krueger and Carsrud (1993) suggest to examine which externality plausibly influences each attitude. Similarly, suggest examining exogenous factors that plausibly facilitate or inhibit how intentions are realize, and provide as example testing Shapero's precipitating event or Triandi's resource availability as a moderator of intentions-behavior links. These exogenous factors will be assed using categories concerning personal and situational variables as distinguished in other studies (Ajzen, 1991; Krueger, 1993 and Krueger and Carsrud, 1993). Based on the previous discussion exogenous factors - both personal and environmental (situational) exert influence on attitudes that preclude intentions, and on entrepreneurial behavior once intentions have been formed. However, it is important to notice that most studies have been explorations that concentrate on activities leading to successful entrepreneurial outcomes

(starting the business). However by examining activities conducted by nascent entrepreneurs we are able to identify personal and exogenous factors that play a role in starting a business.

2.4 A Framework for Examining Exogenous Factors

The previous sections emphasized the role of exogenous factors on venture creation process. More specifically, section 2.2 examined the role of exogenous factors on the formulation of entrepreneurial intentions and section 2.3 addresses the literature regarding the potential role of exogenous factors on entrepreneurial behavior. In the literature review resources emerge as significant indicators of actual control during the venture process. As noted earlier, prediction of behavior from perceived behavioral control should improve to the extent that perceptions of behavioral control realistically reflect actual control (Sheeran, 2002). In this sense we agree with Ajzen (1985) who postulates that time, the introduction of new information, and the confidence with which intentions are held constitute factors that are associated with changes in intentions. Therefore, intentions may change or not predict behavior because, as time elapses, individuals are more likely to be exposed to new information and thus change beliefs and intention. Moreover, the challenges posed in the entrepreneurial process will make individuals realize they have less actual control than previously perceived. In this sense, several factors outside of individuals control will facilitate or inhibit the operation of entrepreneurial intentions (entrepreneurial behavior). These factors will in fact moderate the intention-behavior relationship, as well as initial perceptions. This is analogous to confirming and disconfirming initial perceptions and intentions, which help nascent entrepreneurs determine whether to continue or abandon the goal (starting a business). In this section we will discuss a framework

for analyzing these factors through interplay of the Resource Base View and Institutional Theory.

2.4.1 Interplay of Resource Based View and Institutional Theory

In her classic book Edith Penrose (1959) introduced the resource-based view of the firm. The firm was defined as a collection of productive resources, including tangible resources like plant, equipment, land, natural resources, raw materials, semi-finished goods, waste products, and by-products; and other more intangible resources such as labor, clerical staff, administrative staff, financial staff, legal staff, technical staff, and finally, managerial staff. Penrose (1959) also introduced the concept of entrepreneurial resource referring to entrepreneurial services for the firm. The key dimensions for entrepreneurial services are entrepreneurial versatility, fund-raising ingenuity, entrepreneurial ambition, and entrepreneurial judgment. Entrepreneurial versatility encompasses different functions that an entrepreneur has to master. Fund-raising ingenuity refers to entrepreneur's ability to attract financial resources and raise capital for the firm. Entrepreneurial judgment involves a combination of imagination, self-confidence, and other personal qualities that enable entrepreneur's decisions.

Chrisman (1999) employed the resource based view of the firm as a basis for identifying exogenous variables that are likely to influence the relationship between intentions and entrepreneurial behavior. Resource based theory suggests that exploited assets that are valuable, rare, and imperfectly imitable will lead to sustainable competitive advantage and that sustainable competitive advantage is necessary for a firm to earn above-normal returns in the long-term (Barney 1986, 1991, 1997; Conner 1991; Wernerfelt 1984). According to Chrisman (1999)

venture creation may be considered a special case of resource-based theory because a new venture has few if any stocks of resources other than the knowledge of the entrepreneur. This knowledge is in turn used in the acquisition, development, and application of other resources that will lead to competitive advantage and superior performance. This in turn is congruent with Brush et al. (2001) who assert that since an emerging venture lacks administrative history, has no loyal customer base, cannot point to its reputation for performance, and has no shared experience, its strategic resource decisions are based on judgments using only current information.

Similarly, Alvarez and Busenitz (2001) argue that the resource based view can theoretically inform and extend current research on entrepreneurship. They suggest that it is through the entrepreneurial process of cognition, discovery, understanding market opportunities, and coordinated knowledge that inputs become heterogeneous outputs. The authors also suggest that social complexity is central to entrepreneurship as it may be essential to the exploitation of complex technologies and unique to certain types of entrepreneurs and hence difficult to imitate.

Entrepreneurship studies focused on start-up and growth activities acknowledge the importance of resources such as money, people, and information that must be acquired to launch a venture. The entrepreneur is the primary resource, and his or her expectations about the future of the venture are central to its strategic direction. Venture development is described as sequential, where growth transitions are distinguished by challenges or particular management tasks. Prescriptions for meeting these challenges include seeking advice from a network of contacts, assessing decision characteristics of equity providers (with particular emphasis on the

need for positive cash flow), delegating responsibilities, developing controls, and setting policies. Yet the process of building an initial resource base from scratch is a complex task that is rarely addressed in entrepreneurship literature. This gap suggests that building a resource base requires more attention. Constructing an initial resource base in a new venture requires that resources be identified, assembled, and acquired to meet a perceived opportunity.

Brush et al. (2001) study explored resources' role in new venture creation through case studies. According to the authors, the resource choices made by the entrepreneurs provide insights into patterns or pathways of resource building. In their analysis they thought to determine what resource choices are made and in what order. The authors sorted the resources into six types: human, social, financial, physical, technology, and organizational. Each resource type has different dimensions along a scale of complexity ranging from the simple to the complex. Simple resources are tangible, discrete, and property-based, whereas complex resources are intangible, systemic, and knowledge-based.

Overall, the resource based view plays a significant role in entrepreneurial research particularly since entrepreneurship is often described as acquiring, combining, and assembling critical resources, which make up the firm (i.e. Stevenson and Gumbert, 1985; Katz and Gartner, 1988; Bergmann et al., 2001; Kelley and Rice, 2001). Because of this, several studies have focused on resources' role in the entrepreneurial process. Moreover, other studies assess the concept of resource availability in the context of new ventures (i.e. Bruno and Tyebjee, 1982; Westhead et al., 2001). Bruno and Tyebjee (1982) indicate that the more munificent an environment, the greater the access a new firm will have to its resources. The put forth the role

of environments that promote entrepreneurship. In the next paragraphs, we combine concepts from the Institutional Theory with those proposed by the Resource Base View in order to develop a complete framework to examine the role of exogenous factors during the venture creation process.

According to Vesper (1990) entrepreneurial environments promote opportunity identification and exploitation; stimulate propensity to start businesses; and provide the inputs to develop knowledge, abilities and skills necessary to operate entrepreneurial intentions. Therefore, the role of the environment is very diverse as it can influence intrinsic and extrinsic factors of the entrepreneur. Gnyawaly and Fogel (1994) integrate the environment to each dimension of the venture process proposed by Vesper (1990). According to the authors, macroeconomic policies and procedures such as trading policies, entry barriers, business regulations, among others, can significantly affect opportunity exploitation. Moreover, socioeconomic conditions (i.e. attitudes towards entrepreneurship, social norms and values), and assistance programs (i.e. financial and non-financial) can stimulate entrepreneurial behaviors by impacting individuals' propensity (motivation and attitudes) and competencies (know what and know how).

The acknowledged role of entrepreneurial environments has led to an increased interest in assessing the institutions that provide the "rules of the game" (North, 1990). For example, under this view the market becomes an institution where the rules of the game are defined and set. Contrary to other classical economic theories, the institutional school has given great importance to the socio-cultural context where economic decisions are made. This approach observes the

economy as a group of entities in evolution, which molds and articulates the new alternatives for resource utilization. According to North (1990), institutions include any form of constraint that human beings devised to shape human interaction. These can be either formal (e.g. political and economic rules, among others), or informal (e.g. codes of conduct, attitudes, values, norms of behavior and culture). The decision to act entrepreneurial (i.e. create a business) will be conditioned by external factors (institutional framework), which in turn could help explain the variability of these practices in different geographical spaces.

Assuming this perspective suggests several policy implications and situates institutions at the core of economic development. More importantly it suggests the importance of analyzing how institutions influence the venture creation process, mainly because it could suggest adjustments to the entrepreneurial environment structure in order to stimulate entrepreneurship. Institutions can affect all stages of the venture creation process, including perceptions, attitudes, intentions and behavior. Also, an entrepreneurial infrastructure will depend on the context. For example, governments (formal institution) in countries with low propensity (negative attitudes towards entrepreneurship) and high ability must concentrate their efforts in crafting policies and programs that impact the socioeconomic dimension. The mission will be to introduce entrepreneurial values into the region (i.e. positive attitudes towards the entrepreneurial career). On the other hand, governments in countries with high propensity (positive attitudes toward entrepreneurship) and low ability must focus on developing programs to enhance entrepreneurial capabilities. Creating financial assistance programs in countries with low propensity and low ability would be too risky.

In sum, a clear argument can be made that developing environments that foster entrepreneurship require systematic attention of the elements at play. This in fact is observed by the growing literature in the field that employs institutional perspective and regional panel data to assess systematically environmental variations among regions (Refer to Alvarez and Urbano, 2011 for an extended review). Moreover, a considerable body of literature demonstrates context differences and variation in start-up rates. Some of the reasons are: differences in support mechanisms (Barkham, 1992), characteristics of the labor force (Bull and Winter, 1991) and, availability of venture capital (Bygrave and Timmons, 1992) and socio-cultural factors (Thornton et al., 2011). However, Krueger, Reilly and Carsrud (2000) indicate that to encourage economic development in the form of new businesses we must increase perceptions (feasibility and desirability). Policy initiatives will increase business formation if these positively influence attitudes, intentions and consequently behavior. Institutional Theory in combination with Resource Based View provides a framework to analyze the role of exogenous factors during the venture creation process. These theories allow us to explore the resources that influence attitudes and entrepreneurial behavior, and explore how institutions in the region facilitate provision of the required resources for entrepreneurial behavior. Because of this, our study focuses on the interplay between Resource Based View and Institutional Theory as the basis for examining exogenous variables that influence the attitudes and the latter intention-behavior relationship.

2.4.2 Personal Exogenous Factors: Human, Social and Financial Capital

According to Chrisman (1999) venture creation may be considered a special case of Resource Based Theory because a new venture has few if any stocks of resources other than the knowledge of the entrepreneur. This knowledge will be used in the acquisition, development and application of other resources. In this sense, entrepreneurs themselves are a key resource during venture creation, more specifically their knowledge. Davidsson and Honig (2003) argue that if profitable opportunities for economic activity exist, individuals with more or higher quality human capital should be better at perceiving (opportunity identification), and once engaged in the process, such individuals should also have superior ability in successfully exploiting them. For example, individuals will be more capable of transitioning and completing the business concept (phase 2) and setting up the business (phase 3) depicted in Figure 2 than those with lower human capital. When combining perspectives of Institutional Theory, the resource of knowledge can only be obtained if the institutions in the environment have the capacity to provide this to the potential entrepreneur (i.e. availability of universities, entrepreneurial training, and mentorship programs, among others). For example, Shane (2003) reviewed the literature on several individual social and psychological factors that have been shown to influence a person's likelihood of exploiting an opportunity. Three seem particularly relevant to the focus of this study: social connections, past work-related experiences and the psychological factor of self-efficacy.

Formal education is one component of human capital that assists in the accumulation of explicit knowledge that provides skills useful to entrepreneurs (Davidsson and Honig, 2003). Nonetheless, human capital is not exclusively acquired through formal education. Becker (1964) suggests that broad labor market experience and vocationally oriented experience increases

human capital. Shane (2003) review individual factors positively influencing entrepreneurial behavior. The author noted the impact of past experience on entrepreneuring. Specifically, he found that general business, functional, industry and start-up experiences, all individually, predicted self-employment. Bandura (1986) recognized that direct experience, what he called mastery experience, was a powerful learning method, which influences feasibility perceptions (perceived self-efficacy). In this sense both tacit and explicit knowledge acquired from both formal and informal sources of education can influence the outcomes of entrepreneurship (firm emergence). Moreover, models of intentional behavior (e.g. Ajzen, 1991; Shapero, 1982) suggest that human capital, expressed both as tacit or explicit knowledge influence attitudes (social norms, perceive behavioral control and attractiveness of entrepreneurial career). Because of the above we propose the following hypotheses:

H_1: Human capital is positively associated to attitudes towards venture creation.

H_2: The effect of human capital will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort.

Empirical examinations establish the role of human capital on entrepreneurship. Nonetheless, most studies that employ theories of planned behavior concentrate on the role of human capital in the formulation of entrepreneurial intentions. For example, Caroll and Mosakowski (1987) found that prior entrepreneurial experience, measure of human capital, increases the probability of exploitation of entrepreneurial opportunities because learning reduces its cost. Cooper and Dunkelberg (1987) conducted a survey of 890 entrepreneurs and

found that 36 percent had at least a college degree while 15 percent had college degree plus advance studies. Dunkelberg (1989) found that people are more likely to exploit opportunities if they have developed useful information for entrepreneurship from previous employment, measure of human capital.

Krueger (1993) found that exogenous factors such as prior exposure to entrepreneurial activity influence attitudes. Using path analysis the author found that human capital variables where related to feasibility and desirability perceptions. More specifically, quality of experience was strongly related to feasibility perceptions, while positiveness of experiences was associated to perceived feasibility. Overall, the study found that a person's prior exposure to entrepreneurship had a positive relationship with perceived desirability and feasibility of starting a business. These two were found positively related to entrepreneurial intentions. This is contrary to previous findings that failed to demonstrate the influence of human capital on entrepreneurship (i.e. Kolvereid, 1992). More recently, Davidsson and Honig (2003) demonstrated that human capital predicts entry into nascent entrepreneurship but weakly explains entrepreneurial outcomes. These findings suggest a stronger impact of human capital on the decision to start a business (i.e. feasibility and desirability perceptions) than on entrepreneurial behavior.

Using data from the Panel Study of Entrepreneurship Dynamics, Reynolds et al. (2004) analyzed the prevalence of nascent entrepreneurs in the United States and reported by gender and ethnicity using variables such as age, education, income and context. Their findings support the positive impact of education (human capital variable) on nascent entrepreneurship. Cooper,

Gimeno-Gascon and Woo (1994) analyzed the performance of new ventures based on indicators of human capital. Performance outcomes considered failure, marginal survival and high growth. They employed 4 categories of human capital: general human capital, management know-how, management-specific skills and knowledge. The findings suggest that human capital influence survival and growth. Management know-how had limited impact if compared with other measures. Industry know-how contributed to survival.

The most recent study addressing factors from nascent entrepreneurship to successful start-up is the study conducted by Gelderen et al. (2005). The study analyzed variables that influence success in a business start-up. Due to the lack of empirical research addressing outcomes in nascent entrepreneurship, the authors explored the validity of multiple models in the field. Using Gartner's (1985) framework consisting of individual, environment, process and organization they analyzed human capital variables, motivational variables, financial variables, environmental conditions variables, and process variables. The logistic regression results showed that industry experience and exposure to guidance and advice from agencies was positively related to successful start-up.

According to Chrisman (1999) knowledge can be possess by the entrepreneur or by other potential contributor to the emerging organization. Therefore, interactions of individuals can represent a resource valuable to new ventures (Carter et al., 1996). Social capital theory refers to the ability of actors to extract benefits form their social structures, networks and memberships (Lin et al., 1981). For example, Krueger and Carsrud (1993) suggest that outside advisors can act as facilitators, trainers and mentors. Brockhaus and Horwitz (1986) indicate that

entrepreneurs tend to have role models of some kind. According to Krueger (1993) early exposure to family business appears to influence attitudes and intentions. The existence of role models (i.e. entrepreneurial parents) has been associated to entrepreneurship but its impact has had different interpretations. One interpretation suggests that having entrepreneurial parents influence entrepreneurial activity by setting an example that increases attractiveness of entrepreneurial career, and therefore intentions (decision to start). Another view puts forth that having entrepreneurial parents provides the individual with information otherwise not available (i.e. knowledge about steps required to set up a business). This information will not only facilitate opportunity identification but also exploitation (firm emergence).

Emerson (1972) defined social capital in terms of social exchange. This definition suggest that exchange effects may range from provision of concrete resources, such as a loan provided by family and friends, or other more intangible resources, such as information. In this sense, social capital can be a valuable resource for entrepreneurs, since social capital provides networks that facilitate discovery, identification, collection and allocation of scarce resources (Birley, 1985; Greene and Brown, 1997). Also, social capital may assist in entrepreneurial exploitation by providing and diffusing critical information and other essential resources (Davidsson and Honig, 2003). For example, Thorton et al. (2011) argue that social capital is a pivotal asset affecting the probability of funding for new ventures and their long term success. Because of this, the authors state that a key role of governments is to assist individuals to build their social capital by forging links between inventors, potential entrepreneurs, venture capitalists and other stakeholders that control start-up resources. Because of this we proposed the following:

H_3: Individual social capital is positively associated to attitudes towards venture creation.

H_4: The effect of social capital will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort.

According to Reynolds (1992) social and entrepreneurial networks that provide access to support and expertise are important factors in the entrepreneurial process. This is analogous to Shane's (2003) findings that suggest social connections (networks) are important predictors of entrepreneurial activity since these provide access to resources and information. Empirical findings show the impact of diverse social capital variables on entrepreneurship. For example, the existence of entrepreneurial role models has been found to predict, although weakly, future entrepreneurial behavior (Brockhous and Horwitz, 1986; Carsrud et al. 1987; Scott and Twomey, 1988). Cooper and Dunkelberg (1987) conducted a survey of 890 entrepreneurs and found that 50 percent had at least one parent or guardian who was self-employed. However, the role model's subjective impact is a strong predictor. In this sense, role models affect entrepreneurial intentions, but only if they affect attitudes (Krueger, 1993; Scherer et al. 1989). Similarly, Cooper, Gimeno-Gascon and Woo (1994) found that having parents who owned a business contributed to survival of new ventures but did not contribute to growth. Also, the number of partners contributed to growth but not survival of new ventures. The use of professional advisor did not contributed to growth or survival of new ventures.

Using data from a Small Business Development Center, Chrisman (1999) tested two hypotheses derived from resource-based theory, which consider outsider knowledge and resources in the environment as moderators of the intentions-behavior relation. The results indicate that between 60 and 78 percent of individuals with entrepreneurial intent who received outsider assistance started a business as compared to 48 percent of the general population who indicated intent. Also, regional differences were observed in start-up propensities, which highlight the role of the environment as a resource pool for new venture success (emergence). Similarly, Aldrich and Zimmer (1986) showed that social ties to resource providers enhance the probability of opportunity exploitations. This is similar to Hansen's (1995) findings that showed strong relationships between the size, inter-connectivity, and frequency of interactions of an aspiring entrepreneur's network and subsequent organizational growth.

Lia (2003) analyzed the impact of social capital on entrepreneurial growth aspirations and how these compare in technology and non-technology based nascent entrepreneurs. The findings demonstrate that social capital play a positive significant role in affecting entrepreneurial aspirations for both technology and non-technology nascent entrepreneurs. However, their findings show that technology based entrepreneurs benefit more from the relational embeddedness dimension, while non-technology entrepreneurs benefit more from the structural embeddedness dimension.

In 2005, Lia and Welsch analyzed multiple dimensions of social capital. They found no significant differences between nascent entrepreneurs and the general public in the dimensions of social capital. Their study compared nascent entrepreneurs with the general public using data

from the Panel Study of Entrepreneurial Dynamics. The authors did not compare nascent entrepreneurs and their outcomes. However, Davidsson and Honig (2003) examined nascent entrepreneurship by comparing individuals engaged in nascent activities with a control group. Their findings show that social capital was a strong predictor for nascent entrepreneurs when compared with the control group drawn from the general population. Moreover, social capital was also positively associated to advancements through the start-up process. However, when evaluating outcomes of the start-up process, such as first sale and profitability, the findings showed a significant positive effect but only in one aspect of social capital, business networks.

Another critical resource during venture creation concerns financial aspects. Although the importance of finance institutions during the start-up process is well recognized, lending to new ventures remains a complex and uncertain activity. For example, it is difficult for banks to obtain detailed information from new and small firms since the financial reports are inexistent and in the case of small firms these are mainly for tax purposes (Bhattacharya and Thakor, 1993; Diamond, 1984). This in turn produces problems in accessing financial resources. Moreover, traditional lending to new and small ventures has relied on assessing business ventures on an individual basis; managed via man, in a less efficient, less effective and subjective manner (Tsaih, et al., 2004), which increases the costs of accessing financial resources. Because of this, we argue that nascent entrepreneur's financial position such as income, financial independence, among others can influence successful entrepreneurial behavior (Bird, 1993; Ghosh, 1993; Krueger and Brazeal, 1994). Moreover, nascent entrepreneurs' financial capital will influence his attitudes towards entrepreneurship, as suggested by the literature of planned behaviors,

mainly through perceived behavioral control, since possessing financial capital reflects actual control of a specific resource, in this case financial.

According to Bygrave (1992) financial capital resources include funds from any sources used to start, operate and grow a business. In this view, financial resources are not necessary appropriated by the entrepreneurs but also available in the environment. Given that in this section we focused on personal factors that influence firm emergence, we consider financial resources from the entrepreneur. In the next section, which considers situational factors we will explore the availability of financial resources in the environment. Because of the above we proposed the following hypothesis:

H_5: *Individual financial capital is positively associated to attitudes towards venture creation.*

H_6: *The effect of financial capital will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort.*

In 1994, Cooper, Gimeno-Gascon and Woo (1994) analyzed the role of initial conditions in new ventures. They examined the role of initial financial capital on the ventures' marginal survival and growth. The findings of the study demonstrated that financial capital plays a significant and positive role on venture survival and growth. Reynolds et al. (2004) analyzed financial indicators when examining nascent entrepreneurs in the United States. Indicators of

financial capital such as income showed significant differences among groups. Individuals with higher incomes were more likely to be involved in nascent entrepreneurship.

In a previous study, Carter, Gartner and Reynolds (1996) analyzed venture start-up activities of nascent entrepreneurs, defined as individuals who were taking steps to found a new business. Their analysis suggests that individuals who succeed starting a business differentiate from other who did not in the activities undertaken. More specifically, the started group was aggressive in making their business real. They looked for facilities and equipment; sought and got financial support; formed a legal entity; organized a team; and acted with greater levels of intensity. Interestingly, individuals who abandoned the start-up effort were similar to the started group in terms of intensity of start-up activities. Nonetheless, they put more thought in developing plans and prototypes, which according to the authors suggest they discover their initial ideas will not lead to success. In this study looking and obtaining financial support characterized the group that succeeded in starting a business. This is indicative of why Evans and Leighton (1991) suggest that the exploitation of opportunities is more common when people have greater financial capital as the individual already posses this critical resource. The task of seeking and obtaining financial support has already been accomplished (the entrepreneur does not have to search for finance since he/she already possesses).

In 1997, Reynolds also analyzed factors that lead individuals from the general population to start firms, including financial indicators. His analysis showed that household income and availability of financial resources play a minor role in the decision to initiate a new firm start-up. However, the financial reserves variable was not consistent between groups. Given this result, it

is no wonder that the empirical support for liquidity effects have been modest (Reynolds, 1997). More recently, Gelderen et al. (2005) findings showed that nascent entrepreneurs who intend to use more financial capital have lower probabilities to get their business running. Change in required start-up capital along the process also has a significant effect, which according to the authors, lowering financial capital requirements increase chances of getting started.

Other studies on nascent entrepreneurship focused on activities that distinguish successful start-up. Liao, Welsch and Tan (2005) analyzed venture gestation paths of nascent entrepreneurs using data mining techniques. Their findings showed statistical differences between nascent entrepreneurs who have successfully started the business and those who have not. They found that individuals who successfully started a business engaged in more gestation activities than those that did not. Activities such as investing money, defining market opportunities, purchasing raw materials, developing plans and models and starting marketing/promotional efforts were directly associated to first sale, but this relations were weak. The authors also found that entrepreneurship is a time-based process in which entrepreneurs various paths and activities. No indication of developmental stages was found. They employed data from the Panel Study of Entrepreneurial Dynamics.

On a similar note, Gatewood, Shaver and Gartner (1995) examined activities of nascent entrepreneurship. Results show that individuals who focus on tangible activities for setting up of the business distinguish those who started from those who did not. However, the authors suggest focusing on details derived from the attribution model, including perceptions of skills, abilities, difficulty of the task, luck and the value of the opportunity will likely lead to a more

comprehensive conception of the factors that influence venture creation. Overall, these studies suggest the importance of resources in order to complete activities associated to successful start-ups. For example, finding that investing money and acquiring raw materials suggest the importance role of initial financial capital. Also, the emphasis on skills, abilities and perceptions on how difficult or easy is the tasks at hand suggest the importance of human capital in entrepreneurial behavior.

In sum, resources play a significant role in entrepreneurial research particularly since entrepreneurship is often described as acquiring, combining, and assembling critical resources, which make up the firm (Stevenson and Gumbert, 1985; Katz and Gartner, 1988; Bergmann et al., 2001; Kelley and Rice, 2001). Because of this several studies have focused on the role of resources in the entrepreneurial process. However, examining the role of resources on venture creation puts forth the impact of the environment (situation). Once again, the interplay between resource theories and the environment is best described by Bruno and Tyebjee's (1982) statement: *the more munificent an environment, the greater the access a new firm will have to its resources.* In the next section we discuss the role of the environment (situation) in venture creation.

2.4.3 Situational Exogenous Factors: The Impact of the Environment

According to Krueger and Carsrud (1993) exogenous factors are typically either person or situation variables. In the previous section we discussed exogenous factors that affect the person by means of the Resource Based View. In this sense, the previous section highlighted the

importance of resources inherent to the nascent entrepreneur. In this section we examine situational exogenous factors from the environment that affect firm emergence, namely through attitude changes or by moderating the intention-behavior relationship. The discussion relies on the interplay between Resource Based Theory and Institutional Theory, as resources are also embedded in the environment. These exogenous factors include: inhibiting or facilitating conditions and factors precipitating events.

Studies on entrepreneurial environments highlight the role of institutional agents and munificent environments in stimulating entrepreneurial activity (e.g. Bruno and Tyebjee, 1982; El-Namaki, 1988; Gartner, 1985; Gnyawali and Fogel, 1994). One of the theories in the field of entrepreneurship that stresses the significance of entrepreneurial environments is the institutional theory. This theory promoted interest in assessing the institutions that provide the "rules of the game" (North, 1991). Under this view the market becomes an institution where the rules of the game are defined and set. According to North (1991) institutions include any form of constraint that human being devises to shape human interaction and these directly influence entrepreneurial intentions and consequent behavior. These can be either formal (e.g. governmental policies, support programs, availability and access to credit, among others) or informal (i.e. codes of conduct, attitudes, values, norms of behavior and culture). According to Alvarez et al. (2011) both informal (cultural and social norms, perception of opportunities to start-up and entrepreneur social image) and formal factors (intellectual property rights) influence entrepreneurship, but the informal are more determinant than the formal. Overall, when considering the field of entrepreneurship, institutions represent the set of rules that articulate and organize the economic, social and political interactions between individuals and social groups, with consequences for

business activity and economic development (Veciana and Urbano, 2008). In this sense, the decision to act entrepreneurial (i.e. create a business) will be conditioned by external and environmental factors, therefore the institutional framework will influence entrepreneurial activities. According to Manolova, Eunni and Gyoshev (2008) the institutional environment exerts a powerful influence not only on entrepreneurial entry rates, but also on the ensuing trajectories of entrepreneurial initiatives. For new ventures, the institutional environment defines, creates, and limits entrepreneurial opportunities, and thus affects the speed and scope of entrepreneurial entry rates (Aldrich, 1990; Gnyawali & Fogel, 1994; Hwang & Powell, 2005).

According to Bartholomew (1997) national institutional patterns including access to research and educational institutions; access to sources of financing; and availability of pools of educated labor, help determine the manner in which innovation emerges within a country. In this sense, differences in national institutions may also bring about different levels of entrepreneurial activity across countries. Thornton et al. (2011) argue that societies are endowed by nature with different physical environments; hence members of society must adopt environmentally relevant patterns of behavior to achieve success. These environmentally relevant patterns of behavior lead to the formation of different cultural values that may influence the decision to create new businesses. Casson (1990) argued that an infrastructure that enhances cooperation between a country's entrepreneurs will facilitate problem-solving activities and increase entrepreneurial activity. Hence, understanding of national differences will aid entrepreneurship researchers as well as would be entrepreneurs, potential investors, and government policy makers in revitalizing national economies (Busenitz et al., 2000).

In 1997, Kostova introduced the concept of a three-dimensional country institutional profile to explain how a country's government policies (constituting a regulatory dimension), widely shared social knowledge (a cognitive dimension), and value systems (a normative dimension) affect domestic business activity. Based on these dimensions, Busenitz et al. (2000) developed a measurement instrument to assess institutional environments across countries. They categorized the institutional dimensions as regulatory, cognitive and normative. The regulatory dimension of the institutional profile consists of laws, regulations, and government policies that provide support for new businesses, reduce the risks for individuals starting a new company, and facilitate entrepreneurs' efforts to acquire resources. The cognitive dimension consists of the knowledge and skills possessed by the people in a country pertaining to establishing and operating a new business. The normative dimension measures the degree to which a country's residents admire entrepreneurial activity and value creative and innovative thinking.

According to Rondinelli and Kasarda (1992) firms can leverage resources that are available through government-sponsored programs and enjoy privileges stemming from government policies that favor entrepreneurs. This in turn suggests the importance of the regulatory side of the institutional environment. Also, cognitive dimensions become an important set in institutional frameworks as certain information becomes a part of a shared social knowledge (Busenitz & Barney, 1997; Lau & Wood-man, 1995). For example, in some countries, knowledge about how to found a new business may be widely dispersed (Busenitz & Lau, 1996), while in others this same knowledge may be lacking. Finally, in terms of normative dimensions researchers (i.e. Busenitz & Lau, 1996; Knight, 1997; Tiessen, 1997) argue that a country's culture, values, beliefs, and norms affect the entrepreneurial orientation of its residents.

This is analogous to stating that these affect attitudes towards entrepreneurship (i.e. feasibility an desirability perceptions).

In 1994 Gnyawali and Fogel suggested a conceptual frame for entrepreneurial environments. The environment consists of governmental policies and procedures, socioeconomic conditions, financial assistance and non-financial assistance. The conditions suggested by Gnyawali and Fogel (1994) encompass the regulatory, cognitive and normative dimensions tested by Busenitz et al. (2000). Kilby (1971), in his book *Entrepreneurship and Economic Development,* also draws attention to conditioning factors in entrepreneurship and suggests, among others, availability of credit and venture capital, technology transfers, price structures and intellectual capital, as major challenges for entrepreneurship. Bush and Immergluck (1995) specifically emphasize the importance of small business lending for economic development.

Interplay between Institutional Theory and Resource Based Theory can be observed particularly in terms of availability of resources in the environment to operate entrepreneurial intentions (entrepreneurial behavior), more specifically, how institutions help individuals acquire resources either tangible such as physical and financial resources, or intangible such as information, and human capital. Other factors suggested by the literature of entrepreneurial environments assume the role of facilitating or inhibiting entrepreneurship. For example, Gartner's (1985) four-dimensional framework of new venture creation puts forth several topics that characterize the surrounding environment of the new venture. These topics include venture capital availability, presence of experienced entrepreneurs, technically skilled labor force,

accessibility of suppliers, accessibility to customers and/or new markets, proximity of universities, etc. (Refer to table 2 for an extensive list). This list of environmental characteristics was originally presented by Bruno and Tyebjee (1982).

Table 2 – Gartner's Environments for Entrepreneurship

Venture capital availability	High occupational and industrial differentiation
Presence of experienced entrepreneurs	High percentages of recent immigrants
Technically skilled labor force	Large industrial base
Accessibility of suppliers	Large size urban areas
Accessibility of customers or new markets	Availability of financial resources
Governmental influences	Barriers to entry
Proximity of universities	Rivalry among existing competitors
Availability of land or facilities	Pressure from substitute products
Accessibility of transportation	Bargaining power of buyers
Attitude of the area population	Bargaining power of suppliers
Availability of supporting organizations	Living conditions

Source: Gartner (1985)

Building on resource based theories they stated that the more munificent an environment, the greater the access a new firm will have to its resources. Bruno and Tyebjee (1982) also make an important remark by saying that we must not ignore the crucial role of the entrepreneur's subjective interpretation when considering the environmental characteristics. Because of this we will assess influence of environmental (exogenous situational factors) on firm emergence based

on the individuals' perceptions. The importance of assessing these factors from individuals who already embarked in the entrepreneurial process is that perceptions will be more accurate, since the individual has already started to interact with these, condition that is not met if we evaluate these exogenous factors prior to conducting any activity towards venture creation, such as in most studies of entrepreneurial intentions.

In this study we employ Gnyawali and Fogel (1994) definition of entrepreneurial environment. The authors define it as a combination of factors that play a role in the development of entrepreneurship. It refers to overall economic, socio-cultural and political factors that influence willingness and ability to undertake entrepreneurial activities; and the availability of assistance and support services that facilitate the start-up process (Refer to Table 3 for an extensive list of variables). Based on the above we propose the following hypothesis:

H_7: The environment (situation), as indicated by facilitating conditions positively influences attitudes towards venture creation.

H_8: The effect of the environment (situation), as indicated by facilitating conditions will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort.

H_9: The environment (situation), as indicated by inhibiting conditions is negatively associated to attitudes towards venture creation.

H_{10}: The effect of the environment (situation), as indicated by inhibiting conditions will be lower for individuals who succeed in venture creation than for those who abandon the start-up effort.

Table 3 - Environments for Entrepreneurship

Government Policies and Procedures	*Financial Assistance*
Restrictions on imports and exports	Venture capital
Provision of bankruptcy laws	Alternative sources of financing
Entry barriers	Low-cost loans
Procedural requirements for registration and licensing	Willingness of financial institutions to finance small entrepreneurs
Number of institutions for entrepreneurs to report to	Credit guarantee program for start-up enterprises
Rules and regulations governing entrepreneurial activities	Existence of competition among financial institutions
Laws to protect proprietary rights	*Non-Financial Assistance*
Socioeconomic Conditions	Counseling and support services
Public attitude toward entrepreneurship	Entrepreneurial networks
Presence of experience entrepreneurs	Incubator facilities
Recognition of exemplary entrepreneurial performance	Government procurement programs for small businesses

Source: Gnyawali & Fogel, 1994

Table 3 - Environments for Entrepreneurship, Continued

Existence of persons with entrepreneurial characteristics	Government support for research and development
Successful role models	Tax incentives and exemptions
Proportion of small firms in the population of firms	Existence of local and international information networks
Diversity of economic activities	Modern transport and communication facilities
Extent of economic growth	
Entrepreneurial and Business Skills	
Technical and vocational education	
Business Education	
Entrepreneurial training programs	
Technical and vocational training programs	
Availability of information	

Source: Gnyawali & Fogel, 1994

As stated previously, very strong intentions do not necessarily lead to actual behavior (Triandis, 1967; Katz, 1989), which argues for considering not only temporal issues (Bird, 1991) but also factors which may precipitate (i.e. displacement and propensity to act). Precipitating events trigger actual intended behavior. According to Shapero and Sokol (1982) displacement events in an individuals' life precipitate taking action and these events can be externally or internally imposed to the entrepreneur. External events included political and religious refugees or job-related displacements (job dissatisfaction or loss). According to the authors job-related

displacements are far more frequent. Moreover they argue that individuals are more likely to take action on negative information than on positive so negative displacements are found to precipitate more company formations.

On the other hand, displacements internal to the entrepreneur are generated without reference to anything but the passage of time, as for example a birthday. Also, the state of being out of place or between things often precedes entrepreneurial behavior. According to the authors, one is more likely to start a new venture upon discharge from military service, completion of studies or other project. Finally, although negative displacement events tend to predominate, there are many positive pulls that lead to the start-up of a business such as the offer of financial support or the offer of a contact by a potential customer. (Refer to Table 4). Based on the above we propose the following hypothesis:

H_{11}: Displacement events influence attitudes towards entrepreneurship.

H_{12}: Displacement events influence entrepreneurial behavior.

Although empirical examination of displacement events are lacking, some descriptions have been assessed. For example, Reynolds et al. (2004) found that those not involved in the labor force (i.e. unemployed) were less likely to start-up businesses. These finding poses interesting questions, since theoretical assumptions such as Shapero's (1982) precipitating event suggest unemployment as a critical variable to catalyze the decision to start a business. An earlier finding by the same author, found that individuals who indicated that unemployment did

not have any influence on nascent entrepreneurship (Reynolds, 1997). Given that a significant amount of government funds are directed towards entrepreneurial programs for this population in the context of study (Puerto Rico), this study addresses the relationship of this variable on nascent entrepreneurship.

