

EXPLORACIÓN DE LA ACTIVIDAD EMPRESARIAL Y POTENCIAL EN PUERTO RICO: EVIDENCIA DEL GLOBAL ENTREPRENEURSHIP MONITOR

EXPLORING ENTREPRENEURIAL ACTIVITY AND POTENTIAL IN PUERTO RICO: EVIDENCE FROM THE GLOBAL ENTREPRENEURSHIP MONITOR

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Resumen

El propósito de este estudio es explorar la actividad y potencial empresarial en Puerto Rico. Utilizando conceptos de la literatura de intenciones y comportamiento empresarial, se examinan diferencias entre el potencial empresarial (individuos que manifiestan la intención de crear negocio), actividad empresarial naciente (individuos realizando actividades empresariales) y la población general. Las diferencias entre grupos se presentan en términos de actitudes emprendedoras y otras variables sugeridas por la literatura de conducta planificada incluyendo: educación, edad, experiencias previas, entre otras. Más aún, se provee una descripción del estado de actividad empresarial en la región. El análisis utiliza datos del Global Entrepreneurship Monitor, programa de investigación internacional que monitorea la actividad empresarial en las regiones. Específicamente, se utiliza la Encuesta de Población Adulta 2007 para la región de Puerto Rico. Esta encuesta considera una muestra aleatoria de 2000 adultos entre las edades de 18 – 64 años en Puerto Rico. Las diferencias entre grupos – individuos con intenciones empresariales e individuos de la población adulta que no poseen intenciones empresariales – fueron analizadas utilizando metodología cuantitativa, específicamente Análisis de Varianza (ANOVA, por sus siglas en inglés). La prevalencia de actividad empresarial en Puerto Rico se resume utilizando estadísticas descriptivas basadas en las definiciones provistas por el Global Entrepreneurship Monitor: tasa de actividad empresarial naciente, tasa de nuevos negocios, tasa de negocios establecidos y total de actividad empresarial. A pesar de ser un estudio descriptivo, los resultados sugieren implicaciones para el desarrollo de futura investigación y provee una base para establecer iniciativas que promuevan el emprendimiento y el desarrollo económico en la región.

Palabras claves: modelos de intención emprendedora, Global Entrepreneurship Monitor, etapa temprana de la actividad emprendedora

Abstract

The purpose of the study is to explore early stage entrepreneurial activity and potential in Puerto Rico. Using concepts from the literature on entrepreneurial intentions and behavior, we examine differences between potential entrepreneurs (individuals who manifest intentions to create a business), total early stage entrepreneurial activity (individuals actively pursuing entrepreneurship) and the general population. Differences between groups are presented in terms of attitudes towards entrepreneurship and other exogenous variables (education, age, prior exposure, among others) suggested by the literature on planned behavior. Also a description of the state of entrepreneurial activity in the region

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is provided. The analysis was conducted using data from the Global Entrepreneurship Monitor, international research program that monitors entrepreneurial activity of regions, specifically 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. The differences between groups - individuals who have entrepreneurial intentions and individuals who do not have the intention of creating a business - were analyzed using quantitative methodology, specifically Analysis of Variance (ANOVA). 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 study, although descriptive, suggest several research implications and provide the baseline to establish context specific initiatives to promote entrepreneurship and economic development in the region.

Keywords: entrepreneurial intention models, global entrepreneurship monitor; early stage entrepreneurial activity

Introduction

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 that shed light into this phenomenon. Researchers from several disciplines (psychology, anthropology, management, among others) have tried to capture the phenomenon through their field 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 context, 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.

Danhoff (1949) 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. 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). This study defines emergence using the intentionality property: intention to create a business in the near future.

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.

Putting intentions at the core of entrepreneurship creates limitations in terms of finding representative samples of the population that could provide insights into entrepreneurship. 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 of 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). In this study, we employ data from the Global Entrepreneurship Monitor (GEM), Puerto Rico Region. The Adult Population Survey (APS), which considers a random sample of 2,000 individuals from the adult population (18-64), provides the samples to examine 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 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.