As previously stated, articles that empirically address Shapero's displacement event are lacking. However, the literature on entrepreneurial motivation provides some cues into potential displacement events. These studies emphasize the distinction between necessity entrepreneurs pushed into entrepreneurship because other options for work are absent or unsatisfactory, and opportunity entrepreneurs who seek to exploit some business opportunity and are pulled into entrepreneurship more out of choice (Williams, 2008; Harding et al. 2006; Maritz 2004; Minniti et al. 2006; Smallbone and Welter 2004). For instance, Schjoedt and Shaver (2007) analyze if the potential for increased life satisfaction pulls or job dissatisfaction pushes individuals toward an entrepreneurial career. Using data from the Panel Study of Entrepreneurial Dynamics they found no significant mean differences between nascent entrepreneurs and the comparison group for life satisfaction dimensions, whereas for job satisfaction, they found a significantly higher mean for the nascent entrepreneurs than for the comparison group. According to the authors it was clear that despite prior literature suggesting that life satisfaction pulls people toward entrepreneurship, there are no differences across respondent groups in overall life satisfaction. It is also clear that, in contrast to what would be predicted by prior literature, nascent entrepreneurs are actually more satisfied with their pre-entrepreneurial jobs than other individuals. One prominent account suggests that there may be factors that either pull individuals toward creating new ventures or push them into it. Using data from the Global Entrepreneurship Monitor (2003),

Minniti and Bygrave (2004) found that that pull factors may be more important than push, but both ideas warrant closer examination. For example, in one of the early empirical studies of the push idea, Brockhaus (1980) found entrepreneurs to be less satisfied about their previous working conditions than were managers in other business organizations. Because of the above, it is crucial to analyze the effect of Shapero's displacement event dimension as a catalytic of entrepreneurial behavior. (Refer to Table 4 for a list of Displacement Events)

Table 4 – Displacement Events

Negative Displacements	*Positive Pull*
Forcefully emigrated	From partner
Fired	From mentor
Insulted	From investor
Angered	Form customer
Bored	*Others*
Reaching middle age	Graduation
Divorced or Widowed	Divorce
Between Things	Birth of child
Out of army	Termination of employment
Out of school	Death of a family member
Out of Jail	Inheritance
	Unsatisfied/frustrated with previous job

Source: Shapero and Sokol (1982) and Grundstén (2004)

2.5 Conceptual Model of the Study

The literature discussed in the previous sections provides the cues for developing the framework of this study. According to the literature in entrepreneurship, intentional models have been quite useful at explaining planned behavior, such as venture creation (Krueger, Reilly and Carsrud, 2000). The psychological literature has proven intentions to be the best predictor of planned behavior and therefore offer the means to better explain and predict entrepreneurship. Intentions are a function of attitudes towards a conduct and subjective norms (Fishbein and Ajzen, 1975). However, noticing that not every behavior is under the individual's power, Ajzen (1991) introduced the concept of perceived control, which considers abilities and resources that may interfere with the operation of intentions. Acknowledging that very strong intentions do not necessarily lead to actual behavior (Triandis, 1967; Katz, 1989) argues for considering not only temporal issues (Bird, 1991) but also factors which may precipitate (e.g. displacement and propensity to act), facilitate and inhibit entrepreneurial behavior. This in turn, plays a significant role in the operation of entrepreneurial intentions and firm emergence. Nonetheless, empirical examinations of the intention-behavior relationship as well as the factors that influence it has been lacking from the literature in entrepreneurship. This study is an attempt to provide insights into the intention-behavior relationship and the factors at play during this transition.

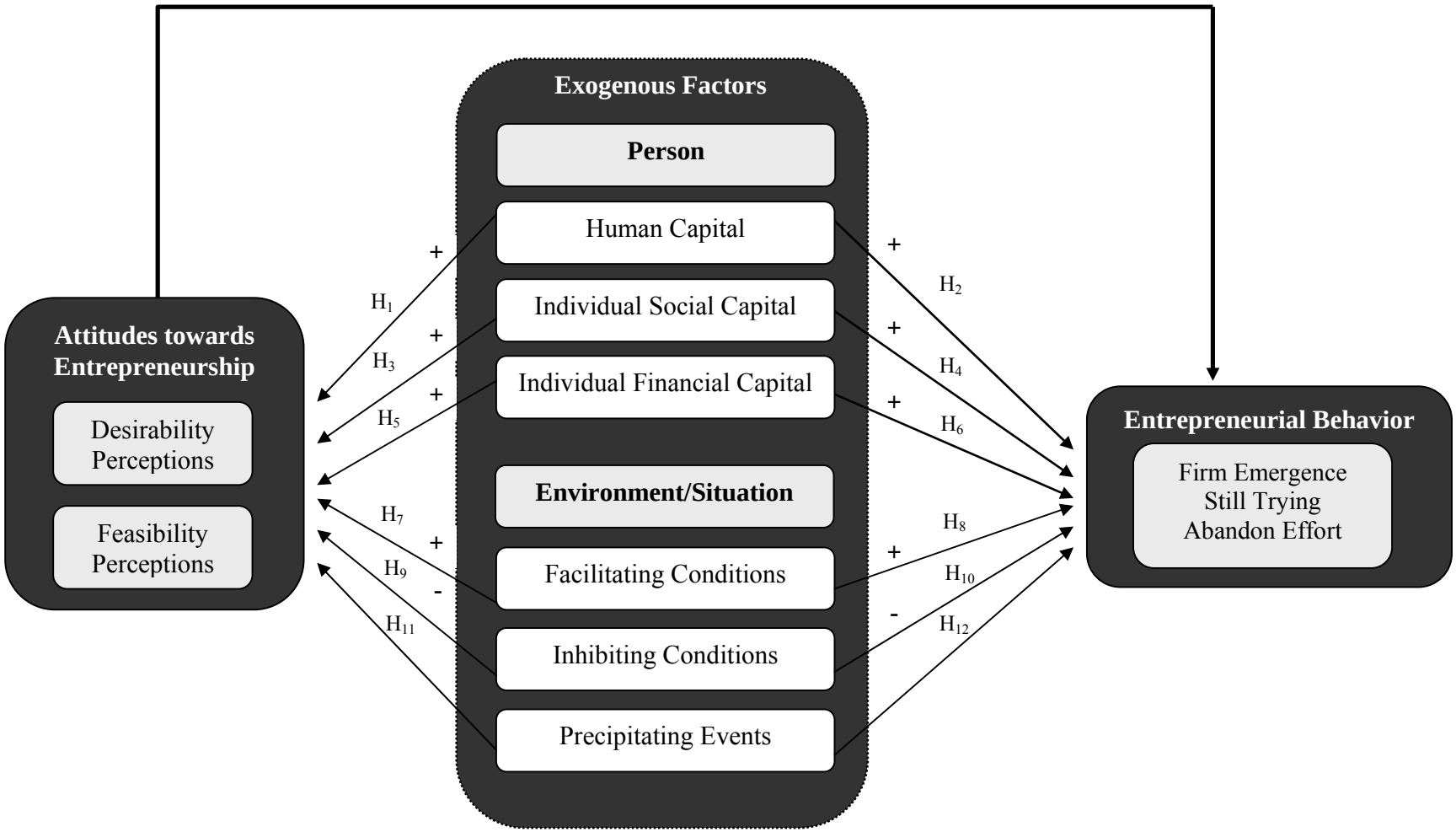
The theory employed in this study is based on Ajzen's (1991) Theory of Planned Behavior (TPB) but employs Shapero's (1982) Entrepreneurial Event (SEE). The general framework puts forth the importance of intentions as precursors of behavior. Moreover, it highlights two antecedents of intentions: desirability and feasibility perceptions. These preclude

intentions toward a given behavior, in this case firm emergence (the behavior of creating a business). These determinants of intentions have been vastly examined in the entrepreneurship literature and have found strong empirical support as precursors of entrepreneurial intentions. The model shows that attitudes towards entrepreneurship, as indicated by perceived desirability and feasibility (terminology employed by Shapero and Sokol, 1982; and later by Krueger and Brazeal, 1994) will influence entrepreneurial intentions.

Later developments in theories of planned behaviors acknowledge that not every behavior is under volitional control. This puts forth the role of exogenous factors in the venture creation process. In this sense it is crucial to analyze the factors that influence the process that convert intentions into action. According to the literature discussed in previous sections, exogenous factors usually affect intentions and behavior in two manners: indirectly through attitude changes, (Ajzen, 1987, Bagozzi and Yi, 1989) or by directly moderating the relationship between intentions and behavior. Also intentions are specific to the person and context but exogenous factors are generally personal or situational variables. This in turn puts forth the usefulness of intentional frameworks to offer testable, theory driven models of how exogenous factors affect attitudes, intentions and behavior. Our study examines the influence of exogenous factors on the intentions-behavior relationship and on attitudes. These influences are shown in Figure 3, were H_1, H_3, H_5, H_7, H_9 and H_{11}, show the influence of exogenous factors on attitudes, and H_2, H_4, H_6, H_8, H_{10} and H_{12}, suggest the influence of exogenous factors on entrepreneurial behavior.

The previous discussion emphasized the role of exogenous factors in entrepreneurial behaviors. Personal and situational factors emerge as significant contributors during this process, by influencing entrepreneurial behaviors of those with intentions, and by influencing attitudes towards the behavior. In order to understand the effect of exogenous factors during the new venture process, we borrowed from the Resource Based Theory, as it plays a significant role in entrepreneurial research particularly since entrepreneurship is often described as acquiring, combining, and assembling critical resources, which make up the firm (Stevenson and Gumbert, 1985; Katz and Gartner, 1988; Bergmann et al., 2001; Kelley and Rice, 2001). Also, in analyzing exogenous situational factors we borrowed form the literature on entrepreneurial environments. Refer to Figure 4 for the detailed framework of study and expected relations. As it can be observed, exogenous factors (personal and environmental) influence venture creation by affecting attitudes to make the decision to start the business (intentions). In this sense, exogenous factors set the basis for potential entrepreneurs (first stage in venture creation). Also, once intentions are formulated, personal and environmental factors will affect transitions in the venture creation process, and therefore entrepreneurial behavior (firm emergence).

Figure 4 - Framework of the Study and Expected Relations



Source: Developed by the author

As depicted in Figure 4, one of the personal factors identified is human capital. According to Chrisman (1999) venture creation may be considered a special case of Resource Based Theory because a new venture has few if any stocks of resources other than the knowledge of the entrepreneur. Hypothesis 1 evaluates the relationship between human capital and attitudes towards entrepreneurship (i.e. desirability and feasibility perceptions), while Hypothesis 2 evaluates human capital on entrepreneurial behavior. Another personal factor identified is the individuals' social capital. According to (Carter et al., 1996) interactions of individuals can represent a resource valuable to new ventures. These in turn, facilitate the acquisition of other required resources for venture creation. Hypothesis 3 and 4 analyzes the relationship of individuals' social capital on entrepreneurial attitudes and behavior (firm emergence). Finally, another personal exogenous factor considers financial resources. Although Bygrave (1992) defines financial capital resources as funds from any sources used to start, operate and grow a business, which suggests that resources are not necessary appropriated by the entrepreneurs but also available in the environment, we emphasize the role of financial resources possessed by the individual (nascent entrepreneur) due to the fact that access to financial resources is often consider a great impediment for business start-ups. Hypothesis 6 evaluates the relationship between the individuals' financial capital and entrepreneurial behavior (firm emergence). We will consider financial resources from other sources when analyzing situational exogenous factors.

In contrast to personal factors (inherent to the individual – nascent entrepreneur), situational exogenous factors emerge mainly from the environment. These include: precipitating events, inhibiting or facilitating factors. In order to analyze the effect of these

factors we borrowed from the literature of entrepreneurial environments, mainly based on Institutional Theory. Interplay between Institutional Theory and Resource Based Theory can be observed particularly in how institutions help nascent entrepreneurs acquire resources either tangible such as physical and financial resources, or intangible such as information, and human capital. This is supported by Bruno and Tyebjee (1982) assertion: the more munificent an environment, the greater the access a new firm will have to its resources. This in turn, facilitates or inhibits entrepreneurship. The impact of situational/environmental exogenous factors including facilitating and inhibiting conditions on entrepreneurial behavior (firm emergence) is analyzed through hypothesis H_8 and H_{10}. Moreover recognition of factors that affect individuals' stability and trigger actual intended behavior, suggest the analysis of displacing events that precipitate taking action. The veracity of this statement as well as its impact on entrepreneurial behavior (firm emergence) is assessed through H_{12}.

As discussed previously, exogenous factors influence entrepreneurial behavior in two manners. These impact the relationship between intentions and behavior or influence entrepreneurial intentions and behavior indirectly through attitude changes. Intentional frameworks offer testable, theory driven models of how exogenous factors affect attitudes, intentions and behavior. In that sense, when analyzing the impact of exogenous factors on attitudes and consequently entrepreneurial intentions (precursors of behavior) one only need to assess which attitude is impacted by each exogenous factor. For example, individuals' social capital will affect entrepreneurial intentions if they impact attitudes such as perceived behavioral control (perceived feasibility); precipitating events such as unemployment or divorce may operate indirectly through desirability perceptions. The influence of exogenous factors on

attitudes is examined through several hypotheses (H_1, H_3, H_5, H_7, H_9 and H_{11}). Refer to Table 5 for supporting literature.

Table 5 – Summary of Supporting Literature

Hypothesis	Supporting Literature
H_1: Human capital is positively associated to attitudes towards venture creation.	Krueger (1993); Krueger and Carsrud (1993); Shapero & Sokol (1982); Krueger, Reilly & Carsrud (2000); Ajzen (1987 & 1991); Krueger and Brazael (1994); Bagozzi & Yi (1989); Caroll & Mosakowski (1987); Cooper & Dunkelberg (1987); Dunkelberg (1989); Davidsson and Honig (2003)
H_2: The effect of human capital will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort.	Brush et al. (2001); Chrisman (1999); Davidsson & Honig (2003); Shapero & Sokol (1982); Ajzen (1987 & 1991); Korunka, et al. (2003); Learned (1992); Greene & Brown, (1997); Reynolds (1997); Reynolds (2004); Gelderen et al. (2005); Davidsson and Honig (2003)
H_3: Individual social capital is positively associated to attitudes towards venture creation.	Krueger (1993); Krueger & Carsrud (1993); Shapero & Sokol (1982); Krueger, Reilly & Carsrud (2000); Ajzen (1987 & 1991); Krueger & Brazael (1994); Bagozzi & Yi (1989); Carter et al. (1996).

Table 5 – Summary of Supporting Literature

Hypothesis	Supporting Literature
H_4: The effect of social capital will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort.	Shane (2003); Chrisman (1999); Carter et al. (1996); Krueger & Carsrud (1993); Birley (1985); Greene & Brown, (1997); Davidsson & Honig (2003); Korunka, et al. (2003); Liao & Welsch (2005); Aldrich (1999)
H_5: Individual financial capital is positively associated to attitudes towards venture creation.	Krueger (1993); Krueger & Carsrud (1993); Shapero & Sokol (1982); Krueger, Reilly & Carsrud (2000); Ajzen (1987 & 1991); Krueger & Brazael (1994); Bagozzi & Yi (1989); Bygrave (1992).
H_6: The effect of financial capital will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort.	Bird (1993); Ghosh (1993); Krueger & Brazeal, (1994); Korunka, et al. (2003); Korunka, et al. (2003); Reynolds (1997); Reynolds (2004); Blanchflower & Oswald (1998); Holtz-Eakin et al. (1994)
H_7: The environment, as indicated by facilitating conditions is associated to attitudes towards venture creation	Bruno & Tyebjee, 1982; Westhead et al., 2001; El-Namaki, 1988; Gartner, 1985; Gnyawali & Fogel, 1994; Kilby (1971); Martin (1985); Krueger (1993); Krueger & Carsrud (1993); Shapero & Sokol (1982); Krueger, Reilly & Carsrud (2000); Ajzen (1987 & 1991); Krueger &

Table 5 – Summary of Supporting Literature

Hypothesis	Supporting Literature
	Brazael (1994); Bagozzi & Yi (1989); Bush and Immergluck (1995); Korunka, et al. (2003); Chrisman (1999)
H_8: The effect of the environment (situation), as indicated by facilitating conditions will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort.	Bruno & Tyebjee, 1982; Westhead et al., 2001; El-Namaki, 1988; Gartner, 1985; Gnyawali & Fogel, 1994; Kilby (1971); Triandis, 1967; Krueger (1993); Krueger & Carsrud (1993); Shapero & Sokol (1982); Krueger, Reilly & Carsrud (2000); Ajzen (1987 & 1991); Krueger & Brazael (1994); Bagozzi & Yi (1989); Bush and Immergluck (1995); Chrisman (1999)
H_9: The environment, as indicated inhibiting conditions is associated to attitudes towards venture creation.	Krueger (1993); Krueger and Carsrud (1993); Shapero & Sokol (1982); Krueger, Reilly and Carsrud (2000); Ajzen (1987 & 1991); Krueger and Brazael (1994); Bagozzi and Yi (1989); Shepard et al. 1988; Keeble & Walker, 1994; Reynolds et al. (1994)
H_{10}: The effect of the environment (situation), as indicated by inhibiting conditions will be lower for individuals who succeed in venture creation than for those who abandon the start-up effort.	Bruno & Tyebjee, 1982; Westhead et al., 2001; El-Namaki, 1988; Gartner, 1985; Gnyawali & Fogel, 1994; Kilby (1971); Martin (1985); Krueger (1993); Krueger & Carsrud (1993);

Table 5 – Summary of Supporting Literature

Hypothesis	Supporting Literature
	Shapero & Sokol (1982); Krueger, Reilly & Carsrud (2000); Ajzen (1987 & 1991); Krueger & Brazael (1994); Bagozzi & Yi (1989); Bush and Immergluck (1995); Korunka, et al. (2003); Chrisman (1999)
H_{11}: Displacement events influence attitudes towards entrepreneurship.	Bhave (1994); Krueger (1993); Krueger and Carsrud (1993); Shapero & Sokol (1982); Krueger, Reilly and Carsrud (2000); Ajzen (1987 & 1991); Krueger and Brazael (1994); Bagozzi and Yi (1989).
H_{12}: Displacement events influence entrepreneurial behavior (firm emergence).	Bhave (1994); Shapero and Sokol (1982) and Grundstén (2004); Martin (1985); Korunka, et al. (2003); Learned, 1992; Bird, 1992; Reynolds (1997)

Based on the previous discussion venture creation is an interactive and complex process where feedback loops are present. Nonetheless, four general phases are found in the literature (Refer to Figure 2). The first phase is the development of intentions to start a business, also analogous to what Bhave (1994) defined as decision to start. This stage is characterized by a willingness and disposition to start a business, although it does not entail action. According to the literature on intentions, attitudes are precursors of intentions and are influenced by exogenous

factors (personal and environmental). The second phase requires the recognition of opportunities and the development of a business concept. The distinctive characteristic at this stage when compared to the first stage (intentions) is that potential entrepreneurs start actively conducting activities towards developing a business solution (business idea/concept). At this stage, the majority of the resources employed by the entrepreneurs are intangible (Bhave, 1994) since they are actively evaluating opportunities and concepts, thus it requires information. Social networks and human capital may play a significant role in this phase (2). The third phase requires that resources are assembled and organization creation. In our study, we denominate this phase: organization set-up. The main outcome at this stage (3) is that the business is in place and ready to sell the product or service. This stage requires more tangible resources (i.e. money to rent facilities) and more interaction with the environment (i.e. compliance with governmental institutions). The final stage (4) is when the organization exchanges with the market. The critical milestone to define this stage is first sale. Although several activities could be included in this final stage (i.e. adjustments of the business concept based on customer feedback), our study focuses on sale as a proxy of firm emergence (entrepreneurial behavior). Overall, figure (2) allows us to understand how the venture creation process interacts with intentional models of behavior in figure 4, which represents the framework of our study.

The literature of planned behaviors offers a testable framework to evaluate the factors that influence the venture creation process. According to the literature, to formulate entrepreneurial intentions individuals must perceive that starting a business is desirable but also feasible (attainable). In a sense, individuals must consider the entrepreneurial career desirable while simultaneously perceiving they are capable of executing it. These two factors represent

the antecedent of intentions. Second, individuals must take initial steps towards the goal of creating an organization. Recognizing the fact that entrepreneurial behavior is not under complete volitional control puts forth the role of exogenous variables that affect the intention-behavior relationship (i.e. develop the business concept and setting up the organization). According to (Shapero and Sokol, 1982) displacement (precipitating events) will catalyze action. Moreover, several resources will be needed for successful attempt (firm emergence through market exchanges). During formulation of entrepreneurial intentions, resources necessary to achieve the final outcome are often unknown; therefore intentions are formulated with vague information based on potentially inaccurate perceptions. It is through the start-up process where potential entrepreneurs will acquire information that will confirm or disconfirm their initial perceptions, which potentially may alter their intentions through changes in feasibility and desirability perceptions. For example, an individual followed through his/her intentions to start a business and was able to develop a business concept/idea, but when he/she started setting up the business (i.e. looking for a loan) the resources were not available. This in turn could help explain differences in entrepreneurial outcomes (why some start a business while others abandon), particularly since another individual with the same business concept, but with financial resources at hand could be successful at creating the same venture. In this sense, the resources entrepreneurs possess and/or acquire throughout the venture process and the perceptions of facilitating or inhibiting conditions, which derive from the environment can also help explain different entrepreneurial outcomes. This section provided support for these statements, which provide the framework of study.

Although there are many empirical examinations of antecedents of intentions, empirical studies of the factors that influence the behavior once intentions are formed are lacking from the literature in entrepreneurship. This study is an attempt to provide insights into these exogenous factors and how these affect attitudes towards entrepreneurship in order to understand the process of firm emergence. In the next section we present an examination of the context: Puerto Rico. By reviewing existing research and secondary data from governmental institutions we provide an outlook of Puerto Rico's economic environment that suggests the importance of addressing the factors that influence venture creation.

3. AN EXAMINATION OF THE CONTEX: PRECEDENT STUDIES IN PUERTO RICO

Recently, the World Economic Forum (WEF, 2011-2012) revealed that Puerto Rico ranked in the 35th position out of 142 jurisdictions evaluated by the World Economic Forum Global Competitiveness Report. The World Economic Forum's Annual Global Competitiveness Report analyzes factors that influence national competitiveness. Competitiveness is defined by WEF as the set of institutions, policies, and factors that determine the level of productivity of a country. Puerto Rico's ranking increased (6 scales) when compared with the previous report. There are 12 components in WEFs' framework. These include: (1) the institutional environment; (2) infrastructure; (3) macroeconomic environment; (4) health and primary education; (5) higher education and training; (6) goods market efficiency; (7) labor market efficiency; (8) financial market development; (9) technological readiness; (10) market size; (11) business sophistication; and (12) interrelation of 12 pillars.

According to WEF (2011): *"…the level of productivity sets the level of prosperity that can be earned by an economy. The productivity level also determines the rates of return obtained by investments in an economy, which in turn are the fundamental drivers of its growth rates…a more competitive economy is one that is likely to grow faster over time…competitiveness thus involves static and dynamic components: although the productivity of a country determines its ability to sustain a high level of income, it is also one of the central determinants of its returns to investment, which is one of the key factors explaining an economy's growth potential."* Despite the advances made, there are still unresolved issues: How do these reflect on the over 40 percent population under poverty levels and 16 percent unemployment rate (Government Development Bank of Puerto Rico, 2011). The following paragraphs provide an historical outlook of the region's economic development that could shed some light into Puerto Rico's situation.

Puerto Rico, USA Commonwealth is the fourth largest island in the Caribbean. Approximately 3.9 million people inhabit this 3,435 square miles. Traditionally, the economic model was supported by federal and local incentives that stimulated foreign investment. For example, the now inexistent section 936 of the Internal Revenue code that allowed USA firms receive tax exemptions on the profits earned in Puerto Rico positioned the Island as a "tax haven. In addition to tax incentives, this strategy promoted an infrastructure of support to attract large corporations. This in turn, produced a culture that valued workers instead of entrepreneurship. Even academic institutions adapted to this strategy. Students were prepared to be managers with little emphasis on entrepreneurship and starting businesses. Currently, most academic institutions such as Ana G. Mendez University System, University of Puerto Rico and Interamerican University of Puerto Rico (top three university systems in terms of graduates per

year) have included entrepreneurship courses in their offerings. Also, these have developed support programs (mainly orientation and mentoring) to help stimulate entrepreneurial spirit among students and the community in general.

Even more recent, large amounts of public debt in the island prompted the development of the "*Special Act to Declare a State of Fiscal Emergency and to Establish a Comprehensive Fiscal Stabilization Plan to Salvage the Credit of Puerto Rico*" (Act No. 7). This Act put hundreds of public officials in unemployment lists. It is important to notice that the government has been the second largest employer in the island, employing more than 23 percent of the labor force. The elimination of 936 Section and exclusive trading agreements between Puerto Rico and USA, in addition to the more recent Act No. 7 has created the need of developing a sustainable economic model for the region, supported on native entrepreneurship.

Puerto Rico has had little success in stimulating entrepreneurship to help combat the over 40 percent population under poverty levels and 16.1 percent unemployment rate (highest unemployment rate since 1993). Although the previous economic model generated the much needed employment at a moment in time, attempts to stimulate local entrepreneurial activity have met with difficulty since entrepreneurial activity in the region emerged over time from a spontaneous rather than systematic attempt. Over the past decade, recognition of a need to provide an infrastructure that stimulates entrepreneurship prompted the development of support programs that provide financial and educational support for enterprising individuals.

According to the literature on entrepreneurial environments institutions play a central role on regional development. Institutions provide economic support including loans, subsidies, risk capital, among others. Other support programs provide services such as orientation, consulting and training. Incubators are included in this group. In Puerto Rico, governmental support comes from three main sources: Federal, State and Municipal. Federal Institutions are constituted by the Small Business Administration (SBA), Minority Business Development Agency (MBDA), and the Rural Development. State institutions include the Puerto Rico Industrial Development Company (PRIDCO), Economic Development Bank for Puerto Rico, Puerto Rico Trade Company, Government Development Bank for Puerto Rico and other municipal entities, mainly economic development offices. Also, other private institutions such as commercial banks, consulting firms, chambers of commerce, private universities, venture capital firms, and incubators provide support for entrepreneurial endeavors.

Despite of the progress made in terms of building an infrastructure that fosters entrepreneurial activity, there are still issues to address. According to Ruiz-Vargas (2000) there are differences in financing sources employed by immigrants and natives in Puerto Rico, and concluded that non-native owned businesses have a higher access to credit markets than natives. Aponte (2005) finds that these institutions are slowed down by heavy bureaucracy and the attitude of the staff in many support institutions is far from entrepreneurial since often restrain the process and even discourage potential entrepreneurs. Also, over-diversification of services provided by support institutions, and lack of coordination between may lead to duplication of the supply side of business creation support programs.

In 2007 the world economy experienced a slight deceleration, mainly due to weaknesses experienced by the U.S.A. economy during the year. More specifically, United States economy advanced at a 2.9 percent real annual rate in fiscal year 2006, while it only grew 2.2 percent in 2007. This reduction had an impact on Puerto Rico. Puerto Rico Planning Board data shows that during fiscal year 2007 the gross national product (GNP) registered a 1.8 percent real reduction as compared to the previous fiscal year, while for fiscal 2006 it grew only 0.5 percent. This poor performance is the result of a recession that began during the first quarter of 2006 and still persists. The causes for this recession include increases in oil prices and financial adjustments made to manage the crisis in mortgage markets in U.S.A., which have had direct impact on our local economy, and the fiscal adjustments made in years 2006 and 2007 (Government Development Bank of Puerto Rico, 2007).

Despite tax burdens, Puerto Rico's general business climate appears to be relatively favorable. In the World Bank's most recent poll that examines the ease of doing business in countries worldwide, Puerto Rico (considered separately from the United States) ranked nineteenth, higher than any Caribbean or Central American region (World Bank, 2006). The commonwealth scored particularly high on indicators such as starting a business, protecting investors, and paying taxes. Nonetheless, it received relatively low marks, on indicators related to dealing with licenses and enforcing contracts. These findings suggest that Puerto Rico possess a relatively favorable business climate, when compared with other countries in near regions. Another variable that has been associated with economic and regional development is education. Based on data from the U.S.A. Census Bureau, 2007 American Community Survey, Puerto Rico

has a well-educated labor force where 40.1 percent of the population from 25 to 44 years old possess associates degree or higher, as opposed to 38.3 in the United States.

There is no doubt Small and Medium Enterprises (SMEs) dominate the economy in Puerto Rico. According to Puerto Rico's Small Business Report (2011) published by the U.S. Small Business Administration (SBA), Office of Advocacy, Puerto Rico has the largest economy of the U.S. territories. It had more private sector establishments and employment than 14 states and the District of Colombia in 2009. However, wages are relatively low as its annual private sector payroll was only larger than six states. The states it outranked in terms of payroll had fewer than half as many employees as Puerto Rico.

Table 6 shows total private sector establishments by size. As it can be observed more than 99 percent of establishments can be categorized as SMEs (if using SBA definition). Moreover, the table demonstrates a reduction in total number of establishments (-1,791 from FY 2007 to 2009) and paid employees (-65,184 from FY 2007 to 2009).

Table 6 - Total private sector establishments by size (employees)

Year	**Total establishments**	**Paid employees**	**1-4**	**5-9**	**10-19**	**20-49**	**50-99**	**100-249**	**250-499**	**500-999**	**1000 or more**
2009	45,549	702,063	25,165	8,798	5,534	3,763	1,229	674	255	98	33
2008	46,348	748,838	25,084	9,092	5,756	3,955	1,318	738	252	110	43
2007	47,340	767,247	25,876	9,076	5,756	4,083	1,371	766	257	110	45

Source: County Business Patterns (2009, 2008 and 2007). Retrieved from

http://www.census.gov/econ/cbp/index.html

Table 7 shows business turnover indicators in Puerto Rico for fiscal years 2008 – 2009. The table demonstrates that quarterly establishment openings decreased (89) and bankruptcies increased (47) in fiscal year 2009. Note that the number of bankruptcies in 2007 was 276, which represent an increase of 120 during the period 2007-2009 (U.S. Small Business Administration Office of Advocacy, 2011). Although establishment closings decreased in 2009 (7,722), the rate of establishment closings per establishment openings demonstrate a disconcerting scenario (1.17 for FY 2008; and 1.13 for FY 2009).

Table 7 - Business Turnover in Puerto Rico (2008-2009)

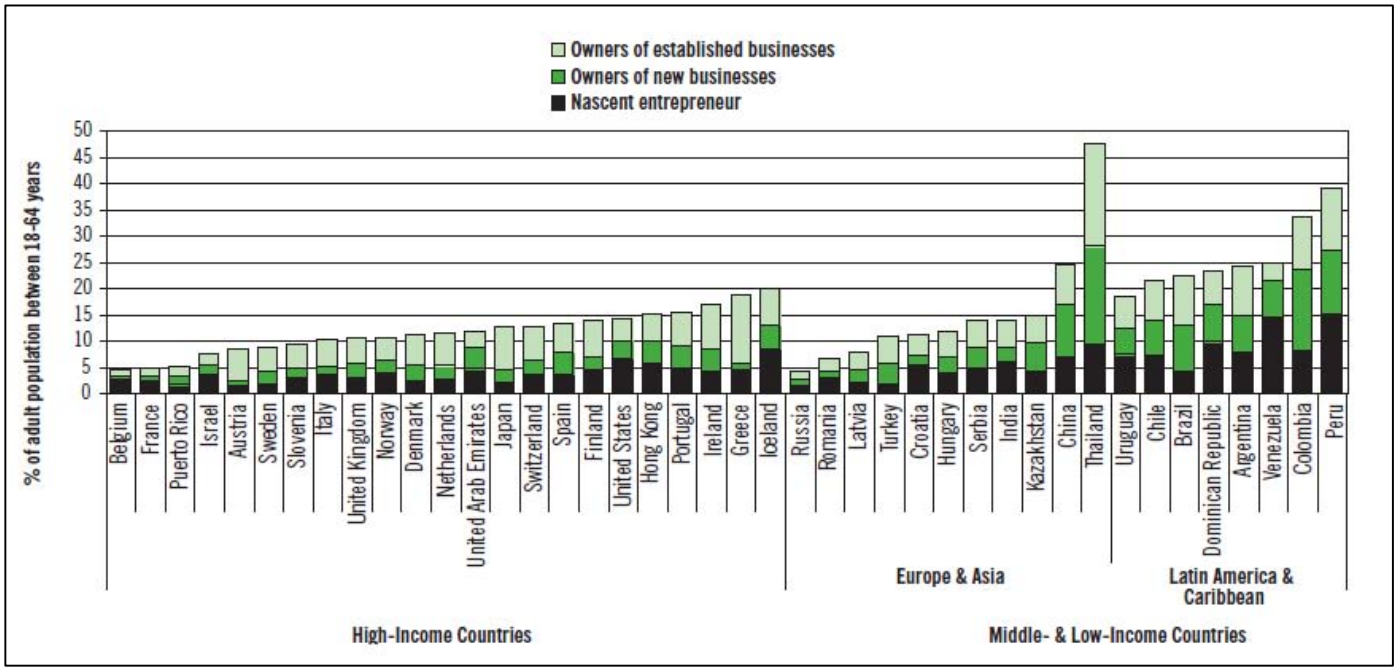
Quarterly establishment openings		**Quarterly establishment closings**		**Business bankruptcies**	
FY 2008	FY 2009	FY 2008	FY 2009	FY 2008	FY 2009
6,899	6,810	8,045	7,722	349	396

Source: U.S. Small Business Administration Office of Advocacy (2010). The Small Business Economy: A Report to the President

Figure 5 show the amount of individuals (adults 18 – 64 years of age) engaged in entrepreneurial activity across the world. The figure was taken from The Global Entrepreneurship Monitor, 2007 Executive Report. The Global Entrepreneurship Monitor is an international research program that monitors entrepreneurial activity of regions. This research program started in 1999 with 10 countries, and since then it is carried out yearly with a greater number of nations integrated each period (59 countries in 2010). Figure 5 shows entrepreneurial activity indicators

across all countries that participated in GEM's Adult Population Survey 2007. The indicators in the figure positioned Puerto Rico in a low ranking when compared to all cohorts (high-income countries, middle- and low-income countries in Europe and Asia; and middle- and low-income countries in Latin American and Caribbean). These findings do not provide an optimistic scenario for Puerto Rico, particularly the low rates of nascent entrepreneurs in the region. Low rates of nascent entrepreneurs represents that there are very few individuals conducting activities to start businesses (low levels of future entrepreneurial activity-businesses)

Figure 5 - Population at Different Stages of Engagement in Owner-Managed Businesses, 2007



Source: Bosma, N., Jones, K, Autio, E., & Levie, J., (2007). Global Entrepreneurship Monitor Executive Report.

Another indicator of a regions economic and innovative capacity is the patent counts. Table 8 displays patent grants by state/territory and country of origin. We include ad hoc states

similar to Puerto Rico in terms of population for comparison. Overall, the table shows that there is much to do to increase the amount of innovation (if measured by patent grants) in our region.

Table 8 – Patent Counts by Origin and Type Calendar Year 2011

State/Territory	**Utility**	**Design**	**Plant**	**Reissue**	**Total (less SIRs)**	**SIRs**
Puerto Rico	27	1	0	0	28	0
Connecticut	1939	170	1	11	2121	0
Iowa	811	44	0	1	856	0
Kentucky	488	59	1	3	551	0
Oklahoma	484	38	1	6	529	0

Source: U.S Patent and Trademark Office (2011): Retrieved from http://www.uspto.gov/web/offices/ac/ido/oeip/taf/st_co_11.htm

Finally, Table 9 shows availability of credit indicators for the period 2007 – 2009. As it can be observed the number of business loans (under $100,000) decreased in 2009 (-2,404) when compared to the previous year (2008). Also, the value of these business loans was also reduced by 202.1 (millions) when comparing 2007 and 2009. A reduction in total bank branches in the country was also observed.

Table 9 –Availability of Credit Indicators in Puerto Rico

Fiscal Year	**2009**	**2008**	**2007**
Business loans under 100,000 (total)	20,337	22,741	21,325
Value of business loans under 100,000 ($ millions)	574.4	710.2	776.5
Bank Branches (total)	526	554	569

Source: U.S. Small Business Administration Office of Advocacy (2011). Small Business Profile: U.S. Territories

Despite the recognized role of SMEs and Entrepreneurship in regional development, this finding combined with those presented in previous tables suggest the following: (1) private employment is reducing; (2) amount of bankruptcies are increasing; (3) establishments close at a higher rate than they open; (4) there is a low rate of individuals involved in activities to start and create businesses; (5) and innovation indicators as indicated by intellectual property/patents do not provide an optimistic scenario. Because of the above it is crucial to develop an infrastructure/environment, based on systematic rather than spontaneous approaches to spur entrepreneurial initiatives and SMEs growth in the region, and consequently help combat the over 40 percent population under poverty levels and 16.1 percent unemployment rate (Government Development Bank of Puerto Rico, 2011). This in turn, cannot be developed if we lack understanding of the underlying factors in entrepreneurial processes. In the next section, we discuss the methodology employed in this study.

4. METHODOLOGY

The proposed study attempts to construct a model of entrepreneurial success (firm birth) that analyzes the antecedents of entrepreneurial intentions; transition from intentions to actively conducting activities for creating the business (nascent entrepreneurship); and the entrepreneurial outcome (firm birth). More specifically the study examines the determinants of entrepreneurial intentions, which have been strongly supported by the literature (planned behavior) and the factors that influence the intention-behavior relationship. Also, analyzes how exogenous factors influence attitudes towards entrepreneurship (antecedents of intentions). By examining these factors we will be able to provide insights into the entrepreneurial process: from the formulation of entrepreneurial intention to successful entrepreneurial attempt (firm emergence).

4.1 Design of the Study

The study comprises two phases of the entrepreneurial process: the formulation of entrepreneurial intentions and the intention-behavior relation (firm emergence). There is extant literature that supports antecedents of intentions (i.e. Krueger et al., 2000). In order to examine the relationship between attitudes towards entrepreneurship, as indicated by perceived desirability and feasibility with entrepreneurial intentions, we employed data from the Global Entrepreneurship Monitor provides data to test the determinants of entrepreneurial intentions, the first stage in the entrepreneurial process. The data used for this quantitative analysis was obtained from the Adult Population Survey 2007 (APS) for the Puerto Rico region. The APS considered a random sample of 2000 adults (ages 18-64) in Puerto Rico. By assessing these

determinants we test the validity of intentional models in the context of entrepreneurship. The relationship between attitudes towards entrepreneurship and intentions was analyzed using inferential statistics, specifically Analysis of Variance (ANOVA) for two groups: individuals who have entrepreneurial intentions (potential entrepreneurs) and individuals who do not have the intention of creating a business. At this stage, insights into entrepreneurial activity and potential in Puerto Rico will be explored. However, it is recognized that although the analysis permits to examine the underlying role of different variables between groups, it does not allow establishing conclusive relationships of the variables during the entrepreneurial process, mainly due to the nature of the variables employed (dichotomous).

The second phase of the framework, which considers the transition from intentions to behavior, will be examined using quantitative methodology derived from primary informational sources (survey). More specifically, we will analyze the effect of exogenous factors (personal and situational) on entrepreneurial outcomes (i.e. firm birth) and on attitudes towards entrepreneurship. A survey was developed to measure the influence of exogenous factors presented in figure 4. A survey was developed during the period of January to February, 2010. Measurement scales for each variable was derived from existing literature and will be included in the first draft of the survey. We used expert opinions (academics, consultants of entrepreneurial support organizations and actual entrepreneurs) to improve the data collection instrument. Telephone interviews were conducted during the period of January 2011 to May 2011. .

Screening questions were developed to categorize a priori the status groups (abandon or firm birth). As previously stated Katz and Gartner (1988) suggested that firm birth can be

identified by means of four properties: intentionality, resources, boundary and exchanges. In this study, intentionality is constant to the sample as they have taken one concrete step in the direction of organizing a new venture, going to a SBDC. Several authors have employed several approaches to categorize firm birth. Reynolds and Miller (1992) suggested the following criteria for determining that a firm is fully established: (1) personal commitment (e.g. when members of the start-up team first begin to make major investments in the new firm); (2) financial support (e.g. when was the first outside financial support obtained); (3) sales (i.e. when did the firm receive its first sales income); and hiring (when did the firm hire anybody). Finally, Carter et al. (1996) employed a self-perception measure of the current status of the development of their firm: (1) still working on putting the business in place; (2) given up, do not expect to start that business; (3) the business is now in operation, up and running. They used other start-up indicators such as: whether their business was included on standard business listings (i.e. Dun and Bradstreet files, unemployment insurance files, social security files, or the federal tax return listing), whether they had received any money from the sales of goods or services, and if they had achieved a positive cash flow have also been used. However, given that most start-ups often does not comply with these indicators at initial stages we employ a measured that required respondents to indicate whether they were able to create a business with own resources and identity (i.e. Gartner, 1985, Katz and Gartner, 1988, and Carter et.al. 1996).

Based on Carter et al. (1996) we will employ a perceptual measure of the current status of the firm in combination with first sale. Hansen (1991) and Hansen and Wortman (1989) proposed that the first commercial sale of a product or service marks the end of the pre-organization stage and signals the emergence of the new organization. Researchers have argued

that the first sale is a significant and last-step event in the physical creation of a new venture creation (Bhave, 1994; Block and MacMillan, 1985) for the following reasons: (1) first sales are the materialization of a business opportunity as they vindicate the business concept; and (2) the first sales are the starting point of customer feedback, which will help determine the venture's future direction.

The results were summarized using descriptive statistics such as means, frequencies, percentages and standard deviations. Inferential statistics such as Analysis of Variance (ANOVA) was used to analyze the relationships between variables. More specifically, analysis of Variance (ANOVA) was used to analyze differences between groups for both the Global Entrepreneurship Monitor Data sample and the SBDC sample. Regression Analysis was conducted to examine the relationship between exogenous factors (human capital, social capital, financial capital, facilitating conditions, inhibiting conditions and displacement events) on attitudes towards venture creation and entrepreneurial behavior.

Structural equation modeling (SEM) was used to test unobservable factors and generate venture creation models. SEM was used to test whether the broader factors personal factors (i.e. human capital, social capital and financial capital) and environmental factors (i.e. facilitators, inhibitors and displacement events) cause attitudes towards entrepreneurship and entrepreneurial behavior. Structural equation models (SEMs), also called simultaneous equation models, are multivariate regression models. Unlike the more traditional multivariate linear model, the response variable in one regression equation may appear as a predictor in another equation (variables may influence one another reciprocally). These structural equations are meant to

represent causal relationships among the variables in the model (Fox, 2002). Also, SEM is particularly suited when analyzing relations between latent variables (variables that cannot be observed directly) such as the factors considered in this study, as it takes into account covariation among a set of observed variables to gather information on their underlying constructs, similar to factor analysis. However, SEM goes beyond factor analytic models as it also considers inter-factor relations.

Jöreskog (1993) distinguished three scenarios for testing structural equation models: strictly confirmatory, alternative models and model generating. In this study will be employ the model generating scenario in which we will postulate a model based on theory and test the fit of the hypothesized model. However, if the postulated model is rejected based on poor fit to the sample data, we will proceed in an exploratory manner to modify and re-estimate the model. In this sense, we will bridge the confirmatory scenario to an exploratory scenario in order to create the best fitted model of venture creation. Although related studies (i.e. Gelderen et al., 2005) employed logistic regression we recognize the advantages posed by this statistical methodology. This in turn, puts an edge on this study as it not only addresses a phenomenon lacking empirical work but also employs a more robust methodology as it not only allows confirmation but also exploration, which consequently leads to the end result: a model of venture creation. Analysis of all data will be conducted using statistical analysis software, specifically Statistical Package for Social Sciences (SPSS v.19) and Analysis of Moment Structures (AMOS v. 19) module.

4.2 The Sample Design

As stated previously, the study comprises two phases of the entrepreneurial process: the formulation of entrepreneurial intentions and the intention-behavior relation (firm emergence). To samples were analyzed. To examine the relationship between attitudes towards entrepreneurship, as indicated by perceived desirability and feasibility with entrepreneurial intentions we employed data from the Global Entrepreneurship Monitor provides data to test the determinants of entrepreneurial intentions, the first stage in the entrepreneurial process. More specifically, the data used for this quantitative analysis was obtained from the Adult Population Survey 2007 (APS) for the Puerto Rico region. The APS considered a random sample of 2000 adults (ages 18-64) in Puerto Rico. By assessing these determinants we will test the validity of intentional models in the context of entrepreneurship.

The Global Entrepreneurship Monitor is an international research program that monitors entrepreneurial activity of regions. This research program started in 1999 with 10 countries, and since then it is carried out yearly with a greater number of nations integrated each period (59 countries in 2010). Currently there are hundreds of journal articles and dissertations, both in English and non-English language that employed GEM data (i.e. Verheul et al., 2006; Maritz, 2004; Minniti & Nardone, 2007). For a complete list of journal articles and other research work using data from the Global Entrepreneurship Monitor we refer interested readers to GEM's official website: http://www.gemconsortium.org/.

The first year Puerto Rico participated in this program was 2005. Aponte & Rodríguez (2005) examined the factors that contribute to entrepreneurial activity in Puerto Rico and

Jamaica, using Institutional Theory as conceptual framework. GEM's conceptual model provides the means to identify and measure environmental factors (15) proven to influence business creation. Their analysis was based on the survey (National Expert Survey) carried out to 36 experts in business creation and development. It constituted an initial effort to explore environmental factors that influence creation in the Caribbean region. The sampling selection approach used by GEM required to contact large samples of individuals from the adult population to identify a representative sample of individuals with entrepreneurial intentions (entrepreneurial potential). The APS considered a random sample of 2000 adults (ages 18-64) in Puerto Rico. The national team stratified the total required sample by population proportions in six regional areas: western towns (15 percent), middle-north towns (20 percent), northeastern towns (13 percent), southern towns (15 percent), middle-western towns (16 percent) and metropolitan cities (21 percent). This in turn, provided complete coverage and a representative sample for the population in Puerto Rico. It is important to notice that the Global Entrepreneurship Monitor Consortium requires that all regional teams establish procedures to ensure representative samples. Because of this, each regional team must submit and report all data collection procedures for approval prior conducting data collection activities. For a more detailed description of this research program we refer interested readers to Reynolds *et a*l. 2005.

In order to examine entrepreneurial potential in Puerto Rico using the Global Entrepreneurship data set, we divided a priori the sample in two groups: entrepreneurial potential and general population. The entrepreneurial potential group is composed of those individuals who answered yes to the question: Do you intend to start a business in the next 3 years? Individuals who answered no to this question were included in the general population

group. Also, we compared the general population with individuals involved in entrepreneurial activities. The indicator used for this analysis was the Total Early Stage Entrepreneurial Activity (TEA) as measured by GEM. This measure includes individuals who are either a nascent entrepreneurs or owner-manager of a new business. After classifying a priori the groups, we conducted Analysis of Variance to evaluate the mean differences between samples. Refer to Appendix 1 for a description of variables.

The lack of studies that put forth a comprehensive model of the entrepreneurial process and its transitions has been due mainly to practical issues. The main reason is that entrepreneurial potential (individuals who have intentions of creating a business) and nascent entrepreneurs are unregistered, which makes it difficult to identify samples that allow exploration of the process and comparisons with others who have entrepreneurial intentions but do not manage the required transitions for firm birth. One approach to manage this limitation has been to select large samples of the adult population of regions in order to identify individuals who intend and/or are conducting activities to start businesses by asking: (1) Are you alone or with others trying to start a business? (2) Do you intend to start a business in the next 3 years? Examples of the above are the United States Panel Study of Entrepreneurial Dynamics (Reynolds, 2000) and the Global Entrepreneurship Monitor (Reynolds et al., 2005). The main problem with this sampling selection approach is that it requires extremely large samples of individuals to identify relatively small samples of individuals with entrepreneurial intentions. This in turn, makes the use of this approach extremely costly, particularly if the unit of analysis is the outcome of the entrepreneurial attempt (firm birth). The data from the Global Entrepreneurship Monitor (GEM) 2007, Puerto Rico region, illustrates the limitations in obtaining samples of intentional individuals from large samples of the general population. The

Adult Population Survey (APS) which selects a random sample of 2,000 individuals from the adult population (18-64) showed that roughly 3 percent (53 individuals) were conducting activities to start a business at the time of interview.

Issues of correspondence, put forth by intentional theories of behavior (Ajzen and Fishbein, 1980), which claim that intentions can predict behavior as long as intentions correspond with behavior on target and context, suggest that intentions to act out a specific target behavior and in a particular context are not expected to predict behavior when target and context change or when it is unknown. In this sense, at least a minimal conceptualization of the type of business will need to be specified in order to predict behavior. This suggests using individuals who are actively trying to start a specific business in order to examine the factors conducive to firm emergence. If our study was to employ Global Entrepreneurship Monitor samples to analyze the factors that influence the intentions-behavior relationship our sample will need to be drawn from a population of only 53 individuals, assuming all individuals will be available and willing to participate in this study, which is clearly unrealistic. Because of this, we employed lists from Small Business Development Center (SBDC) in Puerto Rico as a second sample frame to test the influence of exogenous factors on entrepreneurial behavior (second phase of the study)

Tables 10 to 12 show some characteristics of the sample derived from the Global Entrepreneurship Monitor (2007), Puerto Rico Region, specifically the Adult Population Survey (APS). The total valid sample consisted of 1998 individuals between the ages 18 to 64. Most of the respondents were female (72%). Also, 47.7 percent of the sample was between the ages 18 to 44, and 55.1 percent were married. Other characteristics of the sample are discussed later in

the results section with an examination of the factors that indicate entrepreneurial activity and potential.

Table 10 – Gender Adult Population Survey (GEM)

		Frequency	Percent	Valid Percent
Valid	Male	551	27.6	27.6
	Female	1445	72.3	72.4
	Total	1996	99.9	100.0
Missing	System	2	.1	
Total		1998	100.0	

Table 11 – Age Adult Population Survey (GEM)

		Frequency	Percent	Valid Percent
Valid	18-24 Years	262	13.1	14.3
	25-34 Years	277	13.9	15.1
	35-44 Years	334	16.7	18.3
	45-54 Years	398	19.9	21.7
	55-64 Years	559	28.0	30.5
	Total	1830	91.6	100.0
Missing	System	168	8.4	
Total		1998	100.0	

Table 12 – Marital Status Adult Population Survey (GEM)

		Frequency	Percent	Valid Percent
Valid	Single	889	44.5	44.9
	Married	1091	54.6	55.1
	Total	1980	99.1	100.0
Missing	System	18	.9	
Total		1998	100.0	

According to Katz and Gartner (1988) emerging organizations can be identified by four properties: intentionality, resources, boundary and exchanges. More specifically, "birth events" may be based on emergence of an intention to create a business (e.g. having the idea, search for information), boundary-type definitions (e.g. registration, opening, business cards), resource-based definitions (e.g. housing, personnel, inventory) and definitions motivated by exchanges (e.g. first customer, first cash flow). In their article the authors also provide suggestions for selecting samples for research on emerging organizations. Among several they suggest that if intention is the basis to identify emerging organizations one could employ the following sampling approaches: (1) subscription lists to entrepreneurial magazines; (2) membership lists of entrepreneurial organizations; (3) directories of recent graduates and or members of professional societies that have high percentage of self-employed individuals; and (4) client lists of specialized organizations (e.g. Small Business Development Centers, SBDC); (5) participant lists from corporate redesign programs; and (6) participant lists from conferences on entrepreneurship.

In order to accomplish the main objective of study (to develop a model of firm birth by analyzing the factors that influence the intention-behavior relationship), in addition to complying with issues of correspondence posed by intentional models, our second sample was drawn from the client lists of a specialized organization (Small Business Development Centers in Puerto Rico). Correspondence and specificity means that intentions and perceptions must be assessed in relation to the particular behavior of interest, and the specified context must be the same as that in which the behavior is to occur. In this sense, individuals may have intentions to start a business in a given time, but if the target and context has not been acknowledged (specified) the theory may not be predictive of the outcome behavior (firm birth). Individuals who have already started activities towards creating an enterprise are more likely to have the object of behavior specified as opposed to individuals that indicated to have intentions in a near future (within 3 years). This holds true for individuals who already concreted at least one activity towards venture creation (visiting SBDCs). Although we recognized potential limitations of this sample selection approach we strongly believe it helps accomplish the purpose of the study in practical terms, while complying with key theoretical assumptions. As Gatewood et al. (1995) puts forth: *"…clients of an SBDC are obviously different from the general population in that they have taken one concrete step in the direction of organizing a new venture. They are also different from sophisticated repeat-entrepreneurs who would not require the services offered by SBDCs. On the other hand, SBDC clients represent an important segment of the population to which we hope our findings will generalize – individuals seeking to start businesses."*

According to several studies (e.g. Lia et al., 2005; Carter et al., 1996) it takes approximately 3 years before individuals indicate to have given up efforts to start a business. Because of this, the initial sample frames obtained from SBDCs consisted of individuals who requested assistance during fiscal year 2007-2009. Nonetheless, the specificity of the population (strictly delimited) required in addition to low response rates encountered during the data collection phase required us to expand the population. Because of this, individuals who requested assistance in 2010 were also included. This allowed us to select from a sample of intended individuals and retrospectively observe the outcome of entrepreneurial attempt (firm birth), and the exogenous factors that influence the intention-behavior relationship.

The sample frames provided by SBDCs in Puerto Rico, consisted of 384 nascent entrepreneurs. Contrary to GEM, the sample for this stage is not representative, mainly because not every one who starts a business request assistance from entrepreneurial support programs such as Small Business Development Centers (SBDCs). Also, our sample consists of individuals who requested assistance of SBDCs in the middle-western towns, which represents 16 percent of the population in Puerto Rico. Unfortunately, we were not able to get support from other SBDCs in Puerto Rico. Another important limitation in terms of this sample is that to be considered in the study individuals must classify as nascent entrepreneurs. In this sense, the sample included those who requested assistance from the SBDC at early stages and their business was still on the idea development stage at the time they requested assistance. This selection criterion was available in SBDC database. Basically, when a client visits the facilities of SBDC to request assistance, the consultant who manages the case requests a status on the venture prior providing assistance. A nascent status is assigned to individuals who request assistance to further develop

an idea that has not yet been materialized in a business. As stated by an SBDC representative, nascent entrepreneurs are those who have no sales at the time of service request, most have no location, are looking to develop a business plan to get finance and request information on how to set up the business. Although the consultant that handles the case for the first time ask several questions in order to assign a status to the client (potential business), there is no record in terms of how far along in the venture they are (i.e. how many activities to start the business have been conducted or how much time and effort they have spend in developing the business concept). In this sense, although we acknowledge that some nascent entrepreneurs may be more ahead than others in the process, which may affect the final outcome (behavior), the sample frame employed for this stage of the study did not contain information that will distinguish these.

Given that the population was strictly delimited we developed a data collection strategy to ensure as much observations as possible. Our strategy required 5 call backs before discarding a potential respondent. Also, we did not draw a sample size from the population under study and contacted all nascent entrepreneurs. Two factors influenced response rates: (1) out of service telephone numbers or changed telephone numbers, or (2) individuals did not wish to participate in the study. Given that abandonment of startup effort may be interpreted by individuals as failure, it will be reasonable to believe that individuals who abandon the startup effort may be more unwilling to participate in the study. However, the majority of contacted individuals were very willing to collaborate in the study. Also, most non-responses derived from changes or out of service telephone numbers changed and not because unwillingness to participate in the study. This in turn may suggest that respondents and non-respondents groups may not be as distinctive in terms of status of the venture, since non responses were mostly due to other circumstances

(telephone changes). Data was obtained through telephone interviews. 944 calls were made and 106 surveys were completed, were 38 started the business, 19 abandon the start-up efforts and 49 continue conducting activities to start the business but have not either started (generated sales) nor abandon start-up efforts.

Table 13 to 16 summarized characteristics of the sample (nascent entrepreneurs) and their entrepreneurial initiatives. More than 50 percent of the sample was between 21 to 40 years of age (61%). Contrary to the sample from the Adult Population Survey (GEM, 2007) our sample consisted of more men than females (56% and 43%) respectively. The majority of respondents (63.4%) reported a household income lower than $50,000, which suggest that this population is low or middle class. Also, 66.7 percent of nascent entrepreneurs reported that the initial capital required to start operations was less than $50,000.

Table 13 – Age Sample of Nascent Entrepreneurs (SBDCs)

		Frequency	Valid Percent	Cumulative Percent
Valid	21 - 30 years	16	15.2	15.2
	31 – 40 years	48	45.7	61.0
	41 – 50 years	25	23.8	84.8
	More than 50 years	16	15.2	100.0
	Total	105	100.0	
Missing	System	1		
Total		106		

Table 14 – Gender Sample of Nascent Entrepreneurs (SBDCs)

		Frequency	Percent	Valid Percent
Valid	Male	60	56.6	56.6
	Female	46	43.4	43.4
	Total	106	100.0	100.0

Table 15 – Household Income Sample of Nascent Entrepreneurs (SBDCs)

	In USA dollars	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than $10,000	15	14.2	14.9	14.9
	10,000 - 14,999	13	12.3	12.9	27.7
	15,000 - 24,999	14	13.2	13.9	41.6
	25,000 - 34,999	15	14.2	14.9	56.4
	35,000 - 49,999	7	6.6	6.9	63.4
	50,000 - 74,999	20	18.9	19.8	83.2
	75,000 - 99,999	7	6.6	6.9	90.1
	100,000 - 149,999	7	6.6	6.9	97.0
	150,000 - 199,999	1	.9	1.0	98.0
	200,000 or more	1	.9	1.0	99.0
	Refuses	1	.9	1.0	100.0
	Total	101	95.3	100.0	
Missing	System	5	4.7		
Total		106	100.0		

Table 16 – Initial Capital Required for Start-up (SBDCs)

	In USA dollars	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than $5000	17	16.0	16.2	16.2
	5,000 - 9,999	18	17.0	17.1	33.3
	10,000 - 14,999	10	9.4	9.5	42.9
	15,000 - 19,999	5	4.7	4.8	47.6
	20,000 - 24,999	4	3.8	3.8	51.4
	25,000 - 29,999	2	1.9	1.9	53.3
	30,000 - 34,999	3	2.8	2.9	56.2
	35,000 - 39,999	5	4.7	4.8	61.0
	40,000 - 44,999	1	.9	1.0	61.9
	45,000 - 49,999	5	4.7	4.8	66.7
	More than 50,000	35	33.0	33.3	100.0
	Total	105	99.1	100.0	
Missing	System	1	.9		
Total		106	100.0		

4.3 Instrument Design and Data Management

A survey was developed to measure the influence of exogenous factors. Measurement scales for each variable were derived from existing literature. Refer to appendix section for the data collection instrument and variable list. Academics, consultants from the SBDCs and entrepreneurs were consulted to improve the data collection instrument. Changes in

measurement scales and wording were made based on these consultations. The surveys were administered via telephone during the period of January 2011 to May 2011.

Table 17 demonstrates the results from the reliability analysis. We employed Cronbach's alpha coefficient to examine the internal consistency of the scales. This measure of reliability focuses on the internal consistency of the set of items forming the scale. The closer Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale. However, values ranging $.8 > \alpha \geq .7$ are considered acceptable (George and Mallery, 2010). In reliability analysis, internal consistency is used to measure the reliability of a summated scale where several items are summed to form a total score. If internal consistency of the scales is high the analysis of the data could use the summated scales and not the individual items. Our table shows that human capital, facilitating conditions and inhibitors appear to have good internal consistency. Attitudes ($\alpha = .620$), intention ($\alpha = .608$) and financial ($\alpha = .622$) demonstrate questionable reliability. Displacement events ($\alpha = .469$) and social capital ($\alpha = .571$) show poor internal consistency. It is important to notice that Cronbach's alpha will generally be low if the data is multi-dimensional, as is expected in this case. In order to examine multidimensionality we conducted Principal Components Analysis.

Table 17 - Reliability Analysis

Variable Name	Alpha	Sig.	Item scales in Survey
Attitude	.620	.000	PD1, PD2, PD3, PD4, PD5, PF1, PF2, PF3, PF4, PF5, PF6, GA1
Intention	.608	.000	EF1, PrS1, Cm1
Human Capital	.773	.000	HCi1, HCi2, HCi3, HCe1, Hcsme1, HCm1, Hcedu1, HCi4, Hce2, Hcsme2, Hcedu2
Social Capital	.571	.001	SC1, SC2, SC3, SC4, SC5, SC6, SC7, SC8
Financial Capital	.622	.000	FC1, FC2,FC3,FC4, FC5, FC6, FC7, FC8
Facilitators	.760	.000	F1, F2,F3,F4,F5, F6, F7, F8
Inhibitors	.868	.003	I1,I2,I3,I4
Displacement Events	.469	.000	DE1, DE2,DE3, DE4, DE5,DE6,DE7

Tables 18 to 23 show the results of the principal components analysis. The main objective of factor analysis is to define the underlying structure among variables (Hair et al., 2008). The results from the reliability analysis in addition to theoretical grounds suggest that the attitudes, human capital, social capital, financial capital, inhibitors, facilitators and displacement events posses underlying dimensions formed by a set of different variables. For example, attitudes have been viewed as desirability and feasibility perceptions (i.e. Shapero, 1982; Kuerger et al., 2000). Human capital has also been conceptualized in multiple manners including as education, experience, among others.

Factor analysis was conducted using the principal components method where the total variance in the data is considered. This method is recommended when the primary concern is to determine the minimum number of factors that will account for maximum variance in the data (Malhotra, 2002). The number of factors extracted for attitudes, human capital, social capital, financial capital, displacement events and conditions (inhibitors and facilitators) was determined based on eigenvalues. In this approach, only factors with eigenvalues greater than 1.0 are retained; the other factors are not included. In other words, only factors with a variance greater than 1.0 are included. Another approach considered in the analysis was the cumulative percentage of variance. It is recommended that the factors extracted should account for at least 60 percent of the variance (Malhotra, 2002). We employed the most commonly used method for rotation varimax procedure. This method of rotation minimizes the number of variables with high loadings on the factor and enhances interpretability of the factors.

The tables (18 to 23) demonstrate that the data is multi-dimensional, as expected. This in turn gives an explanation on why Cronbach's alphas in the reliability analysis were relatively low. Appropriateness of the factor models was tested by the Barlett's test of sphericity, which can be used to test the null hypothesis that the variables are uncorrelated in the population. If this hypothesis cannot be rejected, the appropriateness of the factor analysis should be questioned. Another useful statistic is the Kaiser-Meyer-Olkin (KMO) measure of sample adequacy. Small values of the KMO statistic indicate that the correlations between pairs of variables cannot be explained by other variables and that factor analysis may not be appropriate. According to Malhotra (2002) a value greater than 0.5 is usually desirable. The tables include

the cumulative variance percent, the factor loadings (coefficient used to express the standardized variables in terms of the factors) and the percent variance explained by each factor.

Table 18 demonstrates the multidimensionality of the attitude construct. Measures of the Bartlett's Test of Sphericity (χ^2 =352.261, p = .000) and KMO (.734) show that the factor model is appropriate. Three factors were extracted (eigenvalues > 1.0). Two factors (1) Confidence and Feasibility of Start-up, and (2) Desirability of Start-up Activities account for over 40 percent of the cumulative variance. This is consisted with the literature that states that the attitude construct is a component of desirability and feasibility perceptions. However, we found that there is another underlying factor related to emotions (labeled Emotions of Tension and Stress) that explain 10.048 percent of the variance.

Table 18 - Principal Component Analysis Attitudes

Factor	Factor Interpretation (% variance)	Loading	Variables included in Factor
Attitudes (Cumulative Variance 57.016 %)			
F1	Confidence and feasibility of start-up	.813	Sure of yourself and capabilities
	(% 29.138)	.792	Feasible to start the business
		.791	Confident of success
		.655	Desirable to start business
		.554	Overall attitude to start
		.416	Perceived knowledge and skills
F2	Desirability of start-up activities	.831	Satisfaction with activities to start
	(% 17.830)	.734	Enjoy activities to start business
		.651	Simplicity of start-up activities
		.626	Enthusiastic during start-up
F3	Emotions of tension and stress	.836	Tense during process
	(% 10.048)	.501	Overwhelmed during process
Kaiser-Meyer-Olkin Measure of Sampling Adequacy .734 Bartlett's Test of Sphericity Approx. Chi-Square 352.261 df 66 Sig..000			

Table 19 also demonstrates multidimensionality but for the human capital construct. The Bartlett's Test of Sphericity (Chi-Square 505.889, p = .000) and KMO (.743) show that the factor model is appropriate. Three factors were extracted (eigenvalues > 1.0) with a cumulative variance of 65.332 percent: (1) Managerial & Entrepreneurial Experience, (2) Industry

Experience, and (3) Entrepreneurial Education. In total these explain 65.332 percent of the variance. Industry experience explains almost half of the total variance (% 31.246).

Table 19 - Principal Component Analysis Human Capital

Factor	Factor Interpretation (% variance)	Loading	Variables included in the Factor
Human Capital (Cumulative Variance 65.332%)			
F1	Managerial & Entrepreneurial Experience (% 20.172)	.615 .808 .796 .757 .795 .771	Previously own business Manage SME Management experience Influence entrepreneurial experience Influence SME experience Influence management experience
F2	Industry Experience (% 31.246)	.830 .764 .786 .779	Experience industry sector Similar knowledge previous jobs Similar competitors & clients Influence industry experience
F3	Entrepreneurial Education (% 13.915)	.897 .910	Entrepreneurial training Influence entrepreneurial training
Kaiser-Meyer-Olkin Measure of Sampling Adequacy .743 Bartlett's Test of Sphericity Approx. Chi-Square 505.889 df 66 Sig. .000			

Table 20 demonstrates the results of the factor analysis for the social capital construct.. Measures of the Bartlett's Test of Sphericity (Chi-Square 178.146, p = .000) and KMO (.552) show that the factor model is appropriate. Note that although the KMO is lower when compared to other factor models in this section; it is above the suggested threshold (> .05). Four factors were extracted (eigenvalues > 1.0) with a cumulative percent variance of 70.953. These are: (1) Formal Support Institutions, (2) Informal Support Institutions (3) Entrepreneurial Team, and (4) Financial Institutions. Interestingly, social capital derives from informal sources and formal sources. These two factors account for over 40 percent of the cumulative variance.

Table 20 - Principal Component Analysis Social Capital

Factor	Factor Interpretation (% variance)	Loading	Variables included in the Factor
Social Capital (Cumulative Variance 70.953%)			
F1	Formal Support Institutions (% 24.030)	.840 .866	Entrepreneurial support institutions Entrepreneurial networks
F2	Informal Support Institutions (% 19.558)	.741 .899 .608	Entrepreneurial parents Entrepreneurial family Entrepreneurial friends
F3	Entrepreneurial Team (% 15.350)	.830 .841	More than 1 owner Entrepreneurial team
F4	Financial Institutions (% 12.015)	.749	Financial institutions
Kaiser-Meyer-Olkin Measure of Sampling Adequacy .552 Bartlett's Test of Sphericity Approx. Chi-Square 178.146 df 36 Sig. .000			

Table 21 demonstrates the multidimensionality of financial capital. Measures of the Bartlett's Test of Sphericity (Chi-Square 109.331, p = .000) and KMO (.600) show that the factor model is appropriate. Two factors were extracted: (1) Formal Sources of Financial Capital, and (2) Informal Sources of Financial Capital. These two account for 59 percent of the cumulative variance. Formal sources of financial capital include personal credits, bank credits, and credits from suppliers and customers. Contrary, informal sources include personal savings, friends' money and family money.

Table 21 - Principal Component Analysis Financial Capital

Factor	Factor Interpretation (% variance)	Loading	Variables included in the Factor
Financial Capital (Cumulative Variance 58.907%)			
F1	Formal sources of financial capital (% 36.956)	.867 .764 .683	Bank credits Personal credit Supplier/customers credits
F2	Informal sources financial capital (% 21.951)	.773 .809 .579	Personal savings Family money Friends money
Kaiser-Meyer-Olkin Measure of Sampling Adequacy .600 Bartlett's Test of Sphericity Approx. Chi-Square 109.331 df 21 Sig. .000			

Table 22 demonstrates the results of the factor analysis for the facilitating and inhibiting conditions construct. Measures of the Bartlett's Test of Sphericity (Chi-Square 438.350, p =

.000) and KMO (.765) show that the factor model is appropriate. Four factors were extracted (eigenvalues > 1.0) with a cumulative percent variance of 68.272. One factor labeled Inhibitors (F1) included the inhibiting conditions identified in the literature. This factor accounted for 32.867 percent of the variance. The other factors (1) Supporting Institutions, (2) Key business Stakeholders, and (3) Financial Resources accounted for the rest of the percent of variance explained (35.405 %).

Table 22 - Principal Component Analysis Facilitating and Inhibiting Conditions

Factor	Factor Interpretation (% variance)	Loading	Variables included in the Factor
Facilitating and Inhibiting Conditions (Cumulative Variance 68.272%)			
F1	Inhibitors (% 32.867)	.891 .668 .892 .861	Taxes Licenses and Registration Norms that regulate the business Governmental institutions
F2	Supporting Institutions (% 17.095)	.480 .742 .828 .578	Entrepreneurial support programs Entrepreneurial networks Entrepreneurial Training programs Entrepreneurial consultants
F3	Key Business Stakeholders (% 9.757)	.497 .748 .811	Qualified workers Accessibility suppliers Accessibility of clients
F4	Financial Resources (% 8.553)	.841	Existence of financial resources
Kaiser-Meyer-Olkin Measure of Sampling Adequacy .765 Bartlett's Test of Sphericity Approx. Chi-Square 438.350 df 66 Sig. .000			

Table 23 demonstrates the results of the factor analysis for the displacement events construct. Measures of the Bartlett's Test of Sphericity (Chi-Square 103.558, p = .000) and KMO (.544) show that the factor model is appropriate. Four factors were extracted (eigenvalues > 1.0) with a cumulative percent variance of 66.478. Note that although the KMO is low when

compared to other constructs, it is above the suggested threshold (> .05). Three factors were extracted (eigenvalues > 1.0) with a cumulative percent variance of 66.478. These were labeled: (1) Negative Life Events, (2) Positive Life Events, and (3) Job Frustration. Overall, the extracted factors resemble those identified in the literature,

Table 23 - Principal Component Analysis Displacement Events

Factor	Factor Interpretation (% variance)	Loading	Variables included in the Factor
Displacement Events (Cumulative Variance 66.478%)			
F1	Negative life events (% 27.413)	.874 .884	Loss of family member Divorce
F2	Positive life events (% 19.837)	.491 .834 .731	Birth of child Marriage Graduation
F3	Employment frustration (% 19.228)	.812 .838	Job frustration Loss of employment
Kaiser-Meyer-Olkin Measure of Sampling Adequacy .544 Bartlett's Test of Sphericity Approx. Chi-Square 103.558 df 21 Sig. .000			

Overall, the tables in this section provide the cues for the decisions made in the analysis section. More specifically, the decision of including the individual items in the multivariate regression analyses presented in the next section. As previously stated, if internal consistency of the scales is high the analysis of the data could use the summated scales and not the individual

items. The tables for the reliability analysis showed that human capital, facilitating conditions and inhibitors appear to have good internal consistency. Attitudes (α = .620), intention (α = .608) and financial (α = .622) demonstrate questionable reliability. Displacement events (α = .469) and social capital (α = .571) show poor internal consistency. Conversely, the principal components analysis revealed the multidimensionality of the data, as expected. This in turn, explains why the Cronhach's alphas in the reliability analysis were relatively low. Moreover, the factor analysis uncovered underlying dimensions. These were congruent with those found in the entrepreneurship literature and proved that the data collection instrument is comprised of the factors intended. In the next section, we discuss the results of the study. First we present the results from our examination of exogenous factors on entrepreneurial potential (individual with intentions to start a business) and early-stage entrepreneurial activity (TEA). Results derive from data from the Global Entrepreneurship Monitor, Puerto Rico Region, specifically the Adult Population Survey 2007. Inferential techniques were used to analyze the data (ANOVA). Later we present the results from the analyses conducted using the sample of nascent entrepreneurs obtained from SBDCs. This part of the analysis included: (1) analysis of variance to identify the differences between entrepreneurial outcome groups, (2) multivariate regression analysis to test the hypothesis of study, and (3) structural equation modeling in attempt to develop a model of entrepreneurial behavior.

5. RESULTS AND DISCUSSION

This study attempts to provide insights into the entrepreneurial process by analyzing the antecedents of entrepreneurial intentions; and the factors that influence the transition from intentions to entrepreneurial behavior (firm birth) in Puerto Rico. The study employs quantitative methodology to test the determinants of entrepreneurial intentions, which have been strongly supported by the literature (planned behavior) and the factors that influence the intention-behavior relationship. Moreover, the study will analyze how exogenous factors influence attitudes towards entrepreneurship (antecedents of intentions) and the gap between intentions and behavior. The specific objectives of the study are: (1) to verify the determinants (antecedents) of entrepreneurial intentions in Puerto Rico; (2) to determine the influence of exogenous factors (personal and situational) on the intention-behavior relationship from nascent entrepreneurs in Puerto Rico; (3) to evaluate how exogenous factors (personal and situational) influence entrepreneurial attitudes in Puerto Rico.

The findings of the study provide numerous contributions. First, by evaluating the key determinants of intentions we increase our understanding of behavior, which can lead to the development of policy that influences entrepreneurial behavior through attitudes. Second, analyzing the key assumptions of theories of planned behavior, specifically determinants of intentions will put to the test the validity of this theory within the entrepreneurial field, specifically in the context of Puerto Rico. Also, the study attempts to provide theory driven insights into the factors that lead to successful entrepreneurial outcomes. Studies that address the link between entrepreneurial intentions and behavior show inconsistent results. Moreover, these

studies have been mainly descriptive and do not possess an integrated conceptual model that allows explanations for the relationships. By analyzing the factors that influence behavior we will be able to provide a complete picture of the entrepreneurial process: from the formulation of entrepreneurial ***intention*** to successful entrepreneurial ***behavior*** (firm emergence). Examining the transitions during the venture process (from intentions to firm behavior) increases our understanding of the entrepreneurial process and the factors that lead to the emergence of an organization, given that the relationship between intentions and behavior is imperfect. This in turn, is one of the main contributions of this study mainly because empirical studies that address the gap from intentions to behavior have been limited, mainly due to practical issues. Entrepreneurial potential (individuals who have intentions of creating a business) and nascent entrepreneurs are unregistered, which makes difficult to identify samples that allow exploration of the process and comparisons with others who have entrepreneurial intentions but do not manage the required transitions for firm birth.

In this study we employed samples from two different sources: (1) the Global Entrepreneurship Monitor Puerto Rico Region (2007); and (2) a sample (106) of Small Business and Development Centers (SBDCs). Using data from the Global Entrepreneurship Monitor Puerto Rico Region we examined intentional models of individuals with entrepreneurial intentions with those of the general population. In order to analyze the effect of exogenous factors (personal and situational) on entrepreneurial behavior (i.e. firm birth) and on attitudes towards entrepreneurship we conducted a telephone survey with clients of SBDCs in Puerto Rico. The analysis of this quantitative study was performed using SPSS© (version 19.0). The analysis includes descriptive statistics, inferential statistics (ANOVA), cross tabulations and

linear regression. Structural Equation Modeling (SEM) related to the proposed model and other alternative models of venture creation was conducted using AMOS© (version 19.0).

In this section we present the results of the study. First, we present the results from the analysis of the Global Entrepreneurship Monitor (GEM) Puerto Rico Region. The main objective of this analysis was to examine the difference of potential entrepreneurs (individuals with intentions) and the general population. This will provide insights into the determinants of intentions. The data used for this section was obtained from the Adult Population Survey 2007 (APS). The sampling selection approach used by GEM required to contact large samples of individuals from the adult population to identify a representative sample of individuals with entrepreneurial intentions (entrepreneurial potential). The APS considered a random sample of 2000 adults (ages 18-64) in Puerto Rico. The differences between groups - individuals who have entrepreneurial intentions, individuals involved in early stage entrepreneurial activity and individuals who do not have the intention of creating a business - were analyzed using quantitative methodology, specifically Analysis of Variance (ANOVA).

Second, we present the findings for the Small Business Development Center sample. The main difference with this sample is that all individuals already manifested an intention to start a business, and we are able to observe the outcome (behavior) of their manifested intention (started the business, still working on starting the business or abandon the start-up effort). This analysis provided insights into the factors (personal and environmental) that affect the entrepreneurial process and outcomes (behavior). More specifically, in this section we present results from the analysis of variance (ANOVA) to identify differences between entrepreneurial outcome groups.

Also, we present the multivariate regression results for human capital, social capital, financial capital (personal factors), and facilitators, inhibitors, displacement events (environmental factors) on attitudes and behavior. The results described in this section allowed us to test the hypotheses of the study (H_1 to H_{12}).