The general purpose of this study is to explore entre-

preneurial activity and potential in Puerto Rico. Using notions from the literature on entrepreneurial intentions, we examine differences between potential entrepreneurs (individuals who manifest intentions to create a business), total early stage entrepreneurial activity (individuals actively pursuing entrepreneurship) and the general population. More specifically, using descriptive and inferential statistics the study examines differences between the two groups in terms of attitudes and other factors (employment status, education, gender, among others) suggested by the literature on planned behavior. The results of this study, although descriptive, will provide the baseline to establish context specific initiatives that promote entrepreneurship and economic development in the region. More specifically: (1) by examining entrepreneurial intentions, the future entrepreneurial potential will be estimated since intention is the best predictor of behavior; (2) assessing differences in attitudes/perceptions (precursors of intentions) increases understanding of this intentional process in order to further influence and spur entrepreneurial behavior; and (3) by examining exogenous factors (situation and personal variables) that differ between groups will increase our understanding of the factors at play in entrepreneurship. In sum, by systematically analyzing these, context specific policy and programmatic initiatives can be developed to target entrepreneurial potential, encourage further expansion the entrepreneurial base, and consequently stimulate regional development.

The paper is divided as follows. First we provide the conceptual basis of the study by presenting a review of models based on the theories of planned behavior, and its application to entrepreneurship research. 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). These models of intentional behavior provide the basis to explore entrepreneurial activity and potential. Second, we present the methodology, followed by the results of the study. Finally we discuss limitations and future areas for research.

Literature Review

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, therefore, entrepreneurial intentions merits attention. Also, intentions offer a means to better explain and predict entrepreneurship. According to Ajzen (1991) intentions entail an enactive cog-

nitive process which serves to channel beliefs, perceptions and other exogenous factors into the intent to act, then 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

The Theory of Planned Behavior (TPB) is an extension of the theory of reasoned action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). This theory was developed in order to address the original model's limitations in dealing with behaviors over which people have incomplete volitional control. Based on the discussed theory, the most important determinant of behavior is intention. These are a function of attitudes towards a conduct and subjective norms (Fishbein & Ajzen, 1975). While the first one refers to beliefs individuals have towards an object; 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.

In 1982 Shapero developed a model of entrepreneurial event based on the Theory of Planned Behavior. 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 (1982) emphasizes 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 (SEE) do not state the relative importance of these dimensions in the formulation of entrepreneurial intentions, Krueger & 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 & Carsrud (2000).

Krueger & 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 & 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 & Carsrud (2000) both TPB and 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. 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 social factors.

The literature review on intentional models reinforces the importance of attitudes/perceptions in the formulation of entrepreneurial intentions. 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 at-

titudes preclude intentions. Because of this, we proposed the following:

P₁: Potential entrepreneurs and individuals involved in early stage entrepreneurial activity (TEA) will differ from the general population in terms of attitudes towards entrepreneurship.

Empirical studies address the role of intentions in entrepreneurial behavior. For example Katz (1990) found that only one third of individuals with self-employment intentions followed through. Carter et al. (1996) found higher rates, where 48 percent of individuals with entrepreneurial intentions actually started a business. Using data from 668 nascent entrepreneurs derived from the Panel Study of Entrepreneurial Dynamics Lia et al. (2005) found that 44 percent succeeded at firm emergence. The fact that most studies indicate an imperfect link between intention and behavior suggests there is much more involved in the process suggesting the role of exogenous factors in the intention-behavior relationship.

Several authors suggest that intention frameworks offer a mechanism to assess hypothesize exogenous factors. According to Krueger & Carsrud (1993) attitudes preclude intentions but derive from exogenous influences, including situational (employment status or informational cues from the environment) or personal (demographics and personality traits). For example, prior experiences and prior entrepreneurial exposure influence intentions indirectly through attitude (social norm and perceived controllability). According to others, exogenous factors usually affect intentions and behavior indirectly through attitude changes, not directly (Ajzen, 1987, Bagozzi & Yi, 1989). These factors either drive attitudes or moderate the relationship between intentions and behaviors (facilitates or inhibit the realization of intentions). Although intentions are specific to the person and context, exogenous factors are generally personal or situational variables. Therefore, intentional frameworks offer 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) 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) fi-

nancial 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. Because of the above we proposed the following:

P₂: Potential entrepreneurs and individuals involved in early stage entrepreneurial activity (TEA) will differ from the general population in terms of exogenous factors.