Finally, we present the results of one Structural Equation Model developed to examine the proposed model. Alternative models that help provide insights into the entrepreneurial process are discussed in Appendix 4. Jıreskog (1993) distinguished three scenarios for testing structural equation models: strictly confirmatory, alternative models and model generating. In this study we employed the model generating scenario in which we postulated a model strictly based on the proposed theory and tested the fit of the hypothesized model. In Appendix 4 we proceeded attempt to modify and re-estimate alternative models In this sense, we bridged the confirmatory scenario to an exploratory scenario in order to create a model that helps understand the complex relationships immersed in the process of venture creation in Puerto Rico.

5.1 Entrepreneurial Potential and Early Stage Entrepreneurial Activity: Evidence from the Global Entrepreneurship Monitor Puerto Rico Region

In this section we present the findings of our exploration on entrepreneurial activity and potential in Puerto Rico. It employs descriptive and inferential statistics to describe entrepreneurial activity in the region, examine differences between potential entrepreneurs (individuals who manifest intentions to create a business) and total early stage entrepreneurial activity (individuals actively pursuing entrepreneurship) and the general population. Differences

between the general population group, potential entrepreneurs, and the early stage entrepreneurial group is presented in terms of attitudes towards entrepreneurship and other variables (education, age, prior exposure, among others) considered exogenous factors by the literature on planned behavior. Analysis of variance (ANOVA) was conducted to examine the differences among groups. This technique examines the differences in the mean values of the dependent variable associated with the effect of the controlled independent variables, after taking into account the influence of the uncontrolled independent variables (Malhotra, 2002). Basically, it tests the means for two or more populations. Rejecting the null hypothesis will indicate that the means for the populations are not equal. Also a description of the state of entrepreneurial activity in the region is provided. Entrepreneurial activity prevalence rates are summarized using descriptive statistics based on the Global Entrepreneurship Monitor definitions: nascent entrepreneurship rate, new business ownership rate, established business ownership rate and total early stage entrepreneurial activity. The results of this section, although descriptive, provide a baseline to understand entrepreneurial potential (intentions) and the role of exogenous factors (personal and environmental). Also, the results help establish context specific initiatives that promote entrepreneurship and economic development in the region. Refer to Appendix for Description of Variables.

This section is divided as follows. First, we present entrepreneurial prevalence rates in Puerto Rico using 4 key indicators of the Global Entrepreneurship Monitor (GEM): nascent entrepreneurship rate, new business ownership rate, established business ownership rate, and total early stage entrepreneurial activity. Second, we discuss the findings concerning differences between potential entrepreneurs, individuals involved in total early stage entrepreneurship (TEA)

and the general population in terms of attitudes towards entrepreneurship. Finally, we present the results that will shed light into the differences between potential entrepreneurs and the general population in terms of exogenous factors.

Table 24 show entrepreneurial prevalence rates in Puerto Rico. The percentages in the table show low rates for all for indicators of entrepreneurial activity in the region. Only 1.5 percent of the adult population in the region is involved in conducting activities to start-up a business or is at the time of interview the owner-manager of a new business. Moreover 1.8 percent of the population is owner-manager of an established business. Finally, only 2.8 percent are involved in any type of early stage of entrepreneurial activity.

Table 24 - Entrepreneurial Activity Prevalence Rates

Entrepreneurial Activity Indicator	Percent
Nascent Entrepreneurship Rate	1.5
New Business Ownership Rate	1.5
Established Business Ownership Rate	1.8
Total Early Stage Entrepreneurial Activity	2.8

Note: Prevalence rates are calculated as a percentage of the general adult population valid sample (n = 1998).

Table 25 summarizes the results of attitudes towards entrepreneurship for both groups: entrepreneurial potential and general population. The entrepreneurial potential group consists of individuals from the adult population who intend to start a business within 3 years at the time of interview. These results are categorized using Shapero's dimensions: desirability and feasibility

perceptions. The findings suggest differences among groups in terms of both dimensions. According to the results, perceiving good opportunities to start-up, indicator of desirability perceptions is significantly different for both groups. More specifically, 52 percent of individuals who have intentions to start a business perceived good opportunities. This value is significantly higher when compared to the general population, were only 34 percent perceived good opportunities. In this sense, this finding provides support to Shapero's perceived desirability, since it suggests that individuals with entrepreneurial intentions perceive more opportunities than the rest of the population. Another indicator related to desirability perceptions is the perceived status of entrepreneurial career in a region. According to literature on intentions in order to perceive a behavior desirable, it must be valued by the region (culture). The results also support this notion, since more individuals in entrepreneurial potential group consider that growing a successful business provides high status. This indicator was also significantly different between both groups. Perceived feasibility was also analyzed. This dimension refers to the extend individuals believe they have the required knowledge and skills to execute a given behavior, in this case start a business. The results show differences between the entrepreneurial potential group and the general population, since 81 percent of the individuals with entrepreneurial intentions believes they have knowledge and skills to start a business. This is significantly higher when compared to only 43 percent for the general population.

Table 25 - Attitudes Entrepreneurial Potential and General Population

Perceptual Variable	Entrepreneurial Potential	General Population	Total	F-Value	Sig.
Desirability Perceptions					
Sees good opportunities for starting a business in next 6 months	52 percent n = 88	34 percent n = 1101	35 percent n = 1189	12.457	.000
Starting a business is considered a good career choice	65 percent n = 91	72 percent n = 459	71 percent n = 550	1.950	.163
Persons growing a successful new business receive high status	77 percent n = 90	65 percent n = 453	67 percent n = 543	4.389	.037
In my region new businesses receive a lot of media coverage	62 percent n = 90	58 percent n = 452	58 percent n = 542	.619	.432
Feasibility Perceptions					
Has the required knowledge and skills to start a business	81 percent n = 93	43 percent n= 1199	46 percent n = 1292	50.557	.000

The results show some support for the impact of attitudes on entrepreneurial potential since three out of five indicators showed significant differences while two measures (perceiving entrepreneurship a good career and media coverage of entrepreneurs) did not show significant differences between groups. These findings concur with propositions made by Ajzen's Theory of Planned Behavior (1991), Shapero's Model of Entrepreneurial Event (1982) and Krueger and Brazeal's model of Entrepreneurial Potential (1994). Also, the findings are consistent with Alvarez et al. (2011) who indicate that perception of opportunities to start a business influence

entrepreneurship. Their study also employed data from the Global Entrepreneurship Monitor for 19 Spanish regions during the period of 2006 to 2009. In terms of the variables that were not found significantly different between groups we argue that it may be due because when compared with the other measures, these two are not so directly linked to attractiveness towards entrepreneurship. For example, new businesses receiving media coverage will not impact desirability unless coverage was positive, either by illustrating success stories or role models. Moreover, considering business start-up a good career choice does not impact desirability unless it is associated with an outcome (profitable business) or context (type of business). On the contrary, the measure "growing a successful new business" was found significant since it acknowledges a positive outcome of the entrepreneurial career (successful business).

Table 26 shows differences between groups for prior exposure, entrepreneurial friends, education, employment status, gender, age and marital status. Six out of seven variables are significantly different between groups. Prior exposure seems to have an effect on entrepreneurial potential. Individuals with entrepreneurial intentions seem to have prior exposure since 6 percent of the sample discontinued a business prior the interview as opposed to only one percent for the general population. Personally knowing a person who started a business also seems to be present for the entrepreneurial potential group. A significantly higher amount of individuals who have entrepreneurial intentions have entrepreneurial friends (68 percent). Both groups also differ in terms of education and employment status. The majorities of individuals who possess entrepreneurial intentions have university background (83 percent) and were employed at the time of interview (63 percent). These findings suggest that human capital as well as social capital play role in entrepreneurship. In terms of other characteristics, the entrepreneurial

potential group is in average in their thirties while the general population average is over forty. Also women seem less inclined towards entrepreneurship, particularly since the average for the general population is significantly higher than for the entrepreneurial potential group. The findings in terms of human and social capital variables go in accordance with other studies. For example Krueger and Casrud (1993) conducted a test of Shapero's model and showed that exogenous factors such as prior exposure to entrepreneurial activity influence desirability and feasibility perceptions, and consequently intentions. Also, Krueger (1993) found that a person's prior exposure to entrepreneurship had a positive relationship with perceived desirability and feasibility of starting a business. These two were found positively related to entrepreneurial intentions. Reynolds et al. (2004) those not involved in the labor force (i.e. unemployed) were less likely to start-up businesses, similar to what was found in this analysis, which shows that individuals who have intentions to start a business are currently employed. In terms of social capital measures (i.e. entrepreneurial friends) the existence of entrepreneurial role models has been found to only weakly predict future entrepreneurial behavior (Brockhous and Horwitz, 1986; Carsrud et al. 1987; Scott and Twomey, 1988). However, the role model's subjective impact is a strong predictor. In this sense, role models affect entrepreneurial intentions, more than these affect behavior itself. Finally, similar to Reynolds et al. (2004) but contrary to other literature that suggest push factors (i.e. unemployment) may serve as catalytic of entrepreneurial activity, our analysis found that those involved in the labor force are more likely to start-up businesses.

Table 26 - Exogenous Factors Entrepreneurial Potential and General Population

Exogenous factors	Entrepreneurial Potential	General Population	Total	F-Value	Sig.
Prior Exposure	6 percent n = 229	1 percent n = 1750	2 percent n= 1979	20.653	.000
Entrepreneurial Friends	68 percent n = 97	30 percent n = 1216	33 percent n= 1313	61.579	.000
Gender	59 percent n = 229	74 percent n = 1748	73 percent n= 1977	24.253	.000
Employment Status	63 percent n = 227	45 percent n = 1745	47 percent n= 1972	26.651	.000
Age	33 years n = 229	42 years n = 1749	41 years n= 1978	51.621	.000
Education	83 percent n = 229	58 percent n = 1744	61 percent n= 1973	50.542	.000
Marital Status	53 percent n = 227	55 percent n = 1734	55 percent n= 1961	.530	.467

Table 27 summarizes the results of attitudes towards entrepreneurship for the total early stage entrepreneurial activity (TEA) group and the general population. Individuals involved in total early stage entrepreneurial activity are those who are actively conducting activities towards creating a business (nascent entrepreneurs) or owner-managers of a new business. Similar to table 3, the results are categorized using Shapero's dimensions: desirability and feasibility perceptions. Overall the findings suggest differences among groups in terms of both dimensions.

Perceiving good opportunities to start-up is significantly different for both groups. More specifically, 55 percent of individuals who are actively conducting activities to start-up a business or are owner-manager of a new business perceived good opportunities. This value is significantly higher when compared to the general population, were only 35 percent perceived good opportunities. In this sense, this finding provides support to Shapero's perceived desirability, since it suggests that individuals with entrepreneurial who operate entrepreneurial intentions (entrepreneurial behavior) perceive more opportunities than the rest of the population. However, the other perceived desirability indicators were not significantly different between groups, suggesting that individual perceptions of available opportunities tend to be more related to start-up. This aspect may suggest that desirability exerts different roles in the formulation of entrepreneurial intentions and actively enacting entrepreneurial behavior. Perceived feasibility was also analyzed. This dimension refers to the extend individuals believe they have the required knowledge and skills to execute a given behavior, in this case start a business. The results show differences between the entrepreneurial group and the general population, since 91 percent of the individuals actively involved in total early stage entrepreneurial activity believes they have knowledge and skills to enterprise. This is significantly higher when compared to only 45 percent for the general population. This is analogous to Krueger, Reilly and Carsrud (2000) who suggest feasibility perceptions explain more variance on intentions that other antecedents.

Table 27 - Attitudes Total Early Stage Entrepreneurial Activity and General Population

Perceptual Variable	Total Early Stage Entrepreneurial Activity	General Population	Total	F-Value	Sig.
Desirability Perceptions					
Sees good opportunities for starting a business in next 6 months	55 percent n = 22	35 percent n = 1181	35 percent n = 1203	3.807	.050
Starting a business is considered a good career choice	73 percent n = 22	70 percent n = 542	71 percent n = 564	.051	.821
Persons growing a successful new business receive high status	76 percent n = 21	67 percent n = 534	67 percent n = 555	.768	.381
In my region new businesses receive a lot of media coverage	64 percent n = 22	58 percent n = 533	58 percent n = 555	.260	.610
Feasibility Perceptions					
Has the required knowledge and skills to start a business	91 percent n = 23	45 percent n= 1282	46 percent n = 1305	19.341	.000

Table 28 shows differences between the total early stage entrepreneurial activity (TEA) group and the general population for prior exposure, entrepreneurial friends, education, employment status, gender, age and marital status. Four out of seven variables are significantly different between groups. Such as in the case of the entrepreneurial potential group, prior exposure seems to have an effect on start-up. More specifically, individuals who pursue entrepreneurship seem to have prior exposure since eleven percent of the sample discontinued a business prior the interview as opposed to only two percent for the general population. Personally knowing a person who started a business also seems to be present in entrepreneurial

exploitation. A significantly higher amount of individuals who are actively involved in early stage entrepreneurial activities personally know a person who started a business (59 percent as opposed to 33 percent for the general population). Both groups also differ in terms of education and employment status. Most individuals who pursue entrepreneurial activity have university background (80 percent) and were employed at the time of interview (80 percent). These findings suggest that human capital as well as social capital play role in entrepreneurial pursuits. However, other demographic variables did not seem to differ significantly between groups.

The findings are similar to those found in previous studies. For example, Caroll and Mosakowski (1987) found that prior entrepreneurial experience, measure of human capital, increases the probability of exploitation of entrepreneurial opportunities because learning reduces its cost. The impact of human capital was found also positively related to nascent entrepreneurship (Davidsson and Honig, 2003; and Reynolds et al., 2004). Social networks also seem to play a role on entrepreneurial exploitation (nascent entrepreneurship). Similar to other studies entrepreneurial friends and family (social capital) influence entrepreneurship. Social capital was a strong predictor for nascent entrepreneurs when compared with the control group drawn from the general population (Davidsson and Honig, 2003). Moreover, social capital was also positively associated to advancements through the start-up process. Although the reason for this relation is not part of the scope in this analysis, role models such as entrepreneurial friends may affect entrepreneurial intentions by affecting attitudes because of its subjective impact (Krueger, 1993; Scherer et al., 1989).

Table 28 - Exogenous Factors Total Early Stage Entrepreneurial Activity and General Population

Exogenous factors	Total Early Stage Entrepreneurial Activity	General Population	Total	F-Value	Sig.
Prior Exposure	11 percent n = 56	2 percent n = 1941	2 percent n= 1997	25.169	.000
Entrepreneurial Friends	59 percent n = 22	33 percent n = 1305	33 percent n= 1327	6.861	.009
Gender	67 percent n = 56	73 percent n = 1940	72 percent n= 1996	.593	.441
Employment Status	80 percent n = 56	46 percent n = 1935	47 percent n= 1991	25.376	.000
Age	37 years n = 56	41 years n = 1941	41 years n= 1997	2.287	.131
Education	80 percent n = 56	61 percent n = 1936	61 percent n= 1992	8.770	.003
Marital Status	59 percent n = 56	55 percent n = 1924	55 percent n= 1980	.341	.559

In this section insights into entrepreneurial activity and potential in Puerto Rico were provided, through the use of descriptive and inferential statistics. Although the analysis allowed examination of the underlying role of different variables between groups, it does not permits establishing conclusive relationships of the variables during the entrepreneurial process, mainly due to the nature of the variables employed (dichotomous). Also, although the sampling

selection procedure of the Global Entrepreneurship Monitor considers a random sample from the general population in order to assess entrepreneurial potential and activity in the region, the methodology does not require all individuals involved in entrepreneurial activity to answer the perceptual questions, which resulted in low response levels for questions concerning perceptions. This aspect was observed when comparing the individuals involved in early stage entrepreneurship and the general population. Finally, the analysis was based on individual perceptions. It is important to notice that perceptions may not be indicative of the reality in the region per se. In this sense we recognize that perceptual measures are somewhat subjective, which suggest the combination of these with other objective measures. However since individuals have limited rationality, perceptions may represent the best indicator of the reality itself.

5.2 Differences in Entrepreneurial Outcomes: Evidence from SBDCs in Puerto Rico

In this section we describe differences between entrepreneurial outcome groups. Groups were classified a priori base on their response to question B1 (Please indicate which of the following better describes the status of the start-up effort: started business, continue activities to start the business and discontinue activities to start the business). Analysis of variance (ANOVA) was used to explore the differences among groups. This technique examines the differences in the mean values of the dependent variable associated with the effect of the controlled independent variables, after taking into account the influence of the uncontrolled independent variables (Malhotra, 2002). Basically, it tests the means for two or more populations. Rejecting the null hypothesis will indicate that the means for the populations are

not equal. Differences in terms of attitudes, human capital, social capital, financial capital, environmental conditions, displacement events and other characteristics were assessed.

Data was collected through telephone surveys to SBDC's clients in Puerto Rico. Numerous calls were made to contact individuals with manifested entrepreneurial intentions. Refer to the Methodology Section for an in depth description on sample selection and data collection procedures. After 5 call backs to every potential participant we were able to obtain 106 valid surveys (106 clients). The results in this section provide the cues to understand the underlying characteristics of entrepreneurial outcomes (individuals who start-up, abandon or still working towards start-up).

Table 29 demonstrates the differences between the three entrepreneurial outcome groups and attitude variables. The results indicate significant differences among the groups ($p \leq .10$) for 5 attitude variables (PD1, PD4, PD5, PF4 and CM1). Variable PD1 examines how much individuals enjoy doing the activities to start the business. The results showed that individuals who are still working in starting the business enjoy the tasks more than the other two groups. This could be an indicator of why they continue conducting activities toward start-up and have not abandoned the start-up efforts. The same holds true for variable PD4 which asked respondents to indicate how satisfied they were conducting activities to start up the business. Question PD5 required respondents to indicate how desirable was for them to start the business. The results show that desirability to start was lower for people who abandoned the start-up effort than for the other groups. This could be an indicator of why they did not persisted in the startup effort. Moreover, people who abandon the start-up effort were not as secure of their capabilities

to start the business (PF5) and not as committed to start the business (Cm1) as the people who started the business and those who continue efforts to start the business.

Table 29 - ANOVA Attitudes on Entrepreneurial Outcomes - Behavior

Variable	Abandon start-up N = 19	Still working in start-up N = 49	Start-up N= 38	Total N= 106	F-value	Sig.
PD1	5.37	6.06	5.03	5.57	3.194	.045
PD2	4.37	4.47	4.71	4.54	.254	.776
PD3	6.26	6.49	6.58	6.48	.491	.613
PD4	5.37	6.10	5.18	5.64	3.193	.045
PD5	6.37	6.86	6.84	6.76	4.508	.013
PF1	3.95	3.55	3.49	3.60	.391	.677
PF2	5.68	5.80	6.16	5.91	1.244	.293
PF3	5.37	4.71	5.34	5.06	1.516	.224
PF4	5.37	5.61	5.63	5.58	.178	.837
PF5	6.21	6.57	6.76	6.58	3.435	.036
PF6	5.89	6.13	6.32	6.15	.750	.475
GA1	6.37	6.59	6.53	6.53	.411	.664
EF1	5.16	5.73	5.92	5.70	1.728	.183
PrS1	5.74	5.51	6.13	5.77	2.155	.121
Cm1	6.05	6.59	6.84	6.58	6.373	.002

Table 30 also demonstrates the differences between the three entrepreneurial outcome groups but for exogenous factors (human capital, social capital, financial capital, conditions and displacement events). The results indicate significant differences among the groups ($p \leq .10$) for 4 variables (I2, FC1, DE3 and DE6). Variable I2 examines whether tax policies facilitates or inhibits business start-ups. The results show that individuals who abandon the start-up efforts perceive taxes inhibits more than when compared with individuals who started or are still conducting activities to start the business.. Variable FC1 asked respondents to state the influence of personal savings on their entrepreneurial outcomes. The results suggest that personal savings is an important conditions for starting the business. Individuals who succeeded the business valued personal savings higher than individuals who are currently involved in conducting activities to start and those who abandon the start-up efforts. Two displacement events appear to differentiate the abandon, still working and start-up populations. Negative life events such as losing a family member (D3) seem to influence more the decision to start the business of people who started a business when compared with people who abandon. In terms of characteristic such as gender and age, we found no significant differences between the three groups. However, more women have been successful at starting the business. This analysis also shows that the environmental conditions classified as inhibitors in other sections of this study were in fact considered strong inhibitors by respondents. This is why we can observe low mean values for inhibitors (I1 to I4) when compared with facilitators (F1 to F8). Also, the literature of entrepreneurial environments suggest that favorable environments such as skilled workers, access to suppliers, entrepreneurial support institutions access to financial resources, entrepreneurial training programs, qualified consultants, access to clients, easy registration and licenses procedures, favorable tax policies and reduced regulations are conducing to

entrepreneurship. Overall the findings presented in Table 4.2b do not suggest significant differences between entrepreneurial outcome groups for these conditions. However, individuals who are still conducting activities to start the business appear to perceive the environment more favorable than the abandon and start-up group.

Table 30 - ANOVA Exogenous Factors on Entrepreneurial Outcomes - Behavior

Variable	Abandon start-up N = 19	Still working in start-up N = 49	Start-up N= 38	Total N= 106	F-value	Sig.
Environmental Conditions Variables: Facilitators (F) and Inhibitors (I)						
F1	5.84	5.90	5.82	5.86	.026	.975
F2	5.32	5.71	5.97	5.74	.806	.450
F3	4.58	4.80	4.71	4.73	.060	.942
F4	4.68	3.65	4.65	4.19	1.887	.157
F5	4.95	4.69	4.13	4.53	1.088	.341
F6	5.42	5.96	5.47	5.69	1.121	.330
F7	5.17	5.67	5.61	5.56	.452	.638
F8	6.00	6.40	6.47	6.35	.932	.398
I1	2.11	3.31	3.03	2.99	2.045	.135
I2	2.00	3.21	3.05	2.94	2.481	.089
I3	2.06	2.83	2.58	2.61	.965	.385
I4	2.47	3.24	3.74	3.28	2.282	.107

Table 30 - ANOVA Exogenous Factors on Entrepreneurial Outcomes - Behavior

Variable	Abandon start-up N = 19	Still working in start-up N = 49	Start-up N= 38	Total N= 106	F-value	Sig.
Social Capital Variables (SC)						
SC1	4.79	4.84	4.95	4.87	.029	.972
SC2	3.00	3.00	2.82	2.93	.062	.940
SC3	4.42	4.06	3.89	4.07	.222	.801
SC4	4.84	4.88	4.63	4.78	.094	.910
SC5	4.00	4.69	3.97	4.31	1.018	.365
SC6	3.37	3.63	3.26	3.45	.274	.761
SC7	3.32	3.76	3.61	3.62	.185	.831
SC8	2.79	2.47	3.08	2.74	.623	.538
SC9	3.06	3.29	3.61	3.36	.314	.731
Human Capital Variables (HC)						
HCi1	5.21	5.02	5.34	5.17	.193	.825
HCi2	5.26	4.76	4.42	4.73	.678	.510
HCi3	3.84	3.59	3.03	3.44	.818	.444
HCe1	2.53	3.00	3.11	2.95	.352	.704
HCsme1	4.74	4.56	3.95	4.38	.805	.450
HCm1	5.53	5.10	5.05	5.16	.318	.729
HCedu1	4.84	4.92	4.58	4.78	.220	.803
HCi4	5.21	5.16	5.61	5.33	.436	.648

Table 30 - ANOVA Exogenous Factors on Entrepreneurial Outcomes - Behavior

Variable	Abandon start-up N = 19	Still working in start-up N = 49	Start-up N= 38	Total N= 106	F-value	Sig.
HCe2	3.95	3.65	3.74	3.74	.096	.908
HCsme2	4.05	4.59	4.92	4.61	.821	.443
HCm2	4.74	4.88	5.47	5.07	1.117	.331
HCedu2	4.16	5.22	4.68	4.84	1.851	.162
Financial Capital Variables (FC)						
FC1	4.21	4.57	5.66	4.90	2.839	.063
FC2	2.68	2.27	2.87	2.56	.669	.514
FC3	1.63	1.73	1.79	1.74	.050	.951
FC4	4.16	4.29	4.05	4.18	.077	.926
FC5	3.89	3.96	4.21	4.04	.125	.882
FC6	2.79	3.10	3.32	3.12	.268	.765
FC7	5.17	4.98	5.11	5.06	.057	.945
FC8	5.00	5.45	5.68	5.45	.618	.541
FC9	4.47	4.61	3.62	4.22	2.071	.132
Displacement Events Variables (DE)						
DE1	5.32	4.10	4.87	4.59	1.778	.174
DE2	4.05	3.88	4.21	4.03	.145	.866
DE3	1.16	1.18	1.87	1.42	2.975	.055
DE4	1.56	2.00	2.42	2.08	.958	.387
DE5	1.05	1.22	1.79	1.40	2.283	.107

Table 30 - ANOVA Exogenous Factors on Entrepreneurial Outcomes - Behavior

Variable	Abandon start-up N = 19	Still working in start-up N = 49	Start-up N= 38	Total N= 106	F-value	Sig.
DE6	1.95	1.22	2.08	1.66	2.785	.066
DE7	3.84	3.06	3.79	3.46	.948	.391
Other variables: Age (A1) & Gender (S1)						
A1	3.47	3.51	3.19	3.39	1.373	.258
S1	.63	.6327	.4474	.5660	1.705	.187

The results in this section allowed us to create a profile for three entrepreneurial outcome populations. These populations consisted of 19 individuals who discontinued the start-up efforts, 49 who continue conducting activities to start-up and 38 individuals who succeeding in starting the business. Differences in terms of attitudes, human capital, social capital, financial capital, environmental conditions, displacement events and other characteristics were assessed. The results in this section demonstrated that individuals who are still working in starting the business enjoy the tasks, and are more satisfied with the process than the other two groups. Also, individuals who are still conducting activities but have not yet abandoned or started the venture seem to evaluate the environment more favorable than their counterparts. This could be an indicator of why they continue conducting activities toward start-up and have not abandoned the start-up efforts. People who abandoned the start-up efforts considered starting a business less desirable, they were less secure of their capabilities, less committed to start the business when compared with the other two groups. These findings could be indicative of why they did not persist in the start-up effort. The results also suggest that personal savings is an important

condition for starting the business. Individuals who succeeded at starting the business valued personal savings higher than individuals who are currently involved in conducting activities to start and those who abandon the start-up efforts. Negative life events such as losing a family member (D3) seem to influence more the decision to start the business of people who started a business when compared to people who abandon. In terms of other characteristic more women have been successful at starting the business (although this finding was not significant). Finally, low mean values for inhibitor variables suggest that taxes, regulations, governmental institutions and registration procedures inhibit the entrepreneurial processes. This finding was consistent with the literature on entrepreneurship.

5.3 The Role of Exogenous Factors on Entrepreneurial Attitudes and Behavior: Evidence from SBDCs in Puerto Rico

In this section we describe the role of exogenous factors, both personal (inherent to the entrepreneur) and situational (derived from the environment) on entrepreneurial attitudes and behavior. Specifically, we put to the test the hypotheses of study (H_1 to H_{12}). First, we analyze the relationship between personal factors, specifically human capital, social capital and financial capital, on entrepreneurial attitudes and behavior (H_1 to H_6). The effects of personal factors on attitudes towards entrepreneurship and behavior are hypothesized as follows: (1) human capital is positively associated to attitudes towards venture creation; (2) the effect of human capital will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort; (3) individual social capital is positively associated to attitudes towards venture creation; (4) the effect of social capital will be higher for individuals who succeed in venture

creation than for those who abandon the start-up effort; (5) individual financial capital is positively associated to attitudes towards venture creation; and (6) the effect of financial capital will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort.

Also we analyzed the effect of environmental factors on attitudes towards entrepreneurship and behavior. Environmental factors are classified as facilitating conditions, inhibiting conditions and displacement events (H_7 to H_{12}). The effects of environmental factors on attitudes towards entrepreneurship and behavior are hypothesized as follows: (1) the environment (situation), as indicated by facilitating conditions positively influences attitudes towards venture creation; (2).the effect of the environment (situation), as indicated by facilitating conditions will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort; (3) the environment (situation), as indicated by inhibiting conditions is negatively associated to attitudes towards venture creation; (4) the effect of the environment (situation), as indicated by inhibiting conditions will be lower for individuals who succeed in venture creation than for those who abandon the start-up effort; (5) displacement events influence attitudes towards entrepreneurship; and (6) displacement events influence entrepreneurial behavior.

Data was collected through telephone surveys to SBDC clients in Puerto Rico. Numerous calls were made to contact individuals with manifested entrepreneurial intentions. Refer to the Methodology Section for an in depth description on sample selection and data collection procedures. After 5 call backs to every potential participant we were able to obtain

106 valid surveys (106 clients). We analyze the effect of exogenous factors on attitude and behavior using multiple regression technique. This technique is useful when analyzing the relationship between a single dependent variable and several independent, also called predictor variables (Hair, et al. 2008). Each independent variable is weighted by the regression analysis procedure to ensure maximal prediction fro the set of independent variables. The weights denote the relative contribution of the independent variables to the overall prediction. The results from multiple regression analysis are presented in this section. It is important to clarify that in this section we employ scores and score averages for inclusion in the regression models. These scores take into consideration the importance of each factor analyzed as perceived by the respondents. Basically, the survey included questions that asked respondents to rank the importance of each factor on the status of their entrepreneurial endeavor. By doing this we were able to take into consideration the importance of each factor, since these are not equally important in all situations. Two dependent variables are analyzed in the study: attitudes and behaviors. The attitude variable (ATT_score_avg) was constructed using the scores for desirability perceptions, feasibility perceptions and general attitude towards entrepreneurship questions. The dependent variable in the models, behavioral score (BEHAVE_score) was constructed based on respondents answers to questions that asked them about having a business with own identity and resources, good faith effort made in starting the business and a perceptual question concerning the outcome of the business in question, where respondents were asked to indicate which of the three categories (startup, still working or abandon) better described the status of the start-up effort. The variable list in the Appendix section (3) describes the components of these scores.

Table 31 shows the results of the relationship between human capital and attitude. Hypothesis 1 suggests that human capital is positively associated to attitudes towards entrepreneurship. The score average for human capital variables, which is composite of variables for industry, managerial and entrepreneurial experience, in addition to entrepreneurial education was regressed with the attitude score average, which combines feasibility and desirability perception scores. The results suggest that human capital has a significant positive correlation (R=.210) with attitude towards entrepreneurship. The variation of attitudes towards entrepreneurship as explained by human capital alone is 4 percent (R^2=.044).

Table 31

Regression of Human Capital (HC_score_avg) on Attitude (ATT_score_avg)

Multiple R= .210	R^2= .044	Adj. R^2= .035	F= 4.819	Significance= .030
Human Capital (HC_score_avg)		Beta= .210	t= 2.95	Sig. = .030

Table 32 also shows the results of the relationship between human capital and attitude. However, in this analysis we employed the scores for 4 types of human capital, as distinguished by the literature: industry experience, management experience, entrepreneurial experience and entrepreneurial education. Human capital scores were regressed with the attitude towards entrepreneurship score using the enter method. The results indicate that human capital has a significant (p= .038) and positive relationship (R= .308). The proportion of variation on attitude towards entrepreneurship as explained by all human capital scores is 9.5 percent (R^2=.095). When taking into account the number of independent variables and the sample size the variation on attitude towards entrepreneurship is 5.9 percent (Adj. R^2= .059). Comparison of the beta

coefficients (β) and the partial *t* values demonstrate that Management Experience (HCm_score) has the higher predictive power of all the variables in the model (β= .312; p=.009).

Table 32

Regression of Human Capital (HCi_score, HCe_score, HCm_score, HCedu_score) on Attitude (ATT_score_avg)

Multiple R= .308	R^2= .095	Adj. R^2= .059	F= 2.648	Significance= .038
Human Capital		Beta=	t=	Sig. =
Industry Experience (HCi_score)		.032	.299	.765
Entrepreneurial Experience (HCe_score)		.038	.361	.719
Management Experience (HCm_score)		.312	2.654	.009
Entrepreneurial Education (HCedu_score)		.152	1.485	.141

Table 33 shows the results of the relationship between human capital and behavior. Hypothesis 2 suggests that human capital is positively associated to entrepreneurial behavior. More specifically, the effect of human capital will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort. The score average for human capital variables, composite of variables for industry, managerial and entrepreneurial experience, in addition to entrepreneurial education was regressed with the overall behavior score, which combines scores for entrepreneurial outcomes (abandon, working and start up). The results suggest that human capital is positively correlated (R=.081), although not significant (p= .408) with entrepreneurial behavior. The variation of entrepreneurial behavior as explained by human

capital is 4 percent (R^2=.007). The overall results suggest that there is a weak positive relationship between human capital and entrepreneurial behavior.

Table 33

Regression of Human Capital (HC_score_avg) on Behavior (BEHAVE_score)

Multiple R= .081	R^2= .007	Adj. R^2= .-003	F= .691	Significance= .408
Human Capital (HC_score_avg)		Beta= .081	t= .831	Sig. = .408

Table 34 also demonstrates the relationship between human capital and entrepreneurial behavior. Similar to previous analyses we distinguish types of human capital, industry experience, management experience, entrepreneurial experience and entrepreneurial education. Human capital scores were regressed with the overall behavior score using the enter method. The results indicate that human capital has a positive relationship (R= .177) with entrepreneurial behavior, although not significant (p= .520). The proportion of variation on entrepreneurial behavior as explained by all human capital scores is 3.1 percent (R^2=.031). Comparison of the beta coefficients (β) and the partial *t* values demonstrate that Industry Experience (HCi_score) has the higher predictive power of all the variables in the model (β= .134) although the relation is not significant (p=.225). Also, results suggest that there is not a strong positive relationship for Entrepreneurial Education (β= -.072, p=.498) and entrepreneurial behavior. Overall, the results indicate that human capital, expressed as industry experience, entrepreneurial experience; managerial experience and entrepreneurial education do not strongly predict entrepreneurial behavior.

Table 34

Regression of Human Capital (HCi_score, HCe_score, HCm_score, HCedu_score) on Behavior (BEHAVE_score)

Multiple R= .177	R^2= .031	Adj. R^2= -.007	F= .813	Significance= .520
Human Capital		Beta=	t=	Sig. =
Industry Experience (HCi_score)		.134	1.220	.225
Entrepreneurial Experience (HCe_score)		.040	.369	.713
Management Experience (HCm_score)		.084	.690	.492
Entrepreneurial Education (HCedu_score)		-.072	-.679	.498

Table 35 shows the results of the relationship between social capital and attitude. Hypothesis 3 suggests that social capital is positively associated to attitudes towards entrepreneurship. The score average for social capital variables considers social capital variables included in the literature (i.e. entrepreneurial family & friends, support institutions, entrepreneurial networks, among others) and the importance of these, as perceived by entrepreneurs, on the status of the venture creation process. Social capital was regressed with the attitude score average, which combines feasibility and desirability perception scores. The results suggest that social capital has a significant positive correlation (R=.278; p= .004) with attitude towards entrepreneurship. The variation of attitudes towards entrepreneurship as explained by social capital is 7.7 percent (R^2=.077).

Table 35

Regression of Social Capital (SC_score_avg) on Attitude (ATT_score_avg)

Multiple R= .278	R^2= .077	Adj. R^2= .068	F= 8.717	Significance= .004
Social Capital (SC_score_avg)		Beta= .278	t= 2.952	Sig. = .004

Table 36 also demonstrates the relationship between social capital and entrepreneurial behavior. Similar to previous analyses we distinguish types of social capital, entrepreneurial parents, family & friends, support institutions, entrepreneurial networks, financial institutions and entrepreneurial team. Social capital scores were regressed with the attitude scores using the enter method. The results indicate that social capital has a significant positive relationship (R= .395, p=.032) with attitudes towards entrepreneurship. The proportion of variation on attitude towards entrepreneurship as explained by all social capital scores is 15.6 percent (R^2=.156). When taking into account the number of independent variables and the sample size the variation on attitude towards entrepreneurship is 8.6 percent (Adj. R^2= .086). Comparison of the beta coefficients (β) and the partial *t* values demonstrate that Management Experience (HCm_score) has the higher predictive power of all the variables in the model (β= .312; p=.009) .Comparison of the beta coefficients (β) and the partial *t* values demonstrate that Entrepreneurial Parents (SC2_score) and entrepreneurial friends (SC4_score) have the highest predictive power of all the variables in the model (β= .282, p= .011) and (β= .178, p= .097), respectively. Also, results suggest that there is not a strong positive relationship for support institutions and financial institutions on attitudes towards entrepreneurship as shown by their negative betas (β= -.019) and (β= -.091) respectively, and significance levels (p >.10). . Overall, the results indicate that social capital variables can help explain attitudes towards entrepreneurship.

Table 36

Regression of Social Capital (SC1_score to SC9) on Attitude (ATT_score_avg)

Multiple R= .395	R^2= .156	Adj. R^2= .086	F= 2.219	Significance= .032
Social Capital		Beta=	t=	Sig. =
SC1_score (significant other)		.093	.943	.348
SC2_score (entrepreneurial parents)		.282	2.605	.011
SC3_score (entrepreneurial family)		.082	.697	.487
SC4_score (entrepreneurial friends)		.178	1.674	.097
SC5_score (support institution)		-.019	-.164	.870
SC6_score (entrepreneurial network)		.191	1.644	.103
SC7_score (financial institution)		-.091	-.923	.358
SC9_score (entrepreneurial team)		.037	.367	.714

Table 37 shows the results of the relationship between social capital and behavior. Hypothesis 4 suggests that social capital is positively associated to entrepreneurial behavior. More specifically, the effect of social capital will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort. The score average for social capital variables was regressed with the overall behavior score. The results suggest that social capital is positively correlated (R=.053), although not significant (p= .592) with entrepreneurial behavior. The variation of entrepreneurial behavior as explained by social capital is 3 percent (R^2=.003). The overall results suggest that social capital does not significantly contribute to entrepreneurial behavior.

Table 37

Regression of Social Capital (SC_score_avg) on Behavior (BEHAVE_score)

Multiple R= .053	R^2= .003	Adj. R^2= .-007	F= .289	Significance= .592
Social Capital (SC_score_avg)		Beta= .053	t= .537	Sig. = .592

Table 38 also demonstrates the relationship between social capital and entrepreneurial behavior. We consider different social capital variables, which include entrepreneurial parents, family & friends, support institutions, entrepreneurial networks, financial institutions and entrepreneurial team. Social capital scores were regressed with the overall behavior score using the enter method. The results indicate that social capital has a positive relationship (R= .255) with entrepreneurial behavior, although not significant (p= .574). The proportion of variation on entrepreneurial behavior as explained by social capital scores is 6.5 percent (R^2=.065). Comparison of the beta coefficients (β) and the partial *t* values demonstrate that Entrepreneurial Parents (SC2_score) has the higher predictive power of all the variables in the model (β= .184) although the relation is not significant (p=.110). Also, results suggest that there is not a strong positive relationship for entrepreneurial family (β= -.074, p=.551) and support institutions (β= -.112, p=.358). Overall, the results indicate that social capital variables do not strongly predict entrepreneurial behavior.

Table 38

Regression of Social Capital (SC1_score to SC9) on Behavior (BEHAVE_score)

Multiple R= .255	R^2= .065	Adj. R^2= -.013	F= .835	Significance= .574
Social Capital		Beta=	t=	Sig. =
SC1_score (significant other)		.106	1.021	.310
SC2_score (entrepreneurial parents)		.184	1.615	.110
SC3_score (entrepreneurial family)		-.074	-.598	.551
SC4_score (entrepreneurial friends)		.016	.148	.883
SC5_score (support institution)		-.112	-.923	.358
SC6_score (entrepreneurial network)		.025	.206	.838
SC7_score (financial institution)		.055	.525	.601
SC9_score (entrepreneurial team)		.143	1.351	.180

Table 39 shows the results of the relationship between financial capital and attitude. Hypothesis 5 suggests that the individual's financial capital is positively associated to attitudes towards entrepreneurship. The score average for financial capital considers variables such as personal savings, family money, friend's money, bank credits, personal credit cards and supplier credits and the importance of these, as perceived by entrepreneurs, on the status of the venture creation process. Financial capital was regressed with the attitude score average, which combines feasibility and desirability perceptions. The results suggest that financial capital has a negative correlation (β = -.115) with attitude towards entrepreneurship. Nonetheless, this relationship is not significant (p= .242). In this sense, we can argue that financial capital does not contribute significantly to attitudes towards entrepreneurship.

Table 39

Regression of Financial Capital (FC_score_avg) on Attitude (ATT_score_avg)

Multiple R= .115	R^2= .013	Adj. R^2= .004	F= 1.385	Significance= .242
Financial Capital (FC_score_avg)		Beta= -.115	t= -1.177	Sig. = .242

Table 40 also demonstrates the relationship between financial capital and entrepreneurial attitudes towards entrepreneurship. Financial capital scores considered variables related to available sources of money to finance the start-up. These were regressed with the attitude score using the enter method. The null hypothesis for the overall regression model cannot be rejected (p= .242). Comparison of the beta coefficients (β) and the partial *t* values demonstrate that bank credits (SC2_score) has a negative relationship with attitudes towards entrepreneurship (β= -.238, p = .036). The other variables in the model do not significantly contribute to attitudes towards entrepreneurship as seen by their significance levels (p > .10).

Table 40

Regression of Financial Capital (FC1_score to FC6_score) on Attitude (ATT_score_avg)

Multiple R= .301	R^2= .090	Adj. R^2= .035	F= 1.624	Significance= .149
Financial Capital		Beta=	t=	Sig. =
FC1_score (savings)		.051	.484	.629
FC2_score (family money)		-.037	-.348	.728
FC3_score (friends money)		.070	.707	.481
FC4_score (bank credits)		-.238	-2.122	.036
FC5_score (personal credit cards)		-.105	-.993	.323
FC6_score (credit from clients & suppliers)		.054	.528	.599

Table 41 shows the results of the relationship between financial capital and behavior. Hypothesis 6 suggests that financial capital is positively associated to entrepreneurial behavior. More specifically, the effect of financial capital will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort. The score average for financial capital variables was regressed with the overall behavior score. The results suggest that financial capital is significantly and positive related (R=.169, p= .082) to entrepreneurial behavior. The variation of entrepreneurial behavior as explained by financial capital is 3 percent (R^2=.029). The overall results suggest that financial capital does contributes, although not strongly, to entrepreneurial behavior.

Table 41

Regression of Financial Capital (FC_score_avg) on Behavior (BEHAVE_score)

Multiple R= .169	R^2= .029	Adj. R^2= .019	F= 3.075	Significance= .082
Financial Capital (FC_score_avg)		Beta= .169	t= 1.754	Sig. = .082

Table 42 also demonstrates the relationship between financial capital and entrepreneurial behavior. Financial capital scores were regressed with the overall behavior score using the enter method. The results for the overall regression equation suggest that financial capital has a positive relationship (R= .284) with entrepreneurial behavior, although not significant (p= .209). Examination of the beta coefficients (β) and the partial *t* values demonstrate that savings (FC1_score) has the higher predictive power of all the variables in the model (β= .184, p=.082). The other variables introduced in the regression equation do not seem to contribute (p > .10). Overall, the results suggest that financial capital variables do not strongly predict entrepreneurial behavior.

Table 42

Regression of Financial Capital (FC1_score to FC6_score) on Behavior (BEHAVE_score)

Multiple R= .284	R^2= .081	Adj. R^2= .025	F= 1.435	Significance= .209
Financial Capital		Beta=	t=	Sig. =
FC1_score (savings)		.184	1.757	.082
FC2_score (family money)		.046	.438	.662
FC3_score (friends money)		-.005	-.054	.957
FC4_score (bank credits)		-.109	-.970	.335
FC5_score (personal credit cards)		.104	.983	.328
FC6_score (credit from clients & suppliers)		.166	1.622	.108

Table 43 shows the results of the relationship between facilitators and attitude. Hypothesis 7 suggests that the environment (situation), as indicated by facilitating conditions positively influences attitudes towards entrepreneurship. The score average for facilitating conditions, which is composite of variables listed in the literature including availability of workers, customers, suppliers, support institutions, financial resources, among others were regressed with the attitude score average. The results suggest that facilitating conditions does not significantly contribute to attitudes towards entrepreneurship (R=.018, p= .854). Moreover, examination of the beta coefficient suggests a negative relationship (-.018)

Table 43

Regression of Facilitators (F_score_avg) on Attitude (ATT_score_avg)

Multiple R= .018	R^2= .00	Adj. R^2= -.009	F= .034	Significance= .854
F_score_avg		Beta= -.018	t= -.184	Sig. = .854

Table 44 also shows the results of the relationship between facilitating conditions and attitude. However, in this analysis we employed the scores for individual facilitators identified in the literature of entrepreneurial environments. Facilitating conditions scores were regressed with the attitude towards entrepreneurship score using the enter method. The scores also consider the importance attached by entrepreneurs to these conditions. The results indicate that facilitating conditions has a significant (p= .026) and positive relationship (R= .407). The proportion of variation on attitude towards entrepreneurship as explained by facilitating condition scores is 17 percent (R^2=.166). When taking into account the number of independent variables and the sample size the variation on attitude towards entrepreneurship is 9 percent (Adj. R^2= .094). Comparison of the beta coefficients (β) and the partial *t* values demonstrate that availability of workers (F1_score) has the higher predictive power of all the variables in the model (β= .201; p=.046). The other variables in the equation do not seem to contribute to attitudes towards entrepreneurship. Overall, the results suggest that facilitators contribute positively to attitudes towards entrepreneurship.

Table 44

Regression of Facilitators (F1_score to F8_score) on Attitude (ATT_score_avg)

Multiple R= .407	R^2= .166	Adj. R^2= .094	F= 2.312	Significance= .026
Facilitators		Beta=	t=	Sig. =
Workers (F1_score)		.201	2.019	.046
Suppliers(F2_score)		-.017	-.159	.874
Support Institutions (F3_score)		.015	.133	.894
Financial Resources (F4_score)		-.149	-1.460	.148
Entrepreneurial Networks (F5_score)		.094	.904	.368
Entrepreneurial Training (F6_score)		-.075	-.692	.490
Consultants (F7_score)		-.144	-1.396	.166
Clients (F8_score)		-.191	-1.642	.104

Table 45 shows the results of the relationship between facilitating conditions and behavior. Hypothesis 8 suggests that facilitating conditions are positively related to entrepreneurial behavior. More specifically, the effect of the environment, as indicated by facilitating conditions will be higher for individuals who succeed in venture creation. The score average for facilitating conditions was regressed with the overall behavior score, which combines scores for entrepreneurial outcomes (abandon, working and start up). The results suggest that facilitating conditions is positively correlated (R=.131), although not significant (p= .180) with entrepreneurial behavior. The variation of entrepreneurial behavior as explained by facilitators is 1.7 percent (R^2=.017). The overall results suggest that the facilitator score does not contribute at predicting entrepreneurial behavior.

Table 45

Regression of Facilitators (F_score_avg) on Behavior (BEHAVE_score)

Multiple R= .131	R^2= .017	Adj. R^2= .008	F= 1.825	Significance= .180
Facilitators (F_score_avg)		Beta= .131	t= 1.351	Sig. = .180

Table 46 also demonstrates the relationship between facilitators and entrepreneurial behavior. Facilitating condition scores were regressed with the overall behavior score using the enter method. The results indicate that facilitators is strongly and significantly related to entrepreneurial behavior (R= .480, p= .001). The proportion of variation on entrepreneurial behavior as explained by all facilitator scores is 23 percent (R^2=.231). When adjusted for the number of introduced variables to the equation the strength of the association is 16 percent (Adj.R^2= .164). Comparison of the beta coefficients (β) and the partial *t* values show that Availability of workers has the higher predictive power when compared to other variables (β = .236, p= .016). Also, availability of suppliers and financial resources show significant positive relations (β = .181, p= .076) and (β = .165, p= .095) respectively. Entrepreneurial networks and support institutions show negative correlations (β =-.201, p= .047) and (β = -.180, p= .095) respectively. The findings may suggest that conditions related to the actual operations of the business (workers, suppliers and financial resources) influence positively entrepreneurial behavior (start-up).

Table 46

Regression of Facilitators (F1_score to F8_score) on Behavior (BEHAVE_score)

Multiple R= .480	R^2= .231	Adj. R^2= .164	F= 3.485	Significance= .001
Facilitators		Beta=	t=	Sig. =
Workers (F1_score)		.236	2.458	.016
Suppliers (F2_score)		.181	1.791	.076
Support Institutions (F3_score)		-.180	-1.688	.095
Financial Resources (F4_score)		.165	1.687	.095
Entrepreneurial Networks (F5_score)		-.201	-2.013	.047
Entrepreneurial Training (F6_score)		.003	.033	.973
Consultants (F7_score)		-.015	-.150	.881
Clients (F8_score)		-.019	-.173	.863

Hypothesis 9 states that the environment (situation), as indicated by inhibiting conditions is negatively associated to attitudes towards venture creation. Table 47 shows the results of the relationship between inhibiting conditions and attitude. Inhibiting conditions score was regressed with the attitude towards entrepreneurship score using the enter method. The results indicate that inhibiting conditions has a significant (p= .040) and positive relationship (R= .201). The proportion of variation on attitude towards entrepreneurship as explained by inhibiting conditions is 4 percent (R^2=.040). The results are consistent with what was expected. The reason for this interpretation is that when respondents were asked to rate conditions, facilitating and inhibitors, we used a 7 point semantic differential scale where 7 indicates that the condition facilitates and 1 indicates that the condition inhibits. The regression results will suggest a

positive relation which means that as inhibitors approximate to 7 (increase) attitude scores will increase. In other words, as inhibitors approximate 7 in the scale the condition facilitates as perceived by respondents. In this sense the results of the regression are consistent with what was expected.

Table 47

Regression of Inhibitors (I_score_avg) on Attitude (ATT_score_avg)

Multiple R= .201	R^2= .040	Adj. R^2= .031	F= 4.338	Significance= .040
Inhibitors (I_score_avg)		Beta= .201	t= 2.083	Sig. = .040

Table 48 also shows the results of the relationship between inhibitors and attitude. However, in this analysis we employed the scores for individual inhibitors identified in the literature of entrepreneurial environments. These inhibitors include taxes, licenses and registration processes, rules and norms that govern the business activity, and governmental institutions. Inhibiting conditions scores were regressed with the attitude towards entrepreneurship score using the enter method. The scores also consider the importance attached by entrepreneurs to these conditions. The results indicate that inhibiting conditions has a significant (p= .008) and positive relationship (R= .361). The proportion of variation on attitude towards entrepreneurship as explained by inhibiting condition scores is 13 percent (R^2=.131). When taking into account the number of independent variables and the sample size the variation on attitude towards entrepreneurship is 10 percent (Adj. R^2= .095). Comparison of the beta coefficients (β) and the partial *t* values demonstrate that governmental institutions (I4_score) has the highest predictive power of all the variables in the model (β= .416; p=.000). The other variables in the equation do not seem to contribute to attitudes towards entrepreneurship.

Licenses and registration processes and rules and norms were negative related but not significantly. Such as in the previous analysis interpreting these results are consistent with what was expected. As explained in the previous analysis, the reason for this interpretation is that when respondents were asked to rate conditions, facilitating and inhibitors, we used a 7 point semantic differential scale where 7 indicates that the condition facilitates and 1 indicates that the condition inhibits. The regression results will suggest a positive relation which means that as inhibitors approximate to 7 (increase) attitude scores will increase. In other words, as inhibitors approximate 7 in the scale the condition facilitates as perceived by respondents.

Table 48

Regression of Inhibitors (I1_score to I4_score) on Attitude (ATT_score_avg)

Multiple R= .361	R^2= .131	Adj. R^2= .095	F= 3.679	Significance= .008
Inhibitors		Beta=	t=	Sig. =
I1_score (taxes)		.046	.449	.654
I2_score (licenses and registration)		-.098	-.950	.344
I3_score (rules and norms)		-.104	-.901	.370
I4_score (governmental institutions)		.416	3.621	.000

Table 49 shows the results of the relationship between inhibiting conditions and behavior. Hypothesis 10 suggests that inhibiting conditions are negatively related to entrepreneurial behavior. More specifically, the effect of the environment, as indicated by inhibiting conditions will be lower for individuals who succeed in venture creation. The score average for inhibitors was regressed with the overall behavior score, which combines scores for entrepreneurial

outcomes (abandon, working and start up). The overall results suggest that the inhibitor score does not contribute at predicting entrepreneurial behavior (p= .389).

Table 49

Regression of Inhibitors (I_score_avg) on Behavior (BEHAVE_score)

Multiple R= .085	R^2= .007	Adj. R^2= .-002	F= .749	Significance= .389
Inhibitors (I_score_avg)		Beta= .085	t= .865	Sig. = .389

Table 50 also demonstrates the relationship between inhibitors and entrepreneurial behavior. Inhibiting condition scores were regressed with the overall behavior score using the enter method. The results for the overall regression equation suggest that inhibiting conditions do not strongly predict entrepreneurial behavior (p= .853). The null hypothesis that $R^2 = 0$ cannot be rejected.

Table 50

Regression of Inhibitors (I1_score to I4_score) on Behavior (BEHAVE_score)

Multiple R= .116	R^2= .014	Adj. R^2= -.027	F= .336	Significance= .853
Inhibitors		Beta=	t=	Sig. =
I1_score (taxes)		.049	.451	.653
I2_score (licenses and registration)		.105	.958	.340
I3_score (rules and norms)		-.041	-.336	.737
I4_score (governmental institutions)		-.014	-.112	.911

Table 51 demonstrates the relationship between displacement events and attitudes towards entrepreneurship. Hypothesis 11 suggests that displacement events influence attitudes

towards entrepreneurship. Using the enter method, displacement event score was regressed with the attitude towards entrepreneurship score. The results for the overall regression equation suggest that displacement events do not strongly predict entrepreneurial behavior (p= .875). The null hypothesis that $R^2 = 0$ cannot be rejected. In this sense, we cannot state that displacement events influence attitudes towards entrepreneurship.

Table 51

Regression of Displacement Events (DE_score_avg) on Attitude (ATT_score_avg)

Multiple R= .016	R^2= .000	Adj. R^2= -.010	F= .025	Significance= .875
Displacement Events (DE_score_avg)		Beta= .016	t= .158	Sig. = .875

Table 52 also shows the results of the relationship between displacement events and attitudes towards entrepreneurship. In this case we different displacement events related to employment status and personal events, as suggested by the literature, were regressed with attitudes towards entrepreneurship. The overall results suggest that displacement scores do not contribute at predicting entrepreneurial behavior (p=.726). However, examination of the beta values suggest that loss of a family member is the most predicting variable influences (β = .228, p= .048) and is positively associated to attitudes towards entrepreneurship.

Table 52

Regression of Displacement Events (DE1_score to DE7_score) on Attitude (ATT_score_avg)

Multiple R= .211	R^2= .045	Adj. R^2= -.026	F= .635	Significance= .726
Displacement Events		Beta=	t=	Sig. =
Job Frustration (DE1_score)		-.037	-.344	.732
Loss of Employment (DE2_score)		.058	.527	.600
Loss of Family Member (DE3_score)		.228	1.999	.048
Birth of Child (DE4_score)		-.086	-.798	.427
Divorce (DE5_score)		-.089	-.808	.421
Marriage (DE6_score)		.041	.376	.708
Graduation (DE7_score)		-.007	-.066	.948

Table 53 demonstrates the relationship between displacement events and entrepreneurial behavior. Hypothesis 12 suggests that displacement events influence entrepreneurial behavior. The displacement event score was regressed with the overall behavior score using the enter method. The results for the overall regression equation suggest that displacement events do not strongly predict entrepreneurial behavior (p= .375). The null hypothesis that $R^2 = 0$ cannot be rejected.

Table 53

Regression of Displacement Event (DE_score_avg) on Behavior (BEHAVE_score)

Multiple R= .088	R^2= .008	Adj. R^2= -.002	F= .795	Significance= .375
Displacement Event (DE_score_avg)		Beta= .088	t= .891	Sig. = .375

Table 54 also shows the results of the relationship between displacement events and behavior. The scores for all inhibitors independently were regressed with the overall behavior score, which combines scores for entrepreneurial outcomes (abandon, working and start up). The overall results suggest that the displacement event scores do not contribute at predicting entrepreneurial behavior (p = .696)

Table 54

Regression of Displacement Event (DE1_score to DE7_score) on Behavior (BEHAVE_score)

Multiple R= .217	R^2= .047	Adj. R^2= -.023	F= .671	Significance= .696
Displacement Events		Beta=	t=	Sig. =
Job Frustration (DE1_score)		.001	.008	.994
Loss of Employment (DE2_score)		.055	.501	.618
Loss of Family Member (DE3_score)		.102	.895	.373
Birth of Child (DE4_score)		-.107	-.987	.326
Divorce (DE5_score)		.145	1.313	.192
Marriage (DE6_score)		.120	1.095	.276
Graduation (DE7_score)		.018	.173	.863

Overall the results in this section provide insights into the exogenous factors that influence attitudes towards entrepreneurship and entrepreneurial behavior. Exogenous factors include personal factors and environmental factors. We analyzed the relationship between personal factors, specifically human capital, social capital and financial capital, on entrepreneurial attitudes and behavior (H_1 to H_6). The effects of personal factors on attitudes towards entrepreneurship and behavior were hypothesized as follows: (1) human capital is positively associated to attitudes towards venture creation; (2) the effect of human capital will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort; (3) individual social capital is positively associated to attitudes towards venture creation; (4) the effect of social capital will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort; (5) individual financial capital is positively associated to attitudes towards venture creation; and (6) the effect of financial capital will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort.

The results suggest that human capital is positively related to attitudes towards entrepreneurship. The average scores combining all measures of human capital explained positively the variance on attitudes (Krueger, Reilly and Carsrud, 2000; Krueger, 1993). The results provide support for Hypothesis 1 that indicates human capital is positively associated to attitudes towards entrepreneurship. According to Ajzen (1991) and Shapero (1982) human capital, expressed both as tacit or explicit knowledge influence attitudes (social norms, perceive behavioral control and attractiveness of entrepreneurial career). Human capital assists in the accumulation of explicit knowledge that provides skills to the entrepreneur (Davidsson and Honig, 2003). In this sense, the findings suggest that human capital measures may in fact

influence attitudes because it makes individuals perceive the task at hand easier and therefore more desirable, which in turns produces positive attitudes towards entrepreneurship. From the different categories of human capital (i.e. industry experience, entrepreneurial experience, management experience and entrepreneurial education), we found that management experience influences entrepreneurial attitudes the most. Our findings concur with Becker (1964) and Dunkelberg (1989). Becker (1964) suggests that broad labor market experience increases human capital, while Dunkelberg (1989) suggest that individuals are more likely to exploit opportunities if they have developed useful information for entrepreneurship from previous employment. Also, our findings are similar to Shane (2003) who indicates the impact of past experience such as general business, functional, industry and start-up experiences predicts entry to self-employment.

The results do not support Hypothesis 2 that suggests human capital is positively related to behavior. According to Chrisman (1999) new ventures has few if any stocks of resources other than the knowledge of the entrepreneur. This knowledge will be used in the acquisition, development and application of other resources. In this sense, entrepreneurs themselves are a key resource during venture creation, more specifically their knowledge. Davidsson and Honig (2003) argue that if profitable opportunities for economic activity exist, individuals with more or higher quality human capital should be better at perceiving (opportunity identification), and once engaged in the process, such individuals should also have superior ability in successfully exploiting them. The results for the model that considers an overall human capital score showed a positive, but not significant relationship (p= .408). The model that consider human capital scores for industry experience, managerial experience, entrepreneurial experience and

entrepreneurial education did not strongly predicted entrepreneurial behavior (p= .520). The findings of our study are similar to those found by Davidsson and Honig (2003). The authors demonstrated that human capital predicts entry into nascent entrepreneurship but weakly explains entrepreneurial outcomes. These findings suggest a stronger impact of human capital on the decision to start a business (i.e. feasibility and desirability perceptions) than on entrepreneurial behavior. This is precisely what our tests to hypothesis 1 and 2 demonstrate. The question that remains is: Why human capital does not influence entrepreneurial behavior as the theories of intentional behavior suggest? According to Krueger (1993) intentions refer to the specific target behavior of starting a business. However, the vision of how to achieve this goal and the details of the goal are formulated after identifying the intended goal. This in turn, could influence the outcome of the target behavior (starting or abandoning the intended goal: starting the business). Moreover, Sheeran (2002) indicates that one key determinant in the transition from intentions to behavior is whether the behavior being predicted is a single action or a goal (an outcome that can be achieved by performing a variety of single actions). Goal intentions can be defined as the instructions that people give themselves to perform particular behaviors or to achieve certain desired outcomes (Triandis, 1980). Intentions are likely to be superior predictors of single actions than goals because goal intentions (outcomes such as building an enterprise) require multiple single actions, which in turn depend on several other factors. Because of this, it is unlikely that human capital alone is capable of predicting the desired outcome: successful entrepreneurial behavior.

Another personal factor examined in this section was social capital. Hypothesis 3 states that social capital is positively related to entrepreneurial attitudes. Both regression models

showed support for this hypothesis. The results suggest that social capital has a significant positive correlation (R=.278; p= .004) with attitude towards entrepreneurship. The variation of attitudes towards entrepreneurship as explained by social capital was 7.7 percent (R^2=.077). Similar to other studies (i.e. Cooper and Dunkelberg, 1987) when considering social capital scores individually we found that entrepreneurial parents and entrepreneurial friends have the highest predictive power of all the variables in the model (β= .282, p= .011) and (β= .178, p= .097), respectively. Nonetheless, we will not able to strongly support Hypothesis 4, which suggests that social capital is positively associated to entrepreneurial behavior. Both models did not significantly predict entrepreneurial behavior (p =.592 and p =.574). The literature on social capital stated that social and entrepreneurial networks that provide access to support and expertise are important in the decision-making process (Reynolds, 1992). Also, indicates that social ties to resource providers enhance the probability of opportunity exploitations (Aldrich and Zimmer, 1986). Overall, the findings of our study suggest that social capital influence attitudes towards entrepreneurship but not so successful entrepreneurial behavior. This is analogous to other studies that argue that the existence of entrepreneurial role models only weakly predicts future entrepreneurial behavior (Brockhous and Horwitz, 1986; Carsrud et al. 1987; Scott and Twomey, 1988) but the role model's subjective impact is a strong predictor. In this sense, role models affect entrepreneurship, but only if they affect attitudes (Krueger, 1993; Scherer et al. 1989).

Hypothesis 5 suggested that financial capital is positively associated to attitudes towards entrepreneurship. Two models were tested. The first model considers one financial capital score composed of all financial capital variables. The second model considers the financial capital

scores individually. Both models did not significantly predict entrepreneurial attitudes (p =.592 and p =.574), respectively. Based on these findings, financial capital does not influence perceived desirability and feasibility (attitudes towards entrepreneurship). This finding is similar to Reynolds (1997) who found that household income and availability of financial resources play a minor role in the decision to initiate a new firm start-up. Although having financial capital may be indicative of higher feasibility perceptions, the findings may suggest that it is not a variable that make individuals perceive the task at hand easy, mainly because financial resources (financial capital) alone do not build the business concept. It represents a tool to make the business concept happen, once it is conceived.

Support for Hypothesis 6 (financial capital is positively associated to behavior) was found. The results of the regression model that introduces a financial capital score composed of all financial capital variables showed with a 90 percent confidence level that financial capital is significantly and positive related (R^2=.029, p= .082), although weakly, to entrepreneurial behavior. Carter, Gartner and Reynolds (1996) suggested that individuals who succeed at starting a business differentiate from others who did not in the activities undertaken. The activities identified allow us to infer the role of financial capital in successful entrepreneurial behavior. The started group was aggressive in making their business real, which included activities such as: looked for facilities and equipment; sought and got financial support; formed a legal entity; organized a team; and acted with greater levels of intensity. In their study looking and obtaining financial support characterized the group that succeeded in starting a business. This suggests that greater financial capital may be crucial to successful entrepreneurial behavior since the individual already posses a critical resource to operate the business concept (Evans and

Leighton, 1991). In this sense, the critical task of seeking and obtaining financial support has already been accomplished because entrepreneurs do not have to search for finance since he/she already posses that resource.

Also we analyzed the effect of environmental factors on attitudes towards entrepreneurship and behavior. Environmental factors were classified as facilitating conditions, inhibiting conditions and displacement events (H_7 to H_{12}). The effects of environmental factors on attitudes towards entrepreneurship and behavior were hypothesized as follows: (1) the environment (situation), as indicated by facilitating conditions positively influences attitudes towards venture creation; (2).the effect of the environment (situation), as indicated by facilitating conditions will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort; (3) the environment (situation), as indicated by inhibiting conditions is negatively associated to attitudes towards venture creation; (4) the effect of the environment (situation), as indicated by inhibiting conditions will be lower for individuals who succeed in venture creation than for those who abandon the start-up effort; (5) displacement events influence attitudes towards entrepreneurship; and (6) displacement events influence entrepreneurial behavior.

According to Manolova, Eunni and Gyoshev (2008) the institutional environment exerts a powerful influence not only on entrepreneurial entry rates, but also on the ensuing trajectories of entrepreneurial initiatives. For new ventures, the institutional environment defines, creates, and limits entrepreneurial opportunities, and thus affects the speed and scope of entrepreneurial entry rates (Aldrich, 1990; Gnyawali & Fogel, 1994; Hwang & Powell, 2005). Hypothesis 7 tested the

relationship between facilitating conditions and attitudes towards entrepreneurship. Some support was found for this hypothesis. More specifically, availability of workers was the most predicting variable in the model and it was positively related to attitudes towards entrepreneurship (β= .201; p=.046). Also, support was found for the relationship of facilitating conditions and entrepreneurial behavior (hypothesis 8). The results indicate that facilitators is strongly and significantly related to entrepreneurial behavior (R= .480, p= .001). The proportion of variation on entrepreneurial behavior as explained by all facilitator scores is 23 percent (R^2=.231). When adjusted for the number of introduced variables to the equation the strength of the association is 16 percent (Adj.R^2= .164). Comparison of the beta coefficients (β) and the partial *t* values showed that availability of workers has the higher predictive power when compared to other variables (β = .236, p= .016). Also, availability of suppliers and financial resources show significant positive relations at a 90 percent confidence interval (β = .181, p= .076) and (β = .165, p= .095) respectively.

Entrepreneurial networks and support institutions show negative correlations (β =-.201, p= .047) and (β = -.180, p= .095) respectively. This is contrary to Davidsson and Honig (2003) who found that business networks had a significant positive effect on successfully starting a business (i.e. first sale). This may suggest a lack of legitimacy of business and entrepreneurial networks in Puerto Rico. However, the findings are analogous to Gatewood, Shaver and Gartner (1995) since results show that individuals who focus on tangible activities for setting up of the business distinguish those who started from those who did not. These findings may suggest that conditions related to the actual operations of the business (availability of workers, financial resources and suppliers) influence positively entrepreneurial behavior (start-up, defined as first

sale). Reynolds (1996) also found that individuals who succeed at starting a business were aggressive in making the business real. In this sense, conditions related to actual operations of the business may prove to be more predictive of successful entrepreneurial behavior.

Hypothesis 9 tested the relation between inhibiting conditions and attitudes towards entrepreneurship. The results indicate that inhibiting conditions have a significant (p= .040) and positive relationship (R^2= .040). The regression results required different interpretation based on the measurement scale used to ask respondents the effect of inhibiting conditions. Since we used a 7 point semantic differential scale where 7 indicates that the condition facilitates and 1 indicates that the condition inhibits, the regression results showed a positive relation. This in turn represents that as inhibitors approximate to 7 (increase) attitude scores will increase. In other words, as inhibitors approximate 7 in the scale the condition facilitates as perceived by respondents. In this sense the results of the regression are consistent with what was expected. Of all inhibiting conditions, governmental institutions, seem to played the most important role in attitudes towards entrepreneurship (β= .416; p=.000).

According to theorists, government has a significant role in promoting or inhibiting entrepreneurship (i.e. North, 1990; Vesper, 1990; Kostova, 1997). According to Gnyawaly and Fogel (1994) macroeconomic policies and procedures such as trading policies, entry barriers, business regulations, among others, can significantly affect opportunity exploitation. According to our findings, perceptions of government policies in Puerto Rico are not positive, which affects attitudes towards entrepreneurship. However, once the process has started inhibiting conditions do not influence outcome (successfully starting a business). Moreover, we were not able to find

support for the relationship between inhibiting conditions and behavior (hypothesis 10). The results for the overall regression equations suggest that inhibiting conditions do not strongly predict entrepreneurial behavior (p= .389 and p= .853). The results suggest that other factors at play influence the capacity of individuals to successfully complete their intentions of starting a business. Given that environmental policies, regulations and procedures are all constant to new entrepreneurs, inhibitors were not able to predict behavior. In this sense, we re-affirm that goal intentions (outcomes such as building an enterprise) require multiple single actions, which in turn depend on several other factors (Sheeran, 2002).

Finally we tested the relationship of displacements events on attitudes towards entrepreneurship (hypothesis 11) and entrepreneurial behavior (hypothesis 12). We were not able to find support on both hypotheses. The overall results suggest that the displacement events do not significantly contribute at predicting entrepreneurial attitudes and behavior. Although displacement events have not been empirical studied, insights from motivational studies suggest the influence of these. For example, pull and push factors, in addition to necessity and opportunity driven entrepreneurship have been put forth to explain drivers of entrepreneurial behavior (i.e. Williams, 2008; Harding et al. 2006; Maritz 2004; Minniti et al. 2006; Smallbone and Welter 2004). The findings of our study do not confirm displacement events as predictors of entrepreneurial attitudes and behavior. In this sense, these factors may be representative of what motivates entrepreneurs to start a business, but not how this intentional process comes into existence. Moreover, factors such as in-satisfaction with previous employment have been proposed by conceptual models (i.e. Schjoedt and Shaver, 2007). However, similar to their findings these factors were not proven since the authors concluded that opposed to other

literature employment and/or in-satisfaction with previous employment was conducing to entrepreneurship (instead of negative pushes such as unemployment).

5.4 The venture creation process: From Entrepreneurial Potential to Firm Birth

One of the objectives of this study was to construct a model of entrepreneurial behavior that analyzes the antecedents of entrepreneurial intentions; and the factors that influence the transition from intentions to entrepreneurial behavior (firm birth) in Puerto Rico. In this section, we present the results of Structural Equation Models developed to examine the proposed model and other alternative models that help provide insights into the entrepreneurial process. We employed the model generating scenario in which we postulated a model strictly based on the proposed theory and tested the fit of the hypothesized model. Later we proceeded in an exploratory manner to modify and re-estimate alternative models. In this sense, we bridged the confirmatory scenario to an exploratory scenario in order to create a model that helps understand the complex relationships immersed in the process of venture creation in Puerto Rico.

In the previous section we presented the results of the regression analyses for observed variables, scores created based on respondents answers to questions related to personal and environmental factors and the independent variables attitudes towards entrepreneurship and entrepreneurial behavior. Nonetheless, the analysis although useful in testing the proposed hypotheses do not provide measures of interrelationships, and the influences of those interrelationships, between the dependent variables and between the independent variables for unobserved variables. In the case of Structural Equation Modeling we can estimate multiple

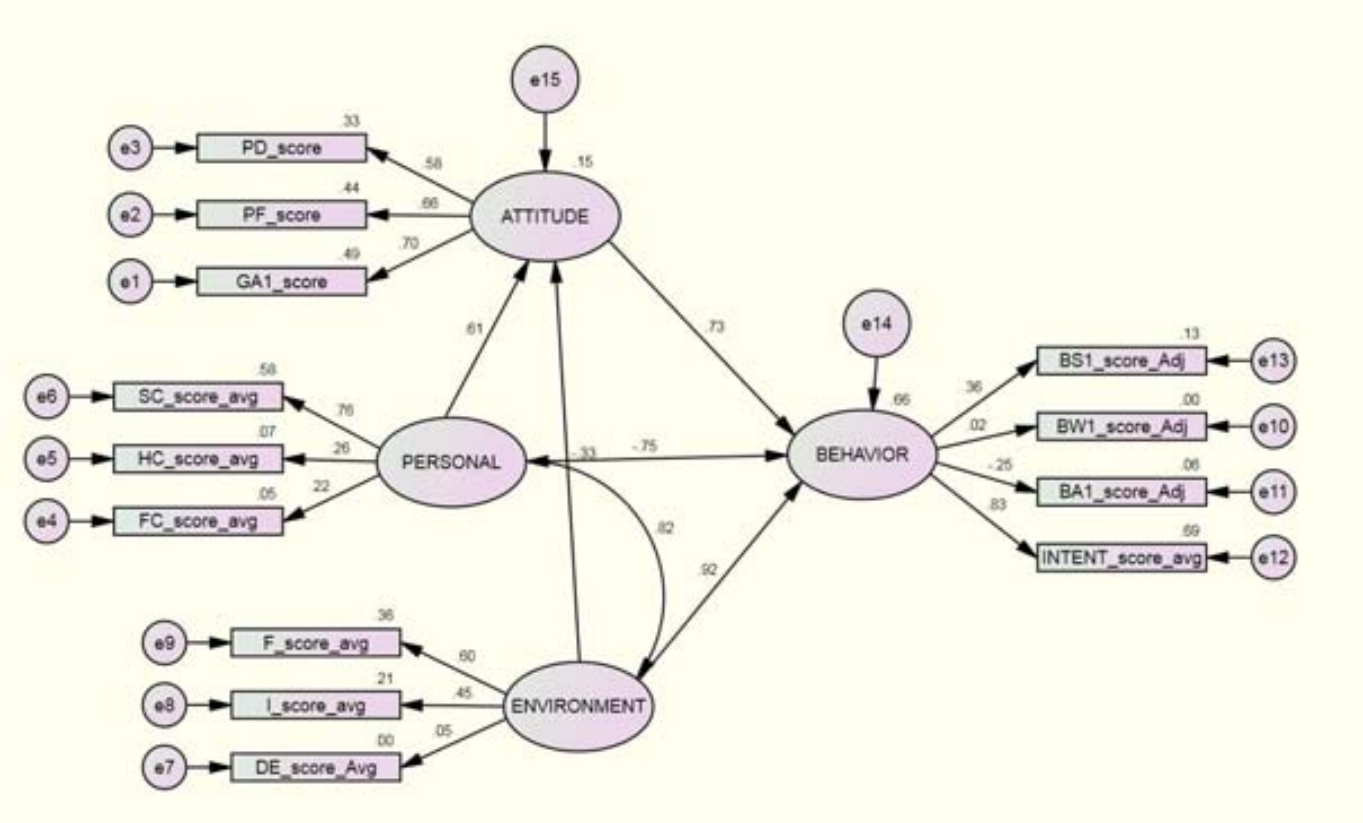
equations simultaneously. The main limitation of other multivariate techniques is that they can examine only a single relationship at a time; more specifically they can only examine a single relationship between the dependent and independent variables (Hair et al., 2008). Therefore, structural equation models (SEM) are useful when modeling complex phenomena such as venture creation, where dependent variables in one equation can be independent variables in other equation. In this section we present a Structural Equation Model. AMOS (v19) was used to construct the models (path diagrams). Attempts to improve the criteria for this SEM model are presented and discussed in Appendix 4.

We analyze the relationships among exogenous factors (personal and environmental) on attitudes towards entrepreneurship and on behavior. The observed variables for the personal factor construct include human capital, social capital and financial capital score averages. The observed variables for the environment construct are inhibiting conditions, facilitating conditions and displacement events average scores. The observed variables for the attitude construct (endogenous factor) are the desirability perceptions, feasibility perceptions and the general attitude score.

The model in Figure 6 provides a systematic view of the unobserved variables personal factors (human capital, social capital and financial capital), environmental factors (facilitators, inhibitors and displacement events) on attitudes towards entrepreneurship (desirability perceptions, feasibility perceptions and general attitude) and behavior (based on adjusted measures for status of the venture and intention score average). The model assumes that

personal factors and environmental factors affect both attitudes towards entrepreneurship and entrepreneurial behavior directly.

Figure 6 - The venture creation process (Structural Equation Model 1)



Model 1 (Figure 6) reflects a coefficient of determination value, R^2=.15 for the attitude construct. This value means that environment and personal factors explain 15 percent of the variance in attitudes towards entrepreneurship. The regression coefficients for desirability perceptions, feasibility perceptions and general attitude are β = .58, β = .66, and β = .70, respectively, which suggests that the three variables contribute strongly to the latent construct attitude. According to Hair et al. (2008) standardized loadings should be at least 0.50 because

loadings of this size or larger will confirm that the indicators are strongly related to their associated constructs and provide indication of construct validity. This was not the case for the other latent variables. The highest standardized loading for the personal construct was social capital (0.76). Similarly, the environment and behavior constructs only had one indicator with standardized loading higher than (0.5) facilitating conditions and intention strength, respectively. The model also displays the squared multiple correlations for each measured variable. This value represents the extent to which a measured variables' variance is explained by a latent factor, in other words how well the item measures the construct). The coefficient of determination for entrepreneurial behavior was R^2=.66. In this sense, we can argue that environment, attitude and personal factors can explain 66 percent of the variance in entrepreneurial behavior.

Personal factors positively influence attitudes and was shown by the standardized regression coefficient (β = 0.61). However, personal factors seem to influence behavior negatively (β = -0.75). This relationship was significant with 90 percent of confidence (p = 0.019). Also the environment appears to be negatively related to attitudes towards entrepreneurship (β = -0.33) but is positively related to entrepreneurial behavior (β = 0.92). There appears to be strong correlations between personal and environmental factors. Overall, attitudes towards entrepreneurship, personal factors and environment can explain 66 percent of the variability on entrepreneurial behavior. See table 55 for the regression weights (unstandardized) and the associated *p*-values.

Table 55 - Unstandardized Regression Weights for Model 1

Regression			Estimate	S.E.	C.R.	P
Attitude	<---	Personal	1.000			
Attitude	<---	Environment	-.267	.239	-1.119	.263
Behavior	<---	Environment	1.000			
Behavior	<---	Attitude	1.000			
Behavior	<---	Personal	-1.690	.723	-2.337	.019
GA1_score	<---	Attitude	1.207	.271	4.453	***
PF_score	<---	Attitude	.933	.212	4.395	***
PD_score	<---	Attitude	1.000			
FC_score_avg	<---	Personal	1.135	.763	1.488	.137
HC_score_avg	<---	Personal	1.000			
SC_score_avg	<---	Personal	3.205	1.716	1.868	.062
DE_score_Avg	<---	Environment	.098	.265	.371	.710
I_score_avg	<---	Environment	1.227	.394	3.111	.002
F_score_avg	<---	Environment	1.000			
BW1_score_Adj	<---	Behavior	1.000			
BA1_score_Adj	<---	Behavior	-9.033	5.410	-1.670	.095
INTENT_score_avg	<---	Behavior	1.031	.348	2.966	.003
BS1_score_Adj	<---	Behavior	32.996	16.759	1.969	.049

*** *p*-value less than 0.001.

An observation of the Chi-square (χ^2 = 192.885, p = .001) indicate that the data departs from the model and consequently does not suggest good fit. Basically, the Chi-square (χ^2) is a statistical measure of the difference used to compare the observed and estimated covariance matrices (Hair et al., 2008). Basically, if the estimated covariance and observed covariance matrices are sufficiently close, (residuals are low), the model and its relationships are supported. The null hypothesis of SEM is that the observed sample and SEM estimated covariance matrices are equal. Hence the Chi-square (χ^2) increases as differences in the covariance matrices increases. The Chi-square (χ^2) test evaluates the statistical probability (*p*-value) that the observed sample and SEM estimated covariance matrices are equal in the population. Therefore, contrary to the traditional interpretations of the *p*-value used in other parametric tests, small *p*-values (p □ .05) will suggest that the covariance matrices are unequal. Because of the above, in order to support the propose model we will expect small Chi-square (χ^2) values and high *p*-values (p ≥ .05). It is important to notice that the chi square test does not prove that the theory is correct but it evaluates to what extent the data and the proposed model have a good fit. Also, this goodness-of-fit measure is highly dependent on sample size and the parameters estimated (free parameters), therefore the degrees of freedom highly influence this statistic (df = 62).

Other good-of-fit indicators are the Root Mean Square Error of Approximation (RMSEA) and the Comparative Fit Index (CFI). The RMSEA index corrects for model complexity and sample size. The CFI is also insensitive to model complexity. It is accepted that RMSEAs greater than 0.1 will suggest reasonable error of approximation (Browne and Cudeck, 1993). Hair et al. (2008) suggest RMSEA values less than .08 and CFI above .92 for small samples, such as in this case. CFI values range from 0 to 1 and values close to 1 indicate very good fit.

The values of these good-of-fit indicators suggest that this model is not well fitted (RMSEA = .142; CFI =.446). Once again, it is important to notices that the discussed good-of-fit measures do not prove that the theory is incorrect but it evaluates to what extent the data and the proposed model have a good fit. Given that the purpose of the study is to develop a model of entrepreneurial behavior we centered the analysis on behavior. Overall, the predictors (in the model above environmental factors, personal factor and attitudes) explain 66.2 percent (R^2) of the variance in entrepreneurial behavior.

Overall, good of-fit indicators including, Comparative Fit Index (CFI), Chi-square (χ^2) and Root Mean Square Error of Approximation (RMSEA) did not suggest good fit of the models tested. It is important to notice that the test do not prove that the theory is correct but it evaluates to what extent the data and the proposed model has a good fit. Also, this goodness-of-fit measure is highly dependent on sample size and the parameters estimated (free parameters), therefore the degrees of freedom highly influence this statistic. In this sense, when using Structural Equation Modeling it will be necessary to conduct studies that will consider larger samples. As suggested by Hair et al. (2008), approximately 5-10 sample units will be required for each estimated parameter in the model. This in turn, may be complicated when conducting studies of nascent entrepreneurs, particularly when analyzing outcome behaviors (abandonment and start-up) due to the difficulty of obtaining large samples of individuals who have proven and manifested intentions as these are not register. Also, the low relationships between the observed and latent constructs also suggest the use of other constructs. For example, instead of using personal and environmental factors as constructs, one could use specific constructs such as human capital (i.e. education, entrepreneurial experience, management experience and industry

experience); social capital (i.e. formal support institutions, informal support institutions); facilitating conditions (i.e. availability of financial resources and government support institutions); among others. By using this specific constructs we will be able to increase the relation of the unobserved variables and the latent constructs. However, in this study we were not able to use these specific constructs separately due to the sample size. Analyzing these constructs separately will increase the amount of free parameters and therefore the requirements on sample size. Finally, another aspect that requires attention in terms of the use of Structural Equation Models is the dependent variable. Development of other measures of entrepreneurial outcomes may deem appropriate. Refer to Apendix 4 for other attempts to improve the criteria for this SEM model.

5.5 Discussion

The findings suggest that attitudes (desirability and feasibility perceptions) exert a role in entrepreneurship. When using data from the Global Entrepreneurship Monitor, we found that both entrepreneurial groups (individuals with intentions and actively involved in entrepreneurship) differed from the general population in terms of perceived entrepreneurial opportunities (desirability perceptions) and perceived knowledge for starting a business (perceived feasibility). The fact that perceived opportunities seem to play a role in formulating entrepreneurial intentions, as well as in operating entrepreneurial intentions, point to crafting initiatives that create opportunities and make these accessible to individuals. For example, Vesper's (1990) model of venture creation highlighted the role of opportunities, and according to Gnyawali & Fogel (1994) governmental policies and procedures can influence the existence and

exploitation of entrepreneurial opportunities (import-export restrictions; entry barriers; intellectual property laws; regulations of commercial activities; availability and reliability of market information; among others). This finding also suggests implications for future research. If in fact entrepreneurs are capable to construct opportunities by converting the ordinary in extraordinary and the usual in unusual (Mitton, 1989), then research should focus on how individuals perceive and convert opportunities. In this sense, cognitive theory and heuristics could provide insights into this process.

Social behaviorists and institutional theorists suggest that entrepreneurship will prosper if society positively values entrepreneurship, since it develops the required motivation that leads to intentions and consequently behavior. A perceived desirability indicator *"persons growing a successful new business receive high status"* considers the role of society in crafting individual perceptions. The fact that the results of this study showed that it was perceived significantly different for the entrepreneurial potential group and general population, but not for the early-stage entrepreneurs when compared to the general population, suggest that some attitudes may exert influence in the formulation of intentions but not necessarily in the operation of intentions. This in turn concurs with theories of planned behavior, which suggest attitudes may indirectly affect behavior: through intentions. In this sense future research should focused on how attitudes influence behavior, and the relative importance of these during the venture process: from entrepreneurial potential (intentions) to behavior (actively conducting entrepreneurship).

Feasibility perceptions differed for entrepreneurial potential (individual with intentions to start a business), early stage entrepreneurship (nascent entrepreneurs) and the general population.

Overall, the subjective evaluation of individuals' knowledge and skills seems to have an effect in the formulation of entrepreneurial intentions and actively conducting entrepreneurial activity. This variable showed the largest difference between samples as it represented approximately 40 percent for both cases: entrepreneurial potential (81 as opposed to 43 for the general population) and early-stage entrepreneurial activity (91 as opposed to 45). In this sense, the finding emphasizes the role of perceived knowledge and skills in the formulation and operation of intentions. However, as stated before this value is based on the individuals' own perceptions and it does not necessarily signify that the individual actually possess the required knowledge. Moreover, the measures of entrepreneurial intentions and early-stage entrepreneurial activity do not implicate successful start-up. In this sense, only time will validate the individual's perception in terms of whether he/she really had the necessary knowledge to create and manage a successful business. Following this argument, it will be crucial to conduct future research to examine how these perceptions evolve over time, as these may even redirect behavior (abandon start-up, or discontinue business). Also, an examination of the knowledge and skills should be conducted complying with Ajzen's (1991) issue of correspondence. Analyzing knowledge and skills necessary in different contexts (industry sector; stages of development; among others), will provide a more accurate measure of abilities (significant indicator of feasibility perceptions). Overall, the findings of this study are congruent with Aponte (2002), and Veciana et al. (1999). Attitudes towards entrepreneurship play a significant role in entrepreneurship. Puerto Rico's society tends to perceive the entrepreneurial career desirable but not as feasible. Also, university students in Puerto Rico value positively entrepreneurship but just as the rest of the population feasibility perceptions are lower (Sanchez, 2010) and (Veciana et al., 2000). This is also congruent with analysis conducted in other regions (i.e. Spain) that reveal most university

students consider desirable to create a new firm, although the perception of feasibility is not positive (Guerrero et al., 2006).

The role of exogenous factors on entrepreneurial potential and early-stage entrepreneurial activity was also examined. The factors included human capital variables, social capital variables, and other characteristics considered in the entrepreneurship literature. Not surprisingly, the findings showed that prior entrepreneurial exposure, education, entrepreneurial friends and employment status differed between the general population and the entrepreneurial groups (early stage entrepreneurial activity and potential entrepreneurs). Human capital theory has proven that previous exposure and education is positively associated to entrepreneurship. However it is still unknown whether previous exposure influences entrepreneurial activity because of knowledge acquired by the entrepreneur during previous start-ups or through attitudes. Future studies should address this issue. Also, although this study shows that education exerts a role in entrepreneurship it is important to analyze the extent and context in which education influences the entrepreneurial outcomes (type of business, success, growth orientation, among others).

Social capital theory suggests the positive role of networks (weak and strong ties) in entrepreneurship. However, the relationship of entrepreneurial networks and entrepreneurship has provided different interpretations. Some studies argue that networks (entrepreneurial friends or family) may impact entrepreneurship by creating positive attitudes towards the conduct. Other interpretation is that individuals who know others that started a business are more prone to start a business themselves because it impacts feasibility perceptions: "*if he can do it, I can do*

it". Another interpretation that has been put forth concerning networks is that this can provide knowledge, resources and information to the potential entrepreneur making he/she more predisposed to entrepreneurship. Based on the above, future research should focus on analyzing how, why and to what extend social capital influences the entrepreneurial process. Employment status variables have been addressed in entrepreneurship studies. More specifically, the literature often suggests unemployment triggers entrepreneurship (mainly necessity entrepreneurship). Since most individuals who indicated to have intentions to start a business were employed, our study shows a contradicting view. The findings of this study suggest that a closer look should be given to governmental initiatives that are being directed towards promoting entrepreneurship and self-employment among unemployed individuals, as these may not be the population that should be targeted. Moreover, studies should address motivational factors (work satisfaction, growth aspirations, opportunity identification, and need of independence) as well as environmental factors that will lead employed individuals take the steps towards the entrepreneurial career. Overall, this phase of the study examined entrepreneurial potential and early stage entrepreneurship in Puerto Rico, using data from the Global Entrepreneurship Monitor. Several implications for both, policy makers and entrepreneurship researchers were discussed. Nonetheless there is no doubt that entrepreneurship is a complex phenomenon that requires a closer look at the outcomes (entrepreneurial behavior). In the next paragraphs we discuss the role of exogenous factors on entrepreneurial behavior and attitudes towards entrepreneurship (the second phase of the study).

Analysis of Variance (ANOVA) was conducted to report differences between entrepreneurial outcome groups. Groups were classified a priori based on their response to

question B1 that require respondents to indicate the status of the start-up effort (started business, continue conducting activities to start the business and discontinue activities to start the business). Differences in terms of attitudes, human capital, social capital, financial capital, environmental conditions, displacement events and other characteristics were assessed. Data for this analysis was collected through telephone surveys to SBDC's clients in Puerto Rico. After 5 call backs to every potential participant we were able to obtain 106 valid surveys (19 individuals who discontinued the start-up efforts, 49 who continue conducting activities to start-up and 38 individuals who succeeding in starting the business). The results from this analysis provided cues to understand the underlying characteristics of entrepreneurial outcomes (individuals who start-up, abandon or still working towards start-up).

Differences in terms of attitudes, human capital, social capital, financial capital, environmental conditions, displacement events and other characteristics were examined for the three outcome groups. The results showed that individuals who are still working in starting the business enjoy the tasks, and are more satisfied with the process than the other two groups. Also, individuals who are still conducting activities but have not yet abandoned or started the venture seem to evaluate the environment more favorable than their counterparts. This could be an indicator of why they continue conducting activities toward start-up and have not abandoned the start-up efforts. People who abandoned the start-up efforts considered starting a business less desirable, they were less secure of their capabilities, less committed to start the business when compared with the other two groups. These findings could be indicative of why they did not persist in the startup effort. The results also suggest that personal savings is an important condition for starting the business. Individuals who succeeded at starting the business valued

personal savings higher than individuals who are currently involved in conducting activities to start and those who abandon the start-up efforts.

Negative life events such as losing a family member (D3) seem to influence more the decision to start the business of people who started a business when compared to people who abandon. In terms of other characteristic more women have been successful at starting the business (although this finding was not significant). Finally, low mean values for inhibitor variables suggest that taxes, regulations, governmental institutions and registration procedures inhibit the entrepreneurial processes. Overall, the findings were consistent with those found in the literature of intentions. Although several variables differed between the groups, many other variables did not differed significantly. Particularly, most attitude variables were not significantly different. This may be due to the fact that all individuals had manifested intentions since they already started conducting activities to start a business. This will suggest that attitudes may be better at explaining entrepreneurial propensity (intentions) than entrepreneurial outcomes. Also, we couldn't find differences between the entrepreneurial outcome groups in terms of most personal factors and environmental factors. This in turn, may suggest that personal and environmental factors play an indirect role in entrepreneurial behavior, through attitudes. However it is important to notice that ANOVA examines differences among means in populations, and one basic assumption is that the criterion variable is fixed. Inferences were made to the specific categories. One of the categories included in the analysis consisted of the individuals who continue conducting activities to start the business. This population may fall in either of the other two categories: start-up or abandon group. Because of this we cannot make absolute inferences in terms of the variables that distinguish entrepreneurial outcomes.

The study proposed several hypotheses to test the relationship between the exogenous factors (personal and environmental) on attitudes and behavior. We analyzed the relationship of human capital, social capital and financial capital, on entrepreneurial attitudes and behavior (H_1 to H_6). The effects of personal factors on attitudes towards entrepreneurship and behavior were hypothesized as follows: (1) human capital is positively associated to attitudes towards venture creation; (2) the effect of human capital will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort; (3) individual social capital is positively associated to attitudes towards venture creation; (4) the effect of social capital will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort; (5) individual financial capital is positively associated to attitudes towards venture creation; and (6) the effect of financial capital will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort.

The results suggested that human capital is positively related to attitudes towards entrepreneurship. From the different categories of human capital (i.e. industry experience, entrepreneurial experience, management experience and entrepreneurial education), we found that management experience influences entrepreneurial attitudes the most. The results provide support for Hypothesis 1 that indicates human capital is positively associated to attitudes towards entrepreneurship. However, the results did not support Hypothesis 2 that suggests human capital is positively related to behavior. Hypothesis 3 stated that social capital is positively related to entrepreneurial attitudes. The results suggested that social capital has a significant positive correlation with attitude towards entrepreneurship. Having entrepreneurial parents and friends

predicted more than other variables in the model, respectively. Hypothesis 4, which suggests that social capital is positively associated to entrepreneurial behavior, was not supported. No support was found for hypothesis 5 that suggests financial capital is positively associated to attitudes towards entrepreneurship. Some support for Hypothesis 6 was found. Financial capital appears to be positively related to entrepreneurial behavior. However, it only explains 3 percent of the variance in behavior.

The effects of environmental factors on attitudes towards entrepreneurship and entrepreneurial behavior were also examined. Environmental factors were classified as facilitating conditions, inhibiting conditions and displacement events (H_7 to H_{12}). The effects of environmental factors on attitudes towards entrepreneurship and behavior were hypothesized as follows: (1) the environment (situation), as indicated by facilitating conditions positively influences attitudes towards venture creation; (2).the effect of the environment (situation), as indicated by facilitating conditions will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort; (3) the environment (situation), as indicated by inhibiting conditions is negatively associated to attitudes towards venture creation; (4) the effect of the environment (situation), as indicated by inhibiting conditions will be lower for individuals who succeed in venture creation than for those who abandon the start-up effort; (5) displacement events influence attitudes towards entrepreneurship; and (6) displacement events influence entrepreneurial behavior.

Some support was found for hypothesis 7 (facilitating conditions on attitudes towards entrepreneurship). Availability of workers was the most predicting variable in the model and it

was positively related to attitudes towards entrepreneurship. Also, support was found for the relationship of facilitating conditions and entrepreneurial behavior (hypothesis 8). From all facilitators, availability of workers has the higher predictive power when compared to other variables. Availability of suppliers and financial resources showed significant positive relations. Entrepreneurial networks and support institutions showed negative relations with entrepreneurial behavior. The findings may suggest that conditions related to the actual operations of the business (workers, suppliers and financial resources) influence positively entrepreneurial behavior (start-up). Some support was found for hypothesis 9. Of all inhibiting conditions, governmental institutions played the most important role on attitudes towards entrepreneurship. We did not find support for the relationship between inhibiting conditions and behavior (hypothesis 10). The relationships of displacements events on attitudes towards entrepreneurship (hypothesis 11) and entrepreneurial behavior (hypothesis 12) were not supported. As indicated by some of the literature reviewed displacement events may be more related to the timing of the decision to start than on attitudes towards entrepreneurship and entrepreneurial behavior. Refer to Table 56 for a summary of findings and Figure 7 for the relationships found in the study.

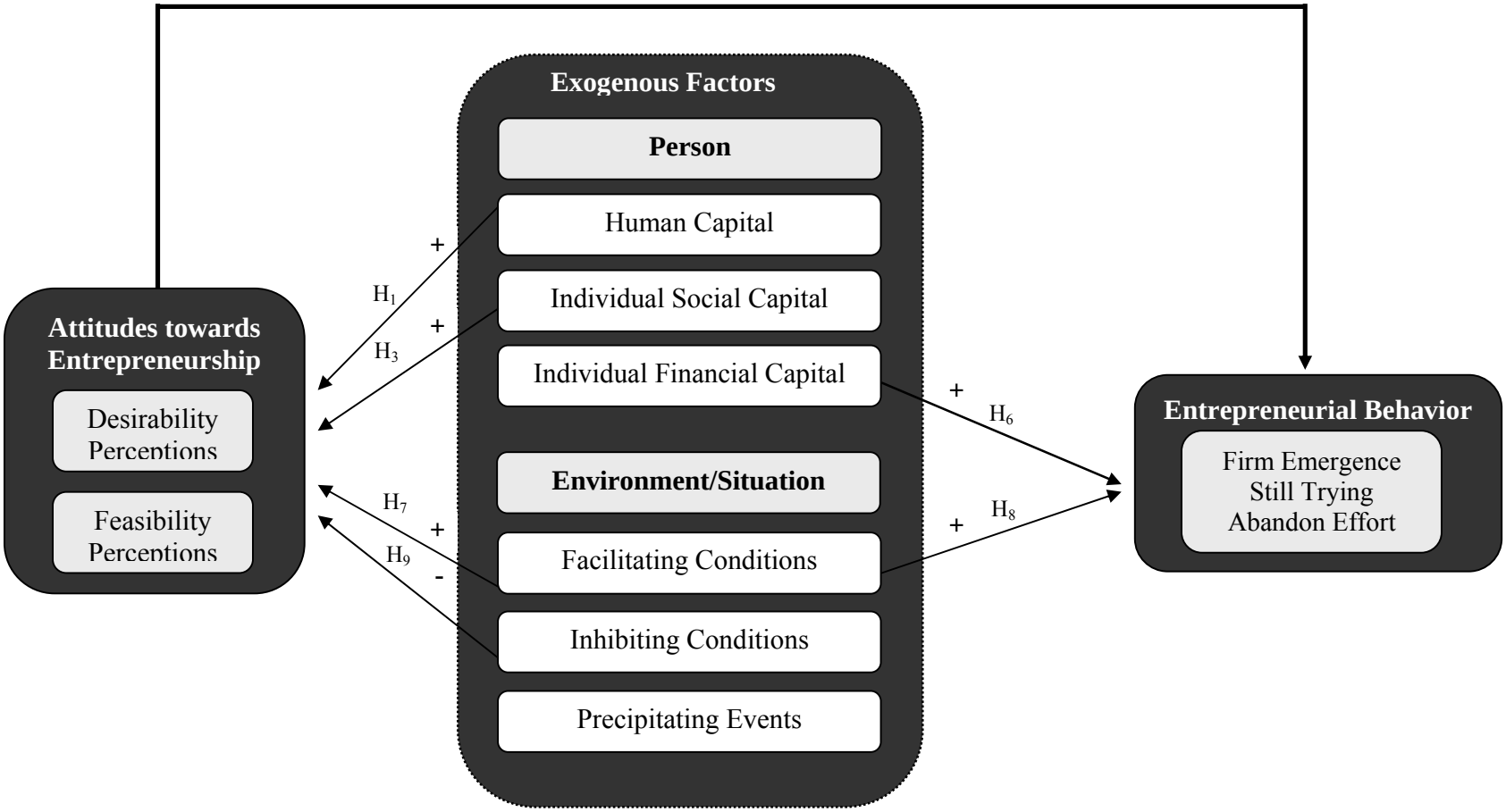
Table 56 – Summary of Findings

HYPOTHESIS	**SUPPORT**	
	Yes	**No**
H_1: Human capital is positively associated to attitudes towards venture creation.	**X**	
H_2: The effect of human capital will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort.		**X**

Table 56 – Summary of Findings

HYPOTHESIS	**SUPPORT**	
	Yes	**No**
H_3: Individual social capital is positively associated to attitudes towards venture creation.	**X**	
H_4: The effect of social capital will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort.		**X**
H_5: Individual financial capital is positively associated to attitudes towards venture creation.		**X**
H_6: The effect of financial capital will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort.	**X**	
H_7: The environment, as indicated by facilitating conditions is associated to attitudes towards venture creation	**X**	
H_8: The effect of the environment (situation), as indicated by facilitating conditions will be higher for individuals who succeed in venture creation than for those who abandon the start-up effort.	**X**	
H_9: The environment, as indicated inhibiting conditions is associated to attitudes towards venture creation.	**X**	
H_{10}: The effect of the environment (situation), as indicated by inhibiting conditions will be lower for individuals who succeed in venture creation than for those who abandon the start-up effort.		**X**
H_{11}: Displacement events influence attitudes towards entrepreneurship.		**X**
H_{12}: Displacement events influence entrepreneurial behavior (firm emergence).		**X**

Figure 7 - Framework of the Study and Actual Relations



Source: Developed by the author

Several models of entrepreneurial behavior were tested using structural equation modeling (in text and appendix). Model 1 in Figure 6 suggests that environment and personal factors explain 15 percent of the variance in attitudes towards entrepreneurship. Also, the environment, attitude and personal factors explain 66 percent of the variance in entrepreneurial behavior. However, good-of-fit indicators including, Comparative Fit Index (CFI), Chi-square (χ^2) and Root Mean Square Error of Approximation (RMSEA) did not suggest good fit of the models tested. It is important to notice that the tests do not prove that the theory is correct but it evaluates to what extent the data and the proposed model have a good fit. Also, this goodness-of-fit measure is highly dependent on sample size and the parameters estimated (free parameters), therefore the degrees of freedom highly influence this statistic. In this sense, when using Structural Equation Modeling it will be necessary to conduct studies that will consider larger samples. As suggested by Hair et al. (2008), approximately 5-10 sample units will be required for each estimated parameter in the model. This in turn, may be complicated when conducting studies of nascent entrepreneurs, particularly when analyzing outcome behaviors (abandonment and start-up) due to the difficulty of obtaining large samples of individuals who have proven and manifested intentions as these are not register. Finally, the low relationships between the observed and latent constructs also suggest the use of other measures for the constructs.

6. CONCLUSIONS AND IMPLICATIONS

The purpose of the study was to analyze the antecedents of entrepreneurial intentions; and the factors that influence the transition from intentions to entrepreneurial behavior (firm

birth) in Puerto Rico. The study employs quantitative methodology to test the determinants of entrepreneurial intentions (attitudes towards entrepreneurship) and the factors that influence the intention-behavior relationship. Moreover, the study analyzes how exogenous factors influence attitudes towards entrepreneurship (antecedents of intentions) and the gap between intentions and behavior. By examining these factors we were be able to take a glimpse of the entrepreneurial process: from the formulation of entrepreneurial intention to successful entrepreneurial attempt (firm emergence). The specific objectives of the study were: (1) to verify the determinants (antecedents) of entrepreneurial intentions in Puerto Rico, (2) To determine the influence of exogenous factors (personal and situational) on the intention-behavior relationship from nascent entrepreneurs in Puerto Rico and (3) to evaluate how exogenous factors (personal and situational) influence entrepreneurial attitudes in Puerto Rico.

The study comprised two phases of the entrepreneurial process: the formulation of entrepreneurial intentions and the intention-behavior relation (firm emergence). There is vast literature that supports antecedents of intentions (i.e. Krueger et al., 2000). However, examining antecedents of intentions allowed us to corroborate the relevance of intentional models in the context of Puerto Rico. The role of attitudes towards entrepreneurship in entrepreneurial intentions was examined using data from the Global Entrepreneurship Monitor, Adult Population Survey (2007). The Adult Population Survey (APS) considered a random sample of 2000 adults (ages 18-64) in Puerto Rico. The relationship between attitudes towards entrepreneurship and intentions was analyzed using inferential statistics, specifically Analysis of Variance (ANOVA). We explored differences between individuals who have entrepreneurial intentions (potential entrepreneurs) and individuals who do not have the intention of creating a business. Also, we

explored differences of individuals involved in early stage entrepreneurship as defined by the Global Entrepreneurship Monitor (TEA). The second phase of the framework considered the transition from intentions to behavior. We analyzed the effect of exogenous factors (personal and situational) on entrepreneurial outcomes (i.e. firm birth) and on attitudes towards entrepreneurship. A survey was developed to measure the influence of exogenous factors (human capital, social capital, financial capital, facilitators, inhibitors and displacement events). Data was collected from reported nascent entrepreneurs at SBDCs in Puerto Rico.

The results were summarized using descriptive statistics such as means, frequencies, percentages and standard deviations. Inferential statistics such as Analysis of Variance (ANOVA) were used to analyze the differences between groups and entrepreneurial outcomes. Regression Analysis was conducted to examine the relationship between exogenous factors (human capital, social capital, financial capital, facilitating conditions, inhibiting conditions and displacement events) on attitudes towards venture creation and entrepreneurial behavior. Structural equation modeling (SEM) was used to test whether the broader factors personal factors (i.e. human capital, social capital and financial capital) and environmental factors (i.e. facilitators, inhibitors and displacement events) cause attitudes towards entrepreneurship and entrepreneurial behavior. The Statistical Package for Social Sciences (SPSS v.19) and Analysis of Moment Structures (AMOS v. 19) module were used to conduct data analysis. .In the next sections we discuss practical and theoretical implications, limitations of the study and future lines of research

6.1 Practical Implications

The findings suggested that attitudes (desirability and feasibility perceptions) exert a role in entrepreneurship. Both entrepreneurial groups (individuals with intentions and actively involved in entrepreneurship) differed from the general population in terms of perceived entrepreneurial opportunities (desirability perceptions) and perceived knowledge for starting a business (perceived feasibility). The fact that perceived opportunities seem to play a role in formulating entrepreneurial intentions, as well as in operating entrepreneurial intentions, point to crafting initiatives that create opportunities and make these accessible to individuals. For example, Vesper's (1990) model of venture creation highlighted the role of opportunities, and according to Gnyawali & Fogel (1994) governmental policies and procedures can influence the existence and exploitation of entrepreneurial opportunities (import-export restrictions; entry barriers; intellectual property laws; regulations of commercial activities; availability and reliability of market information; among others). This finding suggests the need of creating programs that not only make opportunities accessible but help entrepreneurs evaluate the business opportunity in order to increase the probability of success in the long run.

Another important finding considers the role of society in crafting individual attitudes towards entrepreneurship. A perceived desirability indicator "*persons growing a successful new business receive high status*" considers the role of society in crafting individual perceptions. The fact that the results of this study show that this indicator was significantly different from the entrepreneurial potential group and general population, suggests that programs to stimulate entrepreneurship in the region should focus on signaling successful images of entrepreneurs in

the region. This in turn, will make individuals find the entrepreneurial career more desirable and increase the base of potential entrepreneurs in the region.

Not surprisingly, the findings showed that prior entrepreneurial exposure and education differed between the general population and the entrepreneurial groups (early stage entrepreneurial activity and potential entrepreneurs). In this sense, the finding emphasizes the role of knowledge and skills in the formulation and operation of intentions. Because of the above, to continue developing the entrepreneurial base in the region requires programs that give individuals knowledge and skills in venture creation. Entrepreneurial education and training programs that develop this knowledge and skills will be necessary.

Overall, the findings from the analysis conducted using GEM data are congruent with Aponte (2002), and Veciana et al. (1999). Attitudes towards entrepreneurship play a significant role in entrepreneurship. Puerto Rico's society tends to perceive the entrepreneurial career desirable but not as feasible. Also, university students in Puerto Rico value positively entrepreneurship but just as the rest of the population feasibility perceptions are lower (Sanchez, 2010) and (Veciana et al., 2000). This is also congruent with analysis conducted in other regions (i.e. Spain) that reveal most university students consider desirable to start new businesses, although the perceptions of feasibility are not as positive (Guerrero et al., 2006). In this sense, developing programs to facilitate the process of venture creation such as education, training and flexible governmental procedures may deem appropriate in stimulating the entrepreneurial base in the region.

The literature often suggests unemployment triggers entrepreneurship (mainly necessity entrepreneurship). Since most individuals who indicated to have intentions to start a business were employed, our study shows a contradicting view. The findings of this study suggest that a closer look should be given to governmental initiatives that are being directed towards promoting entrepreneurship and self-employment among unemployed individuals, as these may not be the population that should be targeted. Moreover, programs and incentives to stimulate corporate entrepreneurship should be developed.

The study proposed several hypotheses to test the relationship between the exogenous factors (personal and environmental) on attitudes and behavior. The results suggested that human capital is positively related to attitudes towards entrepreneurship. From the different categories of human capital (i.e. industry experience, entrepreneurial experience, management experience and entrepreneurial education), we found that management experience influences entrepreneurial attitudes the most. However, the results did not support Hypothesis 2 that suggests human capital is positively related to behavior. In this sense, we emphasize the importance developing programs that targeting individuals with high human capital since this already have positive attitudes towards entrepreneurship; therefore their propensity to conduct the behavior (starting a business) may be higher. However, finding that human capital did not significantly influence successful behavior (starting a business) suggest there is much more involved in entrepreneurial behavior. This is similar to results found for social capital variables, which appear to influence attitudes but not behavior. However, contrary to human capital and social capital, financial capital seems to influence positively entrepreneurial behavior but not attitudes. This in turn may suggest that tangible resources may be more valuable when

conducting the behavior of starting a business, while intangible resources such as education, experience, networks, among others are more valuable at creating positive attitudes and consequently intentions (early stages of venture creation). In this sense, programs that make available tangible resources (i.e. money) may stimulate actual entrepreneurial behavior, while programs that help develop and garner intangible resources may be more appropriate in stimulating entrepreneurial potential.

The effects of environmental factors on attitudes towards entrepreneurship and entrepreneurial behavior were also examined. Some support was found for hypothesis 7 (facilitating conditions on attitudes towards entrepreneurship). Availability of workers was the most predicting variable in the model and it was positively related to attitudes towards entrepreneurship. Also, support was found for the relationship of facilitating conditions and entrepreneurial behavior (hypothesis 8). From all facilitators, availability of workers has the higher predictive power when compared to other variables. Availability of suppliers and financial resources showed significant positive relations. Entrepreneurial networks and support institutions showed negative relations with entrepreneurial behavior. The findings may suggest that conditions related to the actual operations of the business (workers, suppliers and financial resources) influence positively entrepreneurial behavior (start-up). Similar to findings related to financial capital, availability of tangible resources may contribute the most in actual behavior (starting businesses). These in turn, suggest the importance of developing programs that make tangible resources available to potential entrepreneurs. Moreover, inhibiting conditions played a role on attitudes towards entrepreneurship but not on behavior. This suggests the need of policies that facilitate the process (i.e. flexible governmental procedures) in order to increase

entrepreneurial potential. Finally, we did not find support for the relationship of displacements events on attitudes towards entrepreneurship (hypothesis 11) and entrepreneurial behavior (hypothesis 12). As indicated by some of the literature reviewed displacement events may be more related to the timing of the decision to start than on attitudes towards entrepreneurship and entrepreneurial behavior. In the next section we discuss theory implications derived form this study.

6.2 Theoretical Implications

The findings suggested that attitudes (desirability and feasibility perceptions) exert a role in entrepreneurship. In this sense, attitudes towards entrepreneurship should continue to be emphasized in entrepreneurship literature, specifically how attitudes are constructed. This in turn, increases our understanding of entrepreneurial potential. Moreover, the fact that perceived opportunities seem to play a role in formulating entrepreneurial intentions, as well as in operating entrepreneurial intentions, signals the importance of addressing how and when opportunities are discovered. According to Bhave (1994) although all entrepreneurs formulate an intention to start a business (decision to start), some individuals discover opportunities prior the formulation of entrepreneurial intentions, while some develop an intention prior searching for entrepreneurial opportunities. This suggests several questions. (1) Does perceived opportunities stimulate attitudes towards entrepreneurship? (2) Does attitudes stimulate opportunity search? Although this second question was not addressed in this study, it will be important for theory development to assess the role of opportunities on venture creation, specifically to determine whether opportunity discovery precedes attitudes or is it the other way around. This in turn, will

provide a better picture of the venture creation process and will signal the core of entrepreneurship (intentions or opportunities).

Entrepreneurship will prosper if society positively values entrepreneurship, since it develops the required motivation that leads to intentions and consequently behavior. The fact that the results of this study showed that it was perceived significantly different for the entrepreneurial potential group and general population, but not for the early-stage entrepreneurs when compared to the general population, suggest that some attitudes may exert influence in the formulation of intentions but not necessarily in the operation of intentions. This in turn concurs with theories of planned behavior, which suggest attitudes may indirectly affect behavior: through intentions.

Feasibility perceptions seem to have an effect in the formulation of entrepreneurial intentions and actively conducting entrepreneurial activity. However, this valuation was based on the individuals' own perceptions and it does not necessarily signify that the individual actually possess the required knowledge. Moreover, the measures of entrepreneurial intentions and early-stage entrepreneurial activity do not implicate business success. In this sense, only time will validate the individual's perception in terms of whether he/she really had the necessary knowledge to create and manage a successful business. Moreover, Ajzen's (1991) issue of correspondence will suggest theoretical implications particularly since perceived knowledge and skills for venture creation do not necessarily represent actual knowledge and skills in a specific venture. This will suggest the need of considering the characteristics of the potential organization as suggested by Gartner (1985). In this sense, the Theory of Planned Behavior may

provide the cues for developing several venture creation models specific to characteristics of the potential organization (i.e. industry sector, entry wedges, among others).

Prior entrepreneurial exposure, education, entrepreneurial friends and employment status differed between the general population and the entrepreneurial groups (early stage entrepreneurial activity and potential entrepreneurs). Although human capital theory has proven that previous exposure and education is positively associated to entrepreneurship, it is still unknown whether previous exposure influences entrepreneurial activity because the knowledge acquired by the entrepreneur during previous start-ups are consistent (relevant) with those required to start the business in question. More specific categories of human capital in terms of how relevant these are to the potential venture could improve theory development.

Although social capital theory suggests the positive role of networks, the relationship of entrepreneurial networks and entrepreneurship has provided different interpretations. Some studies argue that networks (entrepreneurial friends or family) may impact entrepreneurship by creating positive attitudes towards the conduct. Other interpretation is that individuals who know others that started a business are more prone to start a business themselves because it impacts feasibility perceptions: "*if he can do it, I can do it*". Another interpretation that has been put forth concerning networks is that this can provide knowledge, resources and information to the potential entrepreneur making he/she more predisposed to entrepreneurship. To improve the explaining capacity of existing theories, the specific role of different networks should be addressed. These roles should be examined at different stages of the venture creation process. For example, having entrepreneurial parents may exert influence in entrepreneurship by

developing positive attitudes towards entrepreneurship and consequently intentions to start a business. However, entrepreneurial networks may exert more influence in successful startup because they provide knowledge and resources to set up the business.

Since most individuals who indicated to have intentions to start a business were employed, the findings of this study suggest the development of theories that consider entrepreneurship in existing organizational settings. These theories should address motivational factors (work satisfaction, growth aspirations, opportunity identification, and independence) as well as environmental factors that will lead employed individuals take the steps towards the entrepreneurial career.

The results showed that individuals who are still working in starting the business enjoy the tasks, and are more satisfied with the process than the other two groups (startup and abandoned). Also, individuals who are still conducting activities but have not yet abandoned or started the venture seem to evaluate the environment more favorable than their counterparts. This could be an indicator of why they continue conducting activities toward start-up and have not abandoned the start-up efforts. Also, people who abandoned the start-up efforts considered starting a business less desirable, they were less secure of their capabilities, less committed to start the business when compared with the other two groups. These findings could be indicative of why they did not persist in the startup effort. Based on these findings, theories should address personal differences among individuals, such as persistence or optimism. For example, highly optimistic individuals may persist in conducting activities towards starting the business even if negative signs that suggest abandoning the venture are present.

Te results suggest that attitudes may be better at explaining entrepreneurial propensity (intentions) than entrepreneurial outcomes. In order to improve existing theories that use attitudes as precursors of intentions and consequently behavior, researchers should analyze the changing conditions of attitudes. Note that attitudes are not constant throughout the process, and therefore changes in attitudes towards the conduct may in fact better explain the final outcomes. Also, individuals may differ in terms of what they wanted to accomplish through venture creation. The literature of entrepreneurial intentions considers entrepreneurial behavior (startup) the dependent variable. However, entrepreneurial behavior may not be necessarily the goal individuals want to achieve, but the instrument to achieve a goal. For example, individuals want to secure employment (goal), because of this they will attempt to start a business (instrument to achieve goal). If the goal changes along the process (i.e. either because they found employment or because the recognized that entrepreneurship does not secure employment) differences will be observed in terms of outcomes. In this sense, theories that take into account the actual goal of potential entrepreneurs may provide insights into successful entrepreneurial behavior.

The findings suggest that intangible recourses may be more important in developing intentions to start a business, and that tangible resources may be more important for actual behavior. According to Bhave (1994) the first stage of the venture creation process (opportunity recognition stage) which includes decision to start, opportunity recognition and development of the business concept requires more intangible resources. The author argues that the technology set-up and organization creation stage requires more tangible resources such as money. In this sense, if individuals have resources (intangible) to complete the first stage but do not have resources for the second stage (tangible) these will not be successful in starting the venture. This

may be the reason why financial capital influenced entrepreneurial behavior and not attitudes towards entrepreneurship. The theoretical implications of this finding suggest that factors exert different roles at different stages in the venture creation processes. Theory should that considers the impact of these personal factors in different stages in the process should be developed.

The most interesting finding related to environmental factors relate to facilitating conditions. Availability of workers, availability of suppliers and financial resources are positively related to entrepreneurial behavior. Entrepreneurial networks and support institutions showed negative relations with entrepreneurial behavior. The findings suggest that conditions related to the actual operations of the business (workers, suppliers and financial resources) influence positively entrepreneurial behavior (start-up). Similar to the previous discussion on personal factors, these findings suggest the role of tangible resources on entrepreneurial behavior, particularly since workers, suppliers and financial resources are more tangible than the benefits that could be extracted from entrepreneurial networks and support institutions. Also, entrepreneurial networks and support institutions may be more useful in completing the initial stages of the venture creation process (intention to start and development of business concept), while availability of workers, suppliers and financial resources are required to set-up the organization (third stage in the venture creation process). Overall, theory on entrepreneurial behavior could benefit from developing models that take into consideration the contributions of each environmental factor at different stages of the venture creation process. In the next section we discuss the limitations and conclude with future research lines derived from both the implications and limitations of this study.

6.3 Limitations and future research lines

In this section we address the limitations of this study. The main limitation in this study was the sample of nascent entrepreneurs. Interestingly enough, it is precisely this limitation what makes this study a significant contribution in the entrepreneurship field. The main objective of this study was to identify the factors that influence the transition from entrepreneurial intentions to entrepreneurial behavior. This was particularly important because of the lack of descriptions of the entrepreneurial process, more specifically, lack of empirical validation of factors embedded in the process, specifically the transition from entrepreneurial potential to firm birth. Although it is recognized that the link from intentions to entrepreneurial behavior is imperfect, most empirical work on entrepreneurial behavior use entrepreneurial intentions as a proxy for entrepreneurial behavior. The main reason is that entrepreneurial potential (individuals who have intentions of creating a business) and nascent entrepreneurs are unregistered, which makes it difficult to identify samples that allow exploration of the process and comparisons with others who have entrepreneurial intentions but do not manage the required transitions for firm birth.

One approach to manage this limitation has been to select large samples of the adult population in regions in order to identify individuals who manifest entrepreneurial intentions. Examples of the above are the United States Panel Study of Entrepreneurial Dynamics (Reynolds, 2000) and the Global Entrepreneurship Monitor (Reynolds et al., 2005). This sampling selection approach requires large samples of individuals to identify a representative sample of individuals with entrepreneurial intentions (entrepreneurial potential). The main problem with this sampling selection approach is that it requires extremely large samples of

individuals to identify relatively small samples of individuals with entrepreneurial intentions. This in turn, makes the use of this approach extremely costly, particularly if the unit of analysis is the outcome of the entrepreneurial attempt (firm birth). Data from the Global Entrepreneurship Monitor (GEM) 2007, Puerto Rico region, illustrates the limitations of obtaining samples by this approach. For example, the Adult Population Survey (APS) which selects a random sample of 2,000 individuals from the adult population (18-64) showed that roughly 3 percent (53 individuals) were conducting activities to start a business at the time of interview (nascent entrepreneurs). If our study was to employ Global Entrepreneurship Monitor samples of nascent entrepreneurs to analyze the factors that influence the intentions-behavior relationship our sample will need to be drawn from a population of only 53 individuals, assuming all individuals will be available and willing to participate in this study, which is clearly unrealistic.

Other approaches suggest analyzing samples of individuals with proven intentions to start a business such as clients from Small Business Development Centers (SBDCs). Although we recognized that the sample derived from SBDCs is not a representative sample, we strongly believe it helps accomplish the purpose of the study in practical terms, while complying with key theoretical assumptions. As Gatewood et al. (1995) puts forth: *"…clients of an SBDC are obviously different from the general population in that they have taken one concrete step in the direction of organizing a new venture. They are also different from sophisticated repeat-entrepreneurs who would not require the services offered by SBDCs. On the other hand, SBDC clients represent an important segment of the population to which we hope our findings will generalize – individuals seeking to start businesses."* The costs of collecting information from

large samples of the population in order to screen nascent entrepreneurs would have surpassed the benefits.

In order to overcome this limitation, our study analyzed data from two different samples: (1) Global Entrepreneurship Monitor datasets, and (2) clients from Small Business Development Centers. The Global Entrepreneurship Monitor dataset allowed us to examine the impact of attitudes and exogenous factors on entrepreneurial intentions (individuals who answered yes to having intentions to start a business), which does not imply these are actively conducting activities to start a business (nascent entrepreneurs). However, the lists gather from Small Business Development Centers (SBDCs) considered only nascent entrepreneurs. These lists provided us a sample to evaluate the role of exogenous factors in the transition from nascent entrepreneurship to successful entrepreneurial behavior (firm birth).

The use of existing datasets and databases also has limitations. For example, the Global Entrepreneurship Monitor dataset limited the type of analysis due to how the variables were measured (dichotomous). The main purpose for using GEM data was to examine the relationship between attitudes towards entrepreneurship and intentions. This was analyzed using inferential statistics, specifically Analysis of Variance (ANOVA) for two groups. It is recognized that although the analysis permits to examine the underlying role of different variables between groups, it does not allow establishing conclusive relationships of the variables during the entrepreneurial process, mainly due to the nature of the variables employed (dichotomous).

Another objective of the study was to examine the role of exogenous factors in the transition from intentions to behavior. Data for this analysis was collected from telephone surveys to clients from Small Business Development Centers (SBDCs), specifically those classified as nascent entrepreneurs. We selected cases (clients) classified as nascent entrepreneurs in the SBDC database. A nascent status is assigned to clients who request assistance to further develop an idea that has not yet been materialized in a business. As stated by an SBDC representative, nascent entrepreneurs are those who have no sales at the time of service request, most have no location, are looking to develop a business plan to get finance and request information on how to set up the business. Although the consultant that handles the case for the first time ask several questions in order to assign a status to the client (potential business), there is no record in terms of how far along in the venture they are (i.e. how many activities to start the business have been conducted or how much time and effort they have spend in developing the business concept). Also, the sample frames provided by the institution did not contain the dates when the nascent entrepreneurs first visited the SBDC. In this sense, although we acknowledge that some nascent entrepreneurs may be more ahead than others in the process, which may affect the final outcome (behavior), the sample frame did not contain information that will allow us to make this distinction. Based on this, it is not our intent to persuade that the results of this study can be generalized to other contexts or even be representative of all nascent entrepreneurs in Puerto Rico. Our findings are merely an attempt to understand the underlying factors in the transition from entrepreneurial intentions to firm birth, in response to the lack of empirical descriptions of this process.

Another limitation concerning the sample was size. Given that the population was strictly delimited we developed a data collection strategy to ensure as much observations as possible and did not draw a sample size from the population under study. We contacted all

nascent entrepreneurs. 944 calls were made and 106 surveys. The sample size affected our attempt to develop a model of venture creation by means of Simultaneous Equation Modeling Techniques (SEM). Good-of-fit indicators including, Comparative Fit Index (CFI), Chi-square (χ^2) and Root Mean Square Error of Approximation (RMSEA) did not suggest good fit of the models tested. Goodness-of-fit measures are highly dependent on sample size and the parameters estimated (free parameters), therefore the degrees of freedom highly influence these statistics. In this sense, when using Structural Equation Modeling it will be necessary to conduct studies that will consider larger samples. As suggested by Hair et al. (2008), approximately 5-10 sample units will be required for each estimated parameter in the model. This in turn, may be complicated when conducting studies of nascent entrepreneurs, particularly when analyzing outcome behaviors. This is due to the difficulty of obtaining large samples of individuals who have proven and manifested intentions since these are not registered.

Another limitation observed in the analysis stage was the low relationships between the observed and latent constructs when using SEM methodology. This suggests redefinition of constructs and variables. For example, instead of using personal and environmental factors as constructs, one could use specific constructs such as human capital (i.e. education, entrepreneurial experience, management experience and industry experience); social capital (i.e. formal support institutions, informal support institutions); facilitating conditions (i.e. availability of financial resources and government support institutions); among others. By using these specific constructs we will be able to increase the relation of the unobserved variables and the latent constructs. However, in this study we were not able to use these specific constructs separately due to the sample size. Analyzing these constructs separately will increase the

amount of free parameters and therefore the requirements on sample size. Also, the dependent construct (entrepreneurial behavior) requires attention when using Structural Equation Models (SEM). In our case, the dependent variable is entrepreneurial behavior. Given that entrepreneurial behavior is in essence a dichotomous variable (either you achieve the behavior or not), measuring this construct was deemed complicated. Solutions for this aspect may suggest the use of other modeling methodologies appropriate for this type of variable (i.e. logistic regression) or development of other measures of entrepreneurial outcomes.

In addition to the proposed improvements explained in the previous paragraphs, several findings also suggest opportunities for future research lines. For example, perceived opportunities seem to play a role in formulating entrepreneurial intentions as well as in the operation of entrepreneurial intentions, which suggests implications for future research. If in fact entrepreneurs are capable to construct opportunities by converting the ordinary in extraordinary and the usual in unusual (Mitton, 1989), then research should focus on how individuals perceive and convert opportunities. In this sense, cognitive theory and heuristics could provide insights into this process.

The findings also suggest that some attitudes exert influence in the formulation of intentions but not necessarily in the operation of intentions. Because of this future research should focus on how attitudes influence behavior, and the relative importance of these during the venture process: from entrepreneurial potential (intentions) to behavior (actively conducting entrepreneurship). For example, desirability perceptions may influence to more extent the

formulation of entrepreneurial intentions, while feasibility perceptions may influence more nascent entrepreneurship and successful startup.

The subjective evaluation of individuals' knowledge and skills seems to have an effect in the formulation of entrepreneurial intentions and actively conducting entrepreneurial activity. However, this evaluation is based on the individuals' own perceptions and it does not necessarily signify that the individual actually possess the required knowledge. In this sense, only time will validate the individual's perception in terms of whether he/she really had the necessary knowledge to create and manage a successful business. Following this argument, it will be crucial to conduct future research to examine how these perceptions evolve over time, as these may even redirect behavior (abandon start-up, or discontinue business). Also, an examination of the knowledge and skills should be conducted complying with Ajzen's (1991) issue of correspondence. Analyzing knowledge and skills necessary in different contexts (industry sector; stages of development; among others), will provide a more accurate measure of abilities (significant indicator of feasibility perceptions).

Human capital is positively associated to entrepreneurship. However it is still unknown whether previous exposure influences entrepreneurial activity because of knowledge acquired by the entrepreneur during previous start-ups or through attitudes. Future studies should address this issue. Also, although this study shows that education exerts a role in entrepreneurship it is important to analyze the extent and context in which education influences the entrepreneurial outcomes (type of business, success, growth orientation, among others). Once again, Ajzen's (1991) issue of correspondence will suggest analyzing knowledge and skills necessary for

different organizational characteristics (i.e. industry sector; stages of development; entry wedges, among others). The list of organizational characteristics proposed by Gartner (1985) may serve as guideline for this analysis.

The relationship of social capital and entrepreneurship has provided different interpretations. Some studies argue that networks (entrepreneurial friends or family) may impact entrepreneurship by creating positive attitudes towards the conduct. Other interpretation is that individuals who know others that started a business are more prone to start a business themselves because it impacts feasibility perceptions. Another interpretation that has been put forth concerning networks is that this can provide knowledge, resources and information to the potential entrepreneur making he/she more predisposed to entrepreneurship. Based on the above, future research should focus on analyzing how, why and to what extend social capital influences the entrepreneurial process. Also, categories of social capital may be used to examine the effects on each stage of the entrepreneurial process. For example, informal networks may be more relevant in early stages of the entrepreneurial process, while formal networks may be more relevant at later stages. Also, the role and effectiveness of each social capital variables should be examined. For example, studies that examine the benefits and resources derived from each network could provide insights into the role of social capital on venture creation.

Most individuals who indicated to have intentions to start a business were employed. This finding suggest the need of examining motivational factors (i.e. work satisfaction, growth aspirations, opportunity identification, independence) as well as environmental factors that will lead employed individuals take the steps towards the entrepreneurial career. Three questions

come to mind: *(1) If there is a significant proportion of entrepreneurial potential within existing organization, why aren't individuals exploiting opportunities in organizational settings?* (2) *Are established organizations creating an environment that fosters intrapreneurship?* (3) *What are the characteristics of organizational settings that promote intrapreneurship?*

The findings suggest that intangible recourses (human capital and social capital) may be more important in developing intentions to start a business, and that tangible resources may be more important for actual behavior. According to Bhave (1994) the first stage of the venture creation process (opportunity recognition stage) which includes decision to start, opportunity recognition and development of the business concept requires more intangible resources. The author argues that the technology set-up and organization creation stage requires more tangible resources such as money. In this sense, if individuals have resources (intangible) to complete the first stage but do not have resources for the second stage (tangible) these will not be successful in starting the venture. This may be the reason why financial capital influenced entrepreneurial behavior and not attitudes towards entrepreneurship. The theoretical implications of this finding suggest that factors exert different roles at different stages in the venture creation processes. Future research should consider the impact of these personal factors at different stages in the venture creation process.

Availability of workers, availability of suppliers and financial resources were positively related to entrepreneurial behavior. Entrepreneurial networks and support institutions showed negative relations with entrepreneurial behavior. Similar to the previous discussion on personal factors, these findings suggest the role of tangible resources on entrepreneurial behavior,

particularly since workers, suppliers and financial resources are more tangible than the benefits that could be extracted from entrepreneurial networks and support institutions. In this sense, future research should focus on evaluating the role of each environmental factor at different stages of the venture creation process.

Overall, this study was an attempt to provide a glimpse into entrepreneurial behavior in a specific context, Puerto Rico. Evidence of the role of human capital, social capital, financial capital, facilitating and inhibiting conditions and displacements events was examined. As suggested by literature on entrepreneurial intentions, these appear to exert great influence on attitudes towards entrepreneurship. However, the impact of these factors on behavior was less consistent suggesting that there is much more involved in the process that leads to successful entrepreneurial behavior. A closer look at the entrepreneurial opportunity may provide insights into why intentional individuals did not succeeded at starting the intended business. Our study did not consider characteristics of the opportunity, which impacts successful startup. Also, more comprehensive examinations of the process should be conducted. Qualitative studies may be appropriate at this stage in order to explore the underlying factors that help translate entrepreneurial intentions into start-ups. Also, panel studies that examine the process overtime - from entrepreneurial potential to firm birth – could provide a wholesome look into the factors at play in entrepreneurship, consequently the blueprint for economic and regional development.

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8. APPENDICES

Appendix 1: Description of Variables Global Entrepreneurship Monitor		
Prevalence Rates		
Nascent Entrepreneurship	Actively involved in setting up a business that will own or co-own; business has not paid salaries, wages or any other payments to owners for more than 3 months.	Yes = 1 No = 0
New Business Ownership	Owner-manager of a new business that has paid salaries, wages, or any other payments to the owners for more than three months, but less than 42 months	Yes = 1 No = 0
Established Business Ownership	Owner-manager of a business that has paid salaries, wages, or any other payments to owner for more than 42 months.	Yes = 1 No = 0
Total Early Stage Entrepreneurial Activity	Individuals who are either a nascent entrepreneur or owner-manager of a new business.	Yes = 1 No = 0
Attitudes - Desirability Perceptions		
Perceived opportunities	Individuals from the adult population who perceive good opportunities for starting a business in next 6 months from time of interview.	Yes = 1 No = 0
Entrepreneurial career attractiveness	Individuals from the adult population that acknowledge starting a business is considered a good career choice in the region.	Yes = 1 No = 0

Appendix 1: Description of Variables, Continued		
Entrepreneurial career status	Individuals from the adult population that consider that persons growing a successful new business receive high status.	Yes = 1 No = 0
Entrepreneurial awareness and recognition	Individuals from the adult population that consider that new businesses receive a lot of media coverage.	Yes = 1 No = 0
Attitudes - Feasibility Perceptions		
Perceived capabilities	Individuals from the adult population that consider to have the required knowledge and skills to start a business	Yes = 1 No = 0
Exogenous Factors - Social capital		
Entrepreneurial friends	Individuals from the adult population that personally know a person who started a business	Yes = 1 No = 0
Marital status	Individuals from the adult population who are married at the time of interview	Yes = 1 No = 0
Exogenous Factors - Human capital		
Prior exposure	Individuals from the adult population that shut down a business	Yes = 1 No = 0
Education	Individuals from the adult population who possess university studies.	Yes = 1 No = 0

Appendix 1: Description of Variables, Continued		
Exogenous Factors - Other characteristics		
Employment status	Individuals from the adult population who working either part-time or full-time at the time of the interview.	Yes = 1 No = 0
Age	Age of the respondent at the time of the interview	Numeric 18-64
Entrepreneurial Potential		
Entrepreneurial intentions	Individuals from the adult population who intend to start a business within 3 years	Yes = 1 No = 2

Appendix 2

The venture creation process in Puerto Rico: From Entrepreneurial Potential to Firm Birth

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Purpose and Confidentiality

The purpose of the study is to analyze factors conducing entrepreneurial behavior in Puerto Rico. All responses will be use to generate knowledge in order to promote a positive environment towards entrepreneurship. Responses are confidential and will be presented in an aggregated manner, so neither individuals nor enterprises could be related with their responses in any manner. Your participation is voluntary and without penalties. Throughout the study, you can decide to discontinue participation. If any doubts or questions concerning this study, you can contact Prof. Alizabeth Sánchez López at (787) 586-5185.

According to Caguas Municipality archives you requested services of an SBDC (Small Business and Development Center) in 2007-2010 to start a business (name of business) in (business activity). The following questions are related to your perception on the process.

We appreciate you collaboration in this study!

VENTURE CREATION PROCESS IN PUERTO RICO

Survey #: _____ Data collector name: _____

Note to Interviewer: Instruct individuals that questions in this section relate to knowing perceptions Turing the start-up process. It will be necessary to think back on the process. You can instruct individuals to think back when they visited SBTDC for the first time (Small Business Technology and Development Center).

1. **ATTITUDES AND INTENTIONS** – The following question relate to your feelings/perception during the start-up process. Please indicate your level of agreement with the following statements.

PD1 In a scale from 1 to 7 how much did you enjoy (love) doing the tasks and activities to start the business.

Love doing it Hate doing it

□ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1

(Don't Read) → [_____Don't know…….(998)
[_____Refuses…….(999)

PD2 In a scale from 1 to 7 how tense did you feel when conducting activities towards starting the business?

Very tense Not tense at all

□ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1

(Don't Read) → [_____Don't know…….(998)
[_____Refuses…….(999)

PD3 In a scale from 1 to 7 how enthusiastic were you when conducting activities towards starting the.

Very enthusiastic Very unenthusiastic

□ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1

(Don't Read) → [_____Don't know…….(998)
[_____Refuses…….(999)

PD4 In a scale from 1 to 7 how were you when conducting activities towards starting the business.

Very Satisfied Very unsatisfied

□ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1

(Don't Read) → [_____Don't know…….(998)
[_____Refuses…….(999)

PD5 In a scale from 1 to 7 how attractive (desirable) was the start-up process.

Very desirable/attractive Very undesirable/unattractive

□ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1

(Don't Read) → [_____Don't know…….(998)
[_____Refuses…….(999)

PF1 In a scale from 1 to 7 how difficult or easy did you consider tasks for starting the business.

Very easy — Very difficult

□ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1

(Don't Read) → [_____Don't know…….(998)
[_____Refuses…….(999)

PF2 In a scale from 1 to 7 how sure were you of succeeding at venture creation (starting the business):

Very certain of success — Very uncertain of success

□ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1

(Don't Read) → [_____Don't know…….(998)
[_____Refuses…….(999)

PF3 In a scale from 1 to 7 how overworked you felt during the process of starting the business

Extremely overworked — Not overworked at all

□ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1

(Don't Read) → [_____Don't know…….(998)
[_____Refuses…….(999)

PF4 In a scale from 1 to 7 how did you value your knowledge and skills to conduct the tasks required to start-up.

Possess all knowledge and skills — Possess none of the knowledge and skills

□ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1

(Don't Read) → [_____Don't know…….(998)
[_____Refuses…….(999)

PF5 In a scale from 1 to 7 how sure did you feel of yourself and your capabilities to start the business.

Very sure of myself — Very unsure of myself

□ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1

(Don't Read) → [_____Don't know…….(998)
[_____Refuses…….(999)

PF6 In a scale from 1 to 7 indicate how feasible (practical) was the start up process for you.

Very feasible (practical — Very unfeasible (unpractical)

□ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1

(Don't Read) → [_____Don't know…….(998)
[_____Refuses…….(999)

GA1 In a scale from 1 to 7 in general what was your attitude towards venture creation.

Extremely positive — Extremely negative

□ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1

(Don't Read) → [_____Don't know…….(998)
[_____Refuses…….(999)

EF1 On a scale from 1 al 7 indicate to what extent did the amount of hours devoted to activities to start the business influenced the start-up.

Greatly influenced Did not influenced at all

□ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1

(Don't Read) → [_____Don't know…….(998)
[_____Refuses…….(999)

PrS1 Indicate the likelihood of starting when you were conducting activities towards creating the business.

Extremely likely to start Extremely unlikely to start

□ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1

(Don't Read) → [_____Don't know…….(998)
[_____Refuses…….(999)

Cm1 On a scale of 1 to 7 indicate how committed were you with starting the business.

Completely committed Not Committed at all

□ 7 □ 6 □ 5 □ 4 □ 3 □ 2 □ 1

(Don't Read) → [_____Don't know…….(998)
[_____Refuses…….(999)

INT1 Select in order from the highest (1) to the lowest (3) the level of influence of your effort, likelihood of starting, and commitment had on start-up:

_____ Effort

_____ Perceived likelihood of starting

_____ Commitment **FACILITATORS AND INHIBITORS –** Please indicate if the following conditions facilitated or inhibited the venture creation process.

	Facilitates						**Inhibits**	**Don't Know**	**Refuse**
F1 Does the existence of skilled labor facilitates or inhibits start-up of your business.	7	6	5	4	3	2	1	998	999
F2 Does accessibility of suppliers facilitates or inhibits start-up of your business.	7	6	5	4	3	2	1	998	999
F2 Does entrepreneurial support organizations facilitate or inhibit start-up of your business.	7	6	5	4	3	2	1	998	999
F4 Does the existence of financial resources facilitate or inhibit start-up of your business.	7	6	5	4	3	2	1	998	999

F5 Does entrepreneurial networks facilitate or inhibit start-up of your business.	7	6	5	4	3	2	1	998	999
F6 Does entrepreneurial training programs facilitate or inhibit start-up of your business.	7	6	5	4	3	2	1	998	999
F7 Do business advisors and consultants facilitate or inhibit start-up of your business.	7	6	5	4	3	2	1	998	999
F8 Does accessibility of customers facilitates or inhibits start-up of your business.	7	6	5	4	3	2	1	998	999
I1 Do registration and licensing procedures facilitate or inhibit start-up of your business.	7	6	5	4	3	2	1	998	999
I2 Do tax policies and burdens facilitate or inhibit start-up of your business.	7	6	5	4	3	2	1	998	999
I3 Do governmental institutions individuals must comply with facilitate or inhibit start-up of your business.	7	6	5	4	3	2	1	998	999
I4 Do rules and norms that regulate business activities facilitate or inhibit start-up of your business.	7	6	5	4	3	2	1	998	999

I5 Select in order from the highest (1) to the lowest (4) the level of importance of having registration and licensing procedures, tax policies and burdens, governmental institutions individuals must comply, rules and norms that regulate business on your start-up

_____ Tax Policies

_____ Registration and licensing procedures

_____ Rules and norms that regulate your business

_____ Governmental Institutions to comply with

I12 Select in order from the highest (1) to the lowest (8) the level of importance of having existence of skilled labor, accessibility of suppliers, accessibility of customers, entrepreneurial support organizations, existence of financial resources, entrepreneurial networks, entrepreneurial training programs, business advisors and consultants on your start-up.

_____ Existence of skilled labor

_____ Accessibility of suppliers

_____ Entrepreneurial support organizations

_____Existence of financial resources

_____Existence of entrepreneurial networks

_____ Entrepreneurial training programs

_____ Business advisors and consultants

_____ Accessibility to customers

2. **SOCIAL CAPITAL-** On a scale form 1 (did not influenced at all) to 7 (greatly influenced), please indicate the amount of influence of the following conditions during the venture creation process.

	Greatly influenced						**Did not influenced at all**	**Don't know**	**Refuses**
SC1 On a scale from 1 to 7 to what extent spouse/significant other influenced the start-up	7	6	5	4	3	2	1	998	999
SC2 To what extent having parents that started and owned a business influenced the start up	7	6	5	4	3	2	1	998	999
SC3 To what extent having siblings (excluding parents) that started and owned a business influenced the start up	7	6	5	4	3	2	1	998	999
SC4 To what extent having friends and other significant individuals that started and owned a business influenced the start up	7	6	5	4	3	2	1	998	999
SC5 To what extent did contact with other entrepreneurial support organizations influence start-up	7	6	5	4	3	2	1	998	999
SC6 To what extent does being a member of a business/entrepreneurial network (association) influence start-up	7	6	5	4	3	2	1	998	999
SC7 To what extent contact with any financial institutions influence start-up	7	6	5	4	3	2	1	998	999
SC8 To what extent shared ownership influence start-up	7	6	5	4	3	2	1	998	999
SC9 Indicate to what extent the entrepreneurial team (group of individuals working together to start the venture) influence start-up	7	6	5	4	3	2	1	998	999

SC10 Select in order from the highest (1) to the lowest (8) the level of importance of having spouse (significant other), parents, siblings, friends, entrepreneurial networks, entrepreneurial team and shared ownership, supporting organizations and contact with financial institutions in the start-up process.

_____ Spouse (significant other)

_____ Parents

_____Siblings (excluding parents)

_____ Friends

_____ Entrepreneurial Networks

_____ Entrepreneurial Team

_____ Supporting organizations

_____ Financial Institutions

3. **HUMAN CAPITAL-** Indicate your level of agreement with the following statements.

	Totally Agree						**Totally Disagree**	**Don't know**	**Refuses**
HCi1 When I started conducting activities to start-up I had a great deal of experience in the industry sector of the start-up.	7	6	5	4	3	2	1	998	999
HCi2 The knowledge and skills required for the start-up are the same as those I employed in previous employment	7	6	5	4	3	2	1	998	999
HCi3 Competitors, clients and suppliers for this start-up are similar to those I had experience with in previous employment	7	6	5	4	3	2	1	998	999
HCe1 When I started conducting activities to start-up I had significant experience owning and managing my own business	7	6	5	4	3	2	1	998	999
HCsme1 When I started conducting activities to start-up I had significant experience managing small businesses.	7	6	5	4	3	2	1	998	999
HCm1 When I started conducting activities to start-up I had a significant amount of experience owning and managing a business that was not my own	7	6	5	4	3	2	1	998	999
HCedu1 When I started conducting activities to start-up I had taken course on business and entrepreneurship	7	6	5	4	3	2	1	998	999

4. **HUMAN CAPITAL-** On a scale form 1 (did not influenced at all) to 7 (greatly influenced), please indicate the amount of influence of the following experiences during the venture creation process.

	Greatly influenced						**Did not influenced at all**	**Don't know**	**Refuses**
HCi4 To what extent did previous experience in industry sector of start-up influenced the status of your venture	7	6	5	4	3	2	1	998	999
HCe2 To what extent did previous experience owning and managing a business you previously started influenced the status of your venture	7	6	5	4	3	2	1	998	999
HCsme2 To what extent did experience managing small businesses influenced the status of your venture	7	6	5	4	3	2	1	998	999
HCm2 To what extent does experience in managing a business that is not your own influenced the status of your venture	7	6	5	4	3	2	1	998	999
HCedu2 To what extent does taking entrepreneurial and business courses	7	6	5	4	3	2	1	998	999

influenced the status of your venture.									

HC1 Please indicate the order of importance of the following on the venture, being 1 the most important factor and 4 the least important.

_____ Industry Experience

_____ Entrepreneurial Experience

_____ Management Experience

_____ Entrepreneurial Education

5. **FINANCIAL CAPITAL –** On a scale from 1 to 7 indicate your level of agreement with the following statements related to financial conditions.

	Totally Agree						**Totally Disagree**	**Don't know**	**Refuses**
FC1 Financing the venture from personal savings greatly influenced the start up	7	6	5	4	3	2	1	998	999
FC2 Financing the venture from family greatly influenced the start up.	7	6	5	4	3	2	1	998	999
FC3 Financing the venture from friends greatly influenced the start up	7	6	5	4	3	2	1	998	999
FC4 Financing the venture from bank credits greatly influenced the start up	7	6	5	4	3	2	1	998	999
FC5 Financing the venture from personal credit cards greatly influenced the start up	7	6	5	4	3	2	1	998	999
FC6 Financing the venture from credit from customers and suppliers greatly influenced the start up	7	6	5	4	3	2	1	998	999
FC7 The amount of initial capital required to start the venture greatly influenced the status of the entrepreneurial initiative.	7	6	5	4	3	2	1	998	999
FC8 The amount of household annual income significantly influenced the status of the entrepreneurial initiative.	7	6	5	4	3	2	1	998	999

FC7 Select in order from the highest (1) to the lowest (6) the level of influence of personal savings, family, friends, bank credit, personal credit cards, and credit from customers & suppliers had on financing the venture for start-up.

_____ Personal Savings _____ Bank Credits

_____ Money from Family _____ Personal credit cards

_____ Money from Friends _____Credit from customers/suppliers

FC8 Please indicate an estimate of the amount of initial capital required to start the venture.

_____Less than $5,000……(1)
_____$5,000 to $9,999…….,,,,(2)
_____$10,000 to $14,999……(3)
_____$15,000 to $19,999……(4)
_____$20,000 to $24,999……(5)
_____$25,000 to $29,999……(6)
_____$30,000 to $34,999……(7)
_____$35,000 to $39,999……(8)
_____$40,000 to $44,999……(9)
_____$45,000 to 49,999……(10)
_____More than 50,000……(11)
(Don't Read) → [_____Don't Know……. (998)
[_____Refuses…….(999)

FC9 I'm going to read you some household income ranges, please indicate in which range did the annual household income fell into when you started conducting activities to start the business.

_____Less than $10,000……..……(1)
_____$10,000 to $14,999……(2)
_____$15,000 to $24,999……(3)
_____$25,000 to $34,999……(4)
_____$35,000 to $49,999……(5)
_____$50,000 to $74,999……(6)
_____$75,000 to $99,999……(7)
_____$100,000 to $149,999……(8)
_____$150,000 to $199,999……(9)
_____$200,000 or more……(10)
(Don't Read) → [_____Don't Know……. (998)
[_____Refuses…….(999)

6. **DISPLACEMENT EVENTS –**I'm going to read you a series of personal events that have been associated to the decision to start a business. On a scale form 1 (did not influenced at all) to 7 (greatly influenced), please indicate the influence of these on your decision to start.

	Greatly Influenced						**Did not Influenced at all**	**Don't know**	**Refuse**
DE1 Indicate to what extent did job frustration influenced your decision to start-up	7	6	5	4	3	2	1	998	999
DE2 To what extent did losing employment influenced your decision to start-up	7	6	5	4	3	2	1	998	999
DE3 To what extent did death of a family	7	6	5	4	3	2	1	998	999

member influenced your decision to start-up									
DE4 To what extent did having a child influenced your decision to start-up	7	6	5	4	3	2	1	998	999
DE5 To what extent did getting a divorce or separation from significant other influenced your decision to start-up	7	6	5	4	3	2	1	998	999
DE6 To what extent did getting married influenced your decision to start-up.	7	6	5	4	3	2	1	998	999
DE7 To what extent does graduating or obtaining a degree influenced your decision to start-up	7	6	5	4	3	2	1	998	999

DE8 Select in order from the highest (1) to the lowest (7) the level of influence of the following personal events on your decision to start.

_____ Obtaining Degree
_____ Getting Married
_____ Getting Divorced
_____ Having a Child
_____ Death of Family Member
_____ Losing Employment
_____ Job Frustration

7. **BEHAVIOR-** I'm going to ask you some questions about the outcome of your entrepreneurial initiative. Please indicate your level of agreement with the following statements.

	Totally Agree						**Totally Disagree**	**Don't know**	**Refuses**
BS1 I was able to start the business that has its own resources and identity.	7	6	5	4	3	2	1	998	999
BW1 I continue conducting activities to start the business that has its own resources and identity.	7	6	5	4	3	2	1	998	999
BA1 I abandoned efforts to start the business and expect no further efforts	7	6	5	4	3	2	1	998	999

B1 Please indicate which of the following better describes the status of the start-up effort.

(**Note to interviewer:** Select just one)

_____ Started a Business that generated sales: **Year**: _____ (**Note to interviewer:** Go to question **BS2** and continue) …….....……(3)

_____ Continue activities to start this business but have no sales yet (**Note to interviewer:** Go to question **BW2** and continue)……...……..…(2)

_____ Discontinued activities to start this business prior making any sales: **Year:** _____

(**Note to interviewers:** Go to question **BA2** and continue) ……(1)

	Made good faith efforts					**Did not make good faith effort**		**Don't know**	**Refuse**
BS2 Please indicate the good faith effort you made in starting this business	7	6	5	4	3	2	1	998	999
BW2 Please indicate the good faith effort made in trying to start this business.	7	6	5	4	3	2	1	998	999
BA2 Please indicate the good faith effort made in trying before abandoning the start-up initiative	7	6	5	4	3	2	1	998	999

8. ABOUT THE ENTREPRENEUR AND THE ENTERPRISE- To finalize I'm going to ask you some questions about you and the firm.

A1 I'm going to read you some age ranges, can you please tell me in which of the categories does your age falls into.

_____Less than 21 years old.……....(1)
_____Between 21 and 30 years old.……(2)
_____Between 31 and 40 years old.……(3)
_____Between 41 and 50 years old.……(4)
_____More than 50 years old.……..(5)

Note to interviewer: If respondent answered 2 (still working in start-up) in question B1, thanks participation, ask for willingness to participate in other study and finish interview. If respondent answer 3 (started the business) in question B1 go to the next question CurrS1. If respondent answered 1 (abandoned start-up effort) in question B1 go to question CurrS2.

CurrS1 Currently, are you still involved as owner of this business?

_____ Yes……(1) **Note to Interviewer:** Continue to next question (Em1).

[_____ No……...(0) Why? _____

Note to Interviewer: If participant responds No (0) in the previous question (CurrS1) thank respondent for participating in the study, ask for willingness to participate in further studies and finish interview.

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Em1 Can you please indicate how many employees work in the business, full time and part time?

_____Full time: **Aprox.**_____……..……..(1)
_____Part time: **Aprox.** _____...……(2)

AS1 Can you please tell me an estimate of annual sales for your business, currently?

_____Less than $60,000……....(1)
_____$61,000 to $100,000……(2)
_____$101,000 to $200,000……..(3)
_____$201,000 to $500,000……..(4)
_____$501,000 to $1,000,000……...(5)
_____More than $1,000,000…….(6)

(Don't Read) → [_____Don't Know…… (998)
[_____Refuses…….(999)

Note to interviewer: Thanks respondent for participating in the study, ask for willingness to participate in further studies and finish interview.

CurrS2 If respondent answer 1 (abandon start-up efforts) in question B1: Could you please tell me briefly why you decided to abandon the start-up efforts?

_____

_____

Note to interviewer: Thanks respondent for participating in the study, ask for willingness to participate in further studies and finish interview.

TO BE COMPLETED BY INTERVIEWER

S1 Gender.
_____ Male……....(1)
_____ Female……(2)

IS1 Industry Sector. **In SBTDC archives.**
_____Retail……..(1)
_____Wholesale……..…(2)
_____Manufacturing……...…….....(3)
_____Services……..(4)
_____Agriculture…….....(5)
_____Transportation……(6)
_____Construction……...(7)
_____Other……..(8)

FR1: Willing to be contacted for further studies:
_____ Yes……..…...(1)
_____ No……(2)

Appendix 3

The Venture Creation Process in Puerto Rico: From Entrepreneurial Potential to Firm Birth

Variable List

Variable	Position	Label
#SURVEY	1	NUMERO CUESTIONARIO
PD1	2	PD1. DESIRABILITY PERCEPTION 1 LOVED IT
PD2	3	PD2. DESIRABILITY PERCEPTION 2 TENSE
PD3	4	PD3. DESIRABILITY PERCEPTION 3 ENTHUSIASTIC
PD4	5	PD4. DESIRABILITY PERCEPTION 4 SATISFACTORY
PD5	6	PD5. DESIRABILITY PERCEPTION 5 DESIRABLE/ATRACTIVE
PD_score	7	PD_score. DESIRABILITY PERCEPTION = Average(PD1:PD5)
PF1	8	PF1. FEASIBILITY PERCEPTION 1 DIFFICULT
PF2	9	PF2. FEASIBILITY PERCEPTION2 SECURE SUCCESS
PF3	10	PF3. FEASIBILITY PERCEPTION 3 OVERWORKED
PF4	11	PF4. FEASIBILITY PERCEPTION 4 KNOWLEDGE AND SKILLS
PF5	12	PF5. FEASIBILITY PERCEPTION 5 SECURE OF CAPABILITY
PF6	13	PF6. FEASIBILITY PERCEPTION 6 FEASIBLE/PRACTICAL
PF_score	14	PF_score. FEASIBILITY PERCEPTION = Average(PF1:PF6)
GA1	15	GA1. GENERAL ATTITUDE
GA1_score	16	GA1_score. GENERAL ATTITUDE = GA1
ATT_score_avg	17	ATT_score_avg. ATTITUDE = (PD_score*5 + PF_score*6 + GA1_score)/12
EF1	18	EF1. INTENTION/EFFORT
EF1_score	19	EF1_score. INTENTION/EFFORT = (EF1 x INT1EF1)
PrS1	20	PrS1. INTENTION/PROBABILITY TO START
PrS1_score	21	PrS1_score. INTENTION/PROBABILITY TO START = (PrS1 x INT1PrS1)
Cm1	22	Cm1. INTENTION/COMMITTMENT
Cm1_score	23	Cm1_score. INTENTION/COMMITTMENT = (Cm1 x INT1Cm1)
INTENT_score_avg	24	INTENT_score_avg. INTENTION/COMMITTMENT = Average(Ef1_score+PrS1_score+Cm1_score)

INT1EF1	25	INT1EF1. INTENTION IMPORTANCE LEVEL EFFORT
INT1PrS1	26	INT1PrS1. INTENTION IMPORTANCE LEVEL PROBABILITY TO START
INT1Cm1	27	INT1Cm1. INTENTION IMPORTANCE LEVEL COMMITTMENT
F1	28	F1. FACILITATOR 1 WORKERS
F2	29	F2. FACILITATOR 2 SUPPLIERS
F3	30	F3. FACILITATOR 3 SUPPORT INSTITUTIONS
F4	31	F4. FACILITATOR 4 FINANCIAL RESOURCES
F5	32	F5. FACILITATOR 5 ENTREPRENEURIAL NETWORKS
F6	33	F6. FACILITATOR 6 ENTREPRENEURIAL TRAINING
F7	34	F7. FACILITATOR 7 CONSULTANTS
F8	35	F8. FACILITATOR 8 CLIENTS
F1_score	36	F1_score. FACILITATOR 1 WORKERS = (F1 x I12F1)
F2_score	37	F2_score. FACILITATOR 2 SUPPLIERS = (F2 x I12F2)
F3_score	38	F3_score. FACILITATOR 3 SUPPORT INSTITUTIONS = F3 x I12F3)
F4_score	39	F4_score. FACILITATOR 4 FINANCIAL RESOURCES = (F4 x I12F4)
F5_score	40	F5_score. FACILITATOR 5 ENTREPRENEURIAL NETWORKS = (F5 x I12F5)
F6_score	41	F6_score. FACILITATOR 6 ENTREPRENEURIAL TRAINING = (F6 x I12F6)
F7_score	42	F7_score. FACILITATOR 7 CONSULTANTS = (F7 x I12F7)
F8_score	43	F8_score. FACILITATOR 8 CLIENTS = (F8 x I12F8)
F_score_avg	44	F_score_avg. FACILITATOR = Average(F1_score:F8_score)
I1	45	I1. INHIBITOR 1 TAXES
I2	46	I2. INHIBITOR 2 LICENSES AND REGISTRATION
I3	47	I3. INHIBITOR 3 RULES
I4	48	I4. INHIBITOR 4 GOVERNMENTAL INSTITUTIONS
I1_score	49	I1_score. INHIBITOR 1 TAXES = (I1 x I5I1)
I2_score	50	I2_score. INHIBITOR 2 LICENSES AND REGISTRATION = (I2 x I5I2)
I3_score	51	I3_score. INHIBITOR 3 RULES = (I3 x I5I3)
I4_score	52	I4_score. INHIBITOR 4 GOVERNMENTAL INSTITUTIONS = (I4 x I5I4)
I_score_avg	53	I_score_avg. INHIBITOR = Average(I1_score:I4_score)
I5I1	54	I5I1. INHIBITOR IMPORTANCE LEVEL TAXES

I5I2	55	I5I2. INHIBITOR IMPORTANCE LEVEL LICENSES AND REGISTRATION
I5I4	56	I5I4. INHIBITOR IMPORTANCE LEVEL RULES
I5I3	57	I5I3. INHIBITOR IMPORTANCE GOVERNMENTAL INSTITUTIONS
I12F1	58	I12F1. FACILITATOR IMPORTANCE LEVEL WORKERS
I12F2	59	I12F2. FACILITATOR IMPORTANCE LEVEL SUPPLIERS
I12F3	60	I12F3. FACILITATOR IMPORTANCE LEVEL SUPPORT INSTITUTIONS
I12F4	61	I12F4. FACILITATOR IMPORTANCE LEVEL FINANCIAL RESOURCES
I12F5	62	I12F5. FACILITATOR IMPORTANCE LEVEL ENTREPRENEURIAL NETWORKS
I12F6	63	I12F6. FACILITATOR IMPORTANCE LEVEL ENTREPRENEURIAL TRAINING
I12F7	64	I12F7. FACILITATOR IMPORTANCE LEVEL QUALIFIED CONSULTANTS
I12F8	65	I12F8. FACILITATOR IMPORTANCE LEVEL ACCESIBLE CLIENTS
SC1	66	SC1. SOCIAL CAPITAL 1 HUSBAND/WIFE/SIGNIFICANT OTHER
SC2	67	SC2. SOCIAL CAPITAL 2 PARENTS
SC3	68	SC3. SOCIAL CAPITAL 3 FAMILY
SC4	69	SC4. SOCIAL CAPITAL 4 FRIENDS
SC5	70	SC5. SOCIAL CAPITAL 5 SUPPORT INSTITUTIONS
SC6	71	SC6. SOCIAL CAPITAL 6 ENTREPRENEURIAL NETWORK
SC7	72	SC7. SOCIAL CAPITAL 7 FINANCIAL INSTITUTION
SC8	73	SC8. SOCIAL CAPITAL 8 MORE THAN 1 OWNER
SC9	74	SC9. SOCIAL CAPITAL 9 ENTREPRENEURIAL TEAM
SC1_score	75	SC1_score. SOCIAL CAPITAL 1 HUSBAND/WIFE/SIGNIFICANT OTHER = (SC1 x SC10SC1)
SC2_score	76	SC2_score. SOCIAL CAPITAL 2 PARENTS = (SC2 x SC10SC2)
SC3_score	77	SC3_score. SOCIAL CAPITAL 3 FAMILY = (SC3 x SC10SC3)
SC4_score	78	SC4_score. SOCIAL CAPITAL 4 FRIENDS = (SC4 x SC10SC4)
SC5_score	79	SC5_score. SOCIAL CAPITAL 5 SUPPORT INSTITUTIONS = (SC5 x SC10SC5)

SC6_score	80	SC6_score. SOCIAL CAPITAL 6 ENTREPRENEURIAL NETWORK = (SC6 x SC10SC6)
SC7_score	81	SC7_score. SOCIAL CAPITAL 7 FINANCIAL INSTITUTION = (SC7 x SC10SC7)
SC8_score	82	SC8_score. SOCIAL CAPITAL 8 MORE THAN 1 OWNER = (SC8 x SC10SC8)
SC9_score	83	SC9_score. SOCIAL CAPITAL 9 ENTREPRENEURIAL TEAM = (SC9 x SC10SC9)
SC_score_avg	84	SC_score_avg. SOCIAL CAPITAL = Average(SC1_score:SC9_score)
SC10SC1	85	SC10SC1. SOCIAL CAPITAL IMPORTANCE LEVEL HUSBAND/WIFE/SIGNIFICANT OTHER
SC10SC2	86	SC10SC2. SOCIAL CAPITAL IMPORTANCE LEVEL PARENTS
SC10SC3	87	SC10SC3. SOCIAL CAPITAL IMPORTANCE LEVEL FAMILY
SC10SC4	88	SC10SC4. SOCIAL CAPITAL IMPORTANCE LEVEL FRIENDS
SC10SC6	89	SC10SC6. SOCIAL CAPITAL IMPORTANCE LEVEL ENTREPRENEURIAL NETWORKS
SC10SC9	90	SC10SC9. SOCIAL CAPITAL IMPORTANCE LEVEL ENTREPRENEURIAL TEAM
SC10SC5	91	SC10SC5. SOCIAL CAPITAL IMPORTANCE LEVEL SUPPORT INSTITUTIONS
SC10SC7	92	SC10SC7. SOCIAL CAPITAL IMPORTANCE LEVEL FINANCIAL INSTITUTIONS
HCi1	93	HCi1. HUMAN CAPITAL INDUSTRY 1 EXPERIENCE INDUSTY SECTOR
HCi2	94	HCi2. HUMAN CAPITAL INDUSTRY 2 SIMILAR KNOWLEDGE PREVIOUS JOBS
HCi3	95	HCi3. HUMAN CAPITAL INDUSTRY 3 SIMILAR COMPETITORS, CLIENTS AND SUPPLIERS
HCe1	96	HCe1. HUMAN CAPITAL ENTREPERNEURIAL EXPERIENCE 1 PREVIOUS OWN BUSINESS
HCsme1	97	HCsme1. HUMAN CAPITAL SME EXPERIENCE 1 MANAGING SME
HCm1	98	HCm1. HUMAN CAPITAL MANAGEMENT EXPERIENCE 1 MANAGEMENT EXPERIENCE

HCedu1	99	HCedu1. HUMAN CAPITAL EDUCATION 1 TAKEN ENTREPRENEURIAL COURSES
HCi4	100	HCi4. HUMAN CAPITAL INDUSTRY 4 AMOUNT OF INFLUENCE
HCe2	101	HCe2. HUMAN CAPITAL ENTREPRENEURIAL EXPERIENCE 2 AMOUNT OF INFLUENCE
HCsme2	102	HCsme2. HUMAN CAPTIAL SME EXPERIENCE 2 AMOUNT OF INFLUENCE
HCm2	103	HCm2. HUMAN CAPTIAL MANAGEMENT EXPERIENCE 2 AMOUNT OF INFLUENCE
HCedu2	104	HCedu2. HUMAN CAPITAL EDUCATION 2 AMOUNT OF INFLUENCE
HCi_score	105	HCi_score. HUMAN CAPITAL INDUSTRY EXPERIENCE = Average(HCi1:HCi3) x HC1HCi4
HCe_score	106	HCe_score. HUMAN CAPITAL ENTREPERNEURIAL EXPERIENCE = Average(HCe1+HCsme1+HCsme2) x HC1HCe2
HCm_score	107	HCm_score. HUMAN CAPTIAL MANAGEMENT EXPERIENCE = Average(HCm1+HCm2) x HC1HCm2
HCedu_score	108	HCedu_score. HUMAN CAPITAL EDUCATION = Average(HCedu1+HCedu2) x HC1HCedu2
HC_score_avg	109	HC_score_avg. HUMAN CAPITAL = Average(HCi_score+HCe_score+HCm_score+HCedu_score)
HC1HCi4	110	HC1HCi4. HUMAN CAPITAL IMPORTANCE LEVEL INDUSTRY EXPERIENCE
HC1HCe2	111	HC1HCe2. HUMAN CAPITAL IMPORTANCE LEVEL ENTREPRENEURIAL EXPERIENCE
HC1HCm2	112	HC1HCm2. HUMAN CAPITAL IMPORTANCE LEVEL MANAGEMENT EXPERIENCE
HC1HCedu2	113	HC1HCedu2. HUMAN CAPITAL IMPORTANCE LEVEL ENTREPRENEURIAL EDUCATION
FC1	114	FC1. FINANCIAL CAPITAL 1 PERSONAL SAVINGS
FC2	115	FC2. FINANCIAL CAPITAL 2 FAMILY MONEY
FC3	116	FC3. FINANCIAL CAPITAL 3 FRIENDS MONEY
FC4	117	FC4. FINANCIAL CAPITAL 4 BANK CREDITS
FC5	118	FC5. FINANCIAL CAPITAL 5 PERSONAL CREDIT (CREDIT CARDS)
FC6	119	FC6. FINANCIAL CAPITAL 6 SUPPLIER OR CLIENT CREDITS

FC7	120	FC7. FINANCIAL CAPITAL 7 INITIAL CAPITAL
FC8	121	FC8. FINANCIAL CAPITAL 8 HOUSEHOLD INCOME
FC1_score	122	FC1_score. FINANCIAL CAPITAL 1 PERSONAL SAVINGS = (FC1 x FC7FC1)
FC2_score	123	FC2_score. FINANCIAL CAPITAL 2 FAMILY MONEY = (FC2 x FC7FC2)
FC3_score	124	FC3_score. FINANCIAL CAPITAL 3 FRIENDS MONEY = (FC3 x FC7FC3)
FC4_score	125	FC4_score. FINANCIAL CAPITAL 4 BANK CREDITS = (FC4 x FC7FC4)
FC5_score	126	FC5_score. FINANCIAL CAPITAL 5 PERSONAL CREDIT (CREDIT CARDS) = (FC5 x FC7FC5)
FC6_score	127	FC6_score. FINANCIAL CAPITAL 6 SUPPLIER OR CLIENT CREDITS = (FC6 x FC7FC6)
FC_score_avg	128	FC_score_avg. FINANCIAL CAPITAL = Average(FC1_score:FC6_score)
FCINCAP_score	129	FCINCAP_score. FINANCIAL CAPITAL INITIAL = FC7
FCOTHCAP_score	130	FCOTHCAP_score. FINANCIAL CAPITAL OTHER = FC8
FC7FC1	131	FC7FC1. FINANCIAL CAPITAL IMPORTANCE LEVEL PERSONAL SAVINGS
FC7FC2	132	FC7FC2. FINANCIAL CAPITAL IMPORTANCE LEVEL FAMILY MONEY
FC7FC3	133	FC7FC3. FINANCIAL CAPITAL IMPORTANCE LEVEL FRIENDS MONEY
FC7FC4	134	FC7FC4. FINANCIAL CAPITAL IMPORTANCE LEVEL BANK CREDITS
FC7FC5	135	FC7FC5. FINANCIAL CAPITAL IMPORTANCE LEVEL PERSONAL CREDIT (CREDIT CARDS)
FC7FC6	136	FC7FC6. FINANCIAL CAPITAL IMPORTANCE LEVEL SUPPLIER OR CLIENT CREDITS
FC8INCAPRANGE	137	FC8INCAPRANGE. FINANCIAL CAPITAL 8 INITIAL CAPITAL
OTHERFC8INCAPRANGE	138	OTHERFC8INCAPRANGE. IF OTHER IN FC8INCAPRANGE, AMOUNT INITIAL CAPITAL
FC9	139	FC9. FINANCIAL CAPITAL 9 HOUSEHOLD INCOME
DE1	140	DE1. DISPLACEMENT EVENT 1 JOB FRUSTRATION
DE2	141	DE2. DISPLACEMENT EVENT 2 LOSS OF EMPLOYMENT

DE3	142	DE3. DISPLACEMENT EVENT 3 LOSS OF FAMILY MEMBER
DE4	143	DE4. DISPLACEMENT EVENT 4 BIRTH OF CHILD
DE5	144	DE5. DISPLACEMENT EVENT 5 DIVORCE
DE6	145	DE6. DISPLACEMENT EVENT 6 MARRIAGE
DE7	146	DE7. DISPLACEMENT EVENT 7 GRADUATION
DE1_score	147	DE1_score. DISPLACEMENT EVENT 1 JOB FRUSTRATION = (DE1 x DE8DE1)
DE2_score	148	DE2_score. DISPLACEMENT EVENT 2 LOSS OF EMPLOYMENT = (DE2 x DE8DE2)
DE3_score	149	DE3_score. DISPLACEMENT EVENT 3 LOSS OF FAMILY MEMBER = (DE3 x DE8DE3)
DE4_score	150	DE4_score. DISPLACEMENT EVENT 4 BIRTH OF CHILD = (DE4 x DE8DE4)
DE5_score	151	DE5_score. DISPLACEMENT EVENT 5 DIVORCE = (DE5 x DE8DE5)
DE6_score	152	DE6_score. DISPLACEMENT EVENT 6 MARRIAGE = (DE6 x DE8DE6)
DE7_score	153	DE7_score. DISPLACEMENT EVENT 7 GRADUATION = (DE7 x DE8DE7)
DE_score_Avg	154	DE_score_Avg. DISPLACEMENT EVENT = Average(DE1_score:DE7_score)
DE8DE7	155	DE8DE7. DISPLACEMENT EVENT IMPORTANCE LEVEL GRADUATION
DE8DE6	156	DE8DE6. DISPLACEMENT EVENT IMPORTANCE LEVEL MARRIAGE
DE8DE5	157	DE8DE5. DISPLACEMENT EVENT IMPORTANCE LEVEL DIVORCE
DE8DE4	158	DE8DE4. DISPLACEMENT EVENT IMPORTANCE LEVEL BIRTH OF CHILD
DE8DE3	159	DE8DE3. DISPLACEMENT EVENT IMPORTANCE LEVEL LOSS OF FAMILY MEMBER
DE8DE2	160	DE8DE2. DISPLACEMENT EVENT IMPORTANCE LEVEL LOSS OF EMPLOYMENT
DE8DE1	161	DE8DE1. DISPLACEMENT EVENT IMPORTANCE LEVEL JOB FRUSTRATION
BS1	162	BS1. STARTUP BUSINESS WITH OWN IDENTITY AND RESOURCES TO OPERATE

BW1	163	BW1. STILL WORKING TO START BUSINESS WITH OWN IDENTITY AND RESOURCES TO OPERATE
BA1	164	BA1. ABANDON EFFORTS AND DO NOT EXPECT TO START THE BUSINESS
BS1_score	165	BS1_score. STARTUP BUSINESS WITH OWN IDENTITY AND RESOURCES TO OPERATE = (BS1 x BS2)
BW1_score	166	BW1_score. STILL WORKING TO START BUSINESS WITH OWN IDENTITY AND RESOURCES TO OPERATE = (BW1 x BW2)
BA1_score	167	BA1_score. ABANDON EFFORTS AND DO NOT EXPECT TO START THE BUSINESS = (BA1 x BA2)
BS1_score_Adj	168	BS1_score_Adj. STARTUP BUSINESS WITH OWN IDENTITY AND RESOURCES TO OPERATE = (BS1_score x B1)
BW1_score_Adj	169	BW1_score_Adj. STILL WORKING TO START BUSINESS WITH OWN IDENTITY AND RESOURCES TO OPERATE = (BW1_score x B1)
BA1_score_Adj	170	BA1_score_Adj. ABANDON EFFORTS AND DO NOT EXPECT TO START THE BUSINESS = (BA1_score x B1)
BEHAVE_score	171	BEHAVE_score. Overall Behavior Score = (BS1_score+BW1_score+BA1_score)*Behavior status B1
B1	172	B1. BEHAVIOR CATEGORIES (STARTUP/WORK-IN-PROGRESS/ABANDON)
YEARSTARTUP	173	YEARSTARTUP. YEAR START UP BUSINESS
YEARABANDON	174	YEARABANDON. YEAR ABANDON ACTIVITIES
BS2	175	BS2. GOOD FAITH START
BW2	176	BW2. GOOD FAITH TO CONTINUE
BA2	177	BA2. GOOD FAITH BEFORE ABANDONING
AGE	178	AGE. AGE ENTREPERNEUR
CurrS1	179	CurrS1. IF STARTED, CURRENTLY INVOLVED IN THE BUSINESS
CurrS1STARTNOTINVOL	180	CurrS1STARTNOTINVOL. IF STARTED, AND CURRENTLY NOT INVOLVED IN BUSINESS
Em1	181	Em1. EMPLOYMENT
Em1NUMBERFULL	182	Em1NUMBERFULL. NUMBER EMPLOYEES FULL TIME

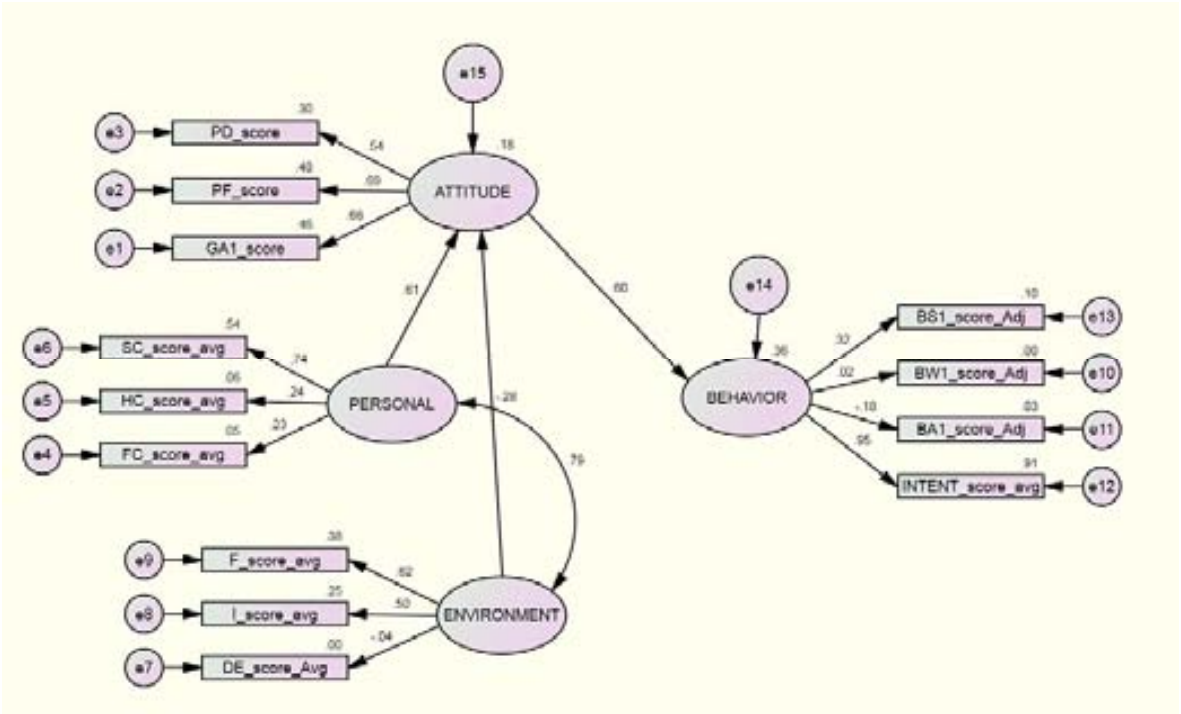
Em1NUMBER PART	183	Em1NUMBERPART. NUMBER OF EMPLOYEES PART TIME
AS1	184	AS1. ANNUAL SALES
CurrS2	185	CurrS2. REASONS TO ABANDON EFFORTS
S1	186	S1. GENDER
IS1	187	IS1. INDUSTRY SECTOR
FR1	188	FR1. AUTHORIZATION TO PARTICIPATE IN FUTURE STUDY
ADDCOMMENTS	189	ADDITIONAL COMMENTS

Appendix 4

The Venture Creation Process: Additional SEM Models

MODEL 2 - In the next model we provide a systematic view of the unobserved variables personal factors (human capital, social capital and financial capital), environmental factors (facilitators, inhibitors and displacement events) on attitudes towards entrepreneurship (desirability perceptions, feasibility perceptions and general attitude) and behavior (based on adjusted measures for status of the venture and intention score average). Similar to the previous model in text Figure 6, this model assumes that attitudes towards entrepreneurship are affected directly by personal and environmental factors. However, personal and environmental factors affect entrepreneurial behavior in an indirect manner, through attitudes.

The venture creation process (Structural Equation Model 2)



The coefficient of determination for attitudes towards entrepreneurship is 18 percent, meaning that the environment and personal factors explain 18 percent of the variance in attitudes towards entrepreneurship. The model also displays the squared multiple correlations for each measured variable. This value represents the extent to which the variance of measured variables is explained by a latent factor, in other words how well the item measures the construct. The coefficient of determination for entrepreneurial behavior was R^2=.36. In this sense, we can argue that the indirect effect of personal and environmental factors in addition to the direct effect of attitudes towards entrepreneurship explain 36 percent of the variance in entrepreneurial behavior. Personal factors positively influence attitudes (β = 0.61) and the environment is negatively related (β = -0.28). Table 56 presents the unstandardized regression weights and the associated *p*-values.

Unstandardized Regression Weights for Structural Equation Model 2

Regression			Estimate	S.E.	C.R.	P
Attitude	<---	Personal	1.000			
Attitude	<---	Environment	-.206	.237	-.870	.384
Behavior	<---	Attitude	1.000			
GA1_score	<---	Attitude	1.244	.290	4.292	***
PF_score	<---	Attitude	1.028	.239	4.309	***
PD_score	<---	Attitude	1.000			
FC_score_avg	<---	Personal	1.277	.859	1.486	.137
HC_score_avg	<---	Personal	1.000			
SC_score_avg	<---	Personal	3.257	1.880	1.733	.083
DE_score_Avg	<---	Environment	-.079	.265	-.300	.764
I_score_avg	<---	Environment	1.322	.463	2.858	.004
F_score_avg	<---	Environment	1.000			
BW1_score_Adj	<---	Behavior	1.000			
BA1_score_Adj	<---	Behavior	-5.754	4.170	-1.380	.168
INTENT_score_avg	<---	Behavior	1.029	.260	3.962	***
BS1_score_Adj	<---	BEHAVIOR	25.666	14.539	1.765	.078

*** *p*-value less than 0.001.

The Chi-square (χ^2) for this model is 195.286, *p*-value of 0.000 and 63 degrees of freedom. A slight increase was found when compared to Model 1 ($\chi^2 = 192.885$) that may be due

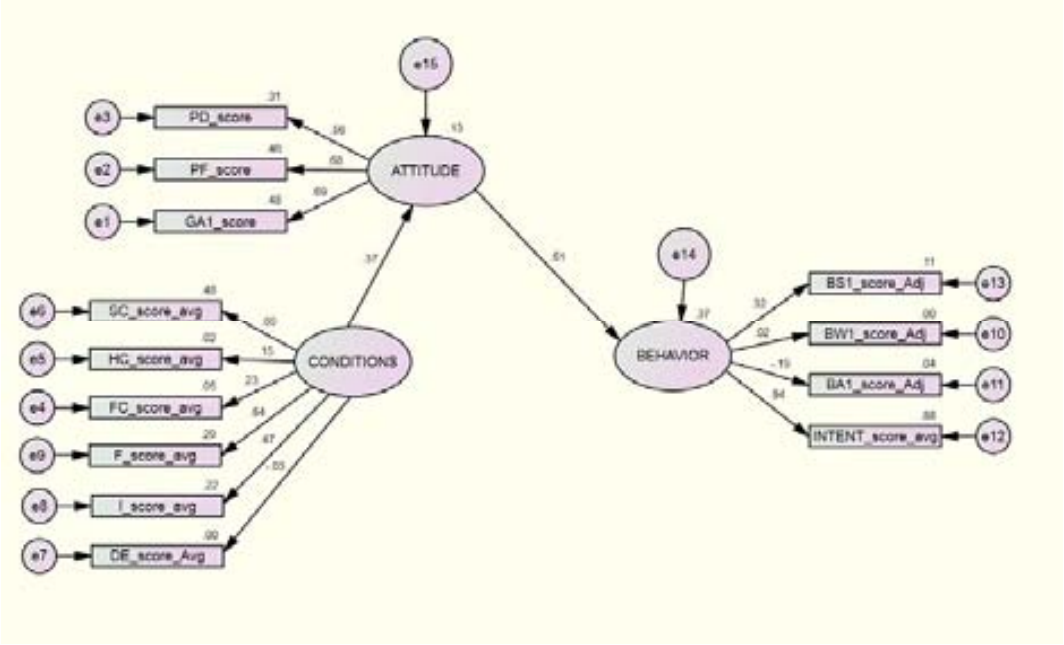
to an increase in degrees of freedom. The null hypothesis that the observed sample and SEM estimated covariance matrices are equal is rejected. The values for the RMSEA and CFI also confirm the above (RMSEA = .141 and CFI = .440). The coefficient of determination for this entrepreneurial behavior model (R^2) is 0.36 meaning that the predictors (attitudes directly and indirectly the personal and environmental factors) explain 36 percent of the variance on entrepreneurial behavior. Moreover, the reduction in (R^2) when compared to model 1 (R^2=.66) suggest that behavior is better explained when it is directly affected by personal factors, environmental factors and attitudes towards entrepreneurship.

Appendix 4

The Venture Creation Process: Additional SEM Models, Continued

MODEL 3 - The previous model showed high correlations between personal factors and environmental factors (R > .50). Because of this the next model includes the indicators (observed variables) for personal and environmental factors in a new latent construct labeled conditions. In the next model (Figure 7) we test the theory that conditions represented by environmental and environmental indicators affect behavior through attitudes towards entrepreneurship. The literature of planned behavior discussed in section 2 (theoretical framework) suggests that exogenous factors affect behavior through attitudes or directly through behavior. Since both personal and environmental factors are just a parcel within exogenous factors and previous models showed high correlations among the two, in the next model we test the indirect effect of conditions on entrepreneurial behavior.

The venture creation process (Structural Equation Model 3)



The previous model (SEM Model 3) presents the relationship between attitudes towards entrepreneurship and entrepreneurial behavior. Also the indirect effect of conditions (through attitudes) and entrepreneurial behavior is shown. The model suggest that conditions positively affect entrepreneurial attitudes ($\beta = .37$). Conditions explain 13 percent of the variance in attitudes towards entrepreneurship. Attitudes towards entrepreneurship also positively influence entrepreneurial behavior ($\beta = .37$). Social capital ($\beta = .69$: $R^2 = .48$), facilitating conditions. ($\beta = .54$: $R^2 = 29$) and inhibiting conditions ($\beta = .47$: $R^2 = .22$) contribute the most to the latent construct conditions. See next table for the regression weights and corresponding *p*-values.

Unstandardized Regression Weights for Structural Equation Model 3

			Estimate	S.E.	C.R.	P
Attitude	<---	Conditions	1.000			
Behavior	<---	Attitude	1.000			
GA1_score	<---	Attitude	1.234	.278	4.433	***
PF_score	<---	Attitude	.981	.223	4.403	***
PD_score	<---	Attitude	1.000			
FC_score_avg	<---	Conditions	2.061	1.303	1.582	.114
HC_score_avg	<---	Conditions	1.000			
SC_score_avg	<---	Conditions	4.963	2.113	2.349	.019
BW1_score_Adj	<---	Behavior	1.000			
BA1_score_Adj	<---	Behavior	-5.960	4.143	-1.438	.150
INTENT_score_avg	<---	Behavior	1.004	.247	4.057	***
BS1_score_Adj	<---	Behavior	25.797	14.070	1.833	.067
F_score_avg	<---	Conditions	3.151	1.346	2.341	.019
I_score_avg	<---	Conditions	4.449	1.975	2.253	.024
DE_score_Avg	<---	Conditions	-.256	.930	-.276	.783

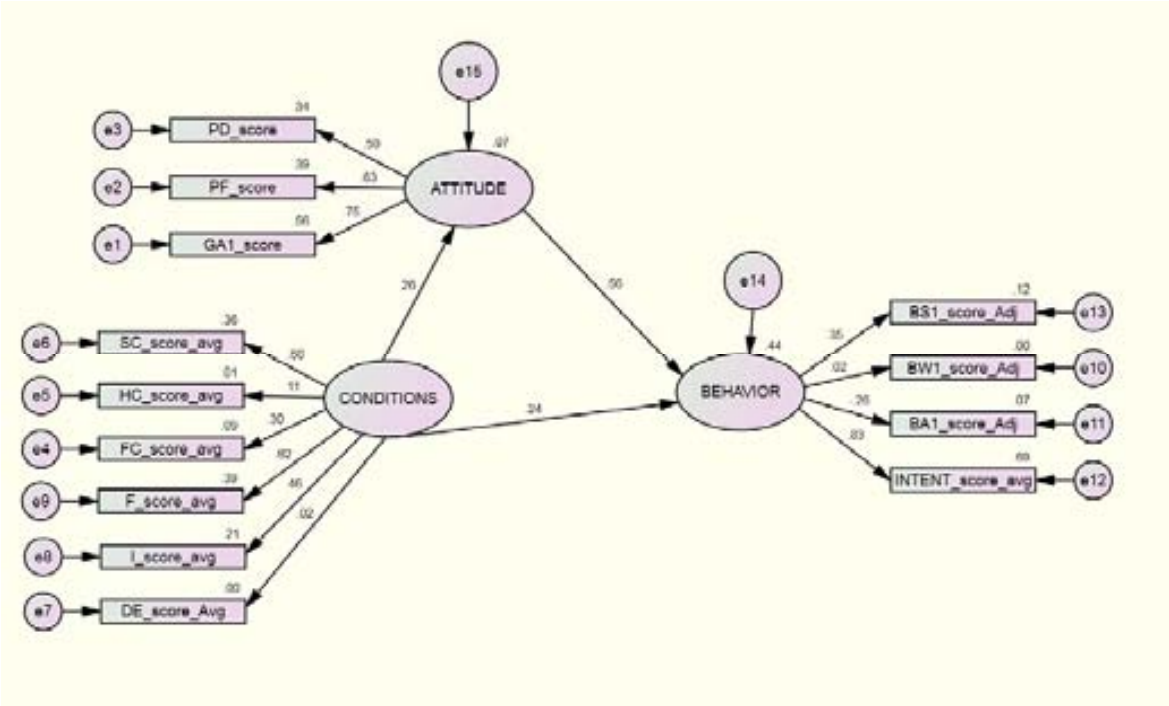
*** *p*-value less than 0.001

Appendix 4

The Venture Creation Process: Additional SEM Models, Continued

MODEL 4 - SEM Model 4 presents the relationship between attitudes towards entrepreneurship and entrepreneurial behavior. Contrary to the previous model (3) we analyze the direct effect of conditions and entrepreneurial behavior. The model suggest that conditions positively affect entrepreneurial attitudes (β = .26). Conditions explain 7 percent of the variance in attitudes towards entrepreneurship. Attitudes towards entrepreneurship also positively influence entrepreneurial behavior (β = .56). Conditions also positively influence entrepreneurial behavior (β = .24). See next table for the regression weights (unstandardized) and corresponding *p*-values.

The Venture Creation Process (Structural Equation Model 4)



Unstandardized Regression Weights (Model 4)

		Estimate	S.E.	C.R.	P
Attitude	<--- Conditions	1.000			
Behavior	<--- Attitude	1.000			
Behavior	<--- Conditions	1.686	1.497	1.127	.260
GA1_score	<--- Attitude	1.270	.279	4.551	***
PF_score	<--- Attitude	.862	.197	4.380	***
PD_score	<--- Attitude	1.000			
FC_score_avg	<--- Conditions	3.610	2.378	1.518	.129
HC_score_avg	<--- Conditions	1.000			
SC_score_avg	<--- Conditions	5.872	3.300	1.779	.075
BW1_score_Adj	<--- Behavior	1.000			
BA1_score_Adj	<--- Behavior	-6.948	3.914	-1.775	.076
INTENT_score_avg	<--- Behavior	.781	.219	3.569	***
BS1_score_Adj	<--- Behavior	24.573	11.715	2.097	.036
F_score_avg	<--- Conditions	5.009	2.813	1.781	.075
I_score_avg	<--- Conditions	6.006	3.492	1.720	.085
DE_score_Avg	<--- Conditions	.247	1.283	.193	.847

*** *p*-value less than 0.001

The Chi-square (χ^2) for this model is 196.432, *p*-value of 0.000 and 64 degrees of freedom. Similar to previous models, the null hypothesis that the observed sample and SEM estimated covariance matrices are equal is rejected. The values for the RMSEA and CFI also confirm the above (RMSEA = .140 and CFI = .439). The coefficient of determination for this entrepreneurial behavior model (R^2) is 0.44 which means that the predictors attitudes towards entrepreneurship and conditions affect explain 44 percent of the variation in entrepreneurial behavior. The reduction in (R^2) when compared to model 1 (R^2=.66) in text (Figure 6) suggest that behavior is better explained when it is directly affected by the separate constructs personal factors, environmental factors and attitudes towards entrepreneurship. Overall, examination of good-of-fit indexes (RMSEA, CFI and χ^2) demonstrated that the SEM models did not fit the data. Once again, it is important to notice that the good-of-fit measures do not prove that the theory is incorrect but it evaluates to what extent the data and the proposed model have a good fit. Overall, what the values of these measures suggest is that the models cannot be generalized.