The previous discussion puts forth the importance of attitudes when examining entrepreneurial potential; desirability and feasibility perceptions (terminology employed by Shapero & Sokol, 1982; and later by Krueger & Brazeal, 1994) are proven antecedents of intentions. More specifically, individuals must perceive the entrepreneurial career as desirable (attractive) as well as feasible (can do it). In this sense we will expect that individuals who manifest entrepreneurial intentions will have more favorable attitudes towards entrepreneurship when compared with individuals who have no intentions of pursuing the entrepreneurial career. Notice that in accordance to Shapero (1982) desirability perceptions receive input from the environment particularly since individuals will consider the entrepreneurial career attractive as long as it is valued by the region, in this case Puerto Rico.

Because of the above we analyze differences between groups (entrepreneurial potential and general population) in terms of exogenous factors, and categorized these in three dimensions: human capital, social capital and other personal characteristics. According to Chrisman (1999) entrepreneurs are a key resource during venture creation, more specifically their knowledge. Davidsson & 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. According to them formal education is one component of human capital that assists in the accumulation of explicit knowledge that provides skills useful to entrepreneurs. 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. 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 (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).

According to Chrisman (1999) knowledge can be possessed by the entrepreneur or by other potential contributor to the emerging organization. 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 from their social structures, networks and memberships (Lin et al., 1981). For example, Krueger & Carsrud (1993) suggest that outside advisors can act as facilitators, trainers and mentors. Brockhaus & 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 (entrepreneurial parents or friends) has been associated to entrepreneurship but its impact has had different interpretations. 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 it can provide networks that facilitate discovery, identification, collection and allocation of scarce resources (Birley, 1985; Greene & Brown, 1997). Because of the above we compare human, social and other characteristics for individuals who intend to pursue the entrepreneurial career and those who do not.

Research Methodology

The purpose of this study is to explore entrepreneurial activity and potential in Puerto Rico, using assumptions provided by the literature on entrepreneurial intentions and behavior. 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. 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 study, although descriptive, provide a baseline to establish context specific initiatives that promote entrepreneurship and economic development in the region. Refer to Table 1 for a Description of Variables.

In order to examine the differences between the groups (entrepreneurial potential, early stage entrepreneurs and general population) we employed data from the Global Entrepreneurship Monitor, international research program that monitors entrepreneurial activity of regions. The data used for this analysis was obtained from the Adult Population Survey 2007 (APS) for the Puerto Rico 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 in

Table 1: Description of Variables		
Prevalence Rates		
Nascent Entrepreneurship	Actively involved in setting up a business the 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		
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
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
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 = 0

dividuals 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).

In order to examine entrepreneurial potential in Puerto Rico 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. After classifying a priori the groups, we conducted Analysis of Variance to evaluate the mean differences between samples.

Analysis

In this section we discuss the findings of our study. 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. Secondly, we discuss the findings concerning our first proposition: *potential entrepreneurs will differ from the general population in terms of attitudes towards entrepreneurship*. Finally, we present the results that will shed light into our second proposition: *potential entrepreneurs will differ from the general population in terms of exogenous factors*.

Table 2 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 3 summarizes the results of attitudes towards entrepreneurship for both groups: entrepreneurial potential and general population. 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 most be valued by the region (culture). The results in table 3 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.

Although the results show some support for proposition one based on three out of five indicators, two measures (perceiving entrepreneurship a good career and media coverage of entrepreneurs) did not show significant differences between groups. This 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

Table 2: 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 sample (n = 1998).	

Table 3: Attitudes Entrepreneurial Potential and General Population					
Perceptual Variable	Entrepreneurial Potential	General Population	Total	F-Value	Sig.
<i>Desirability Perceptions</i>					
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
<i>Feasibility Perceptions</i>					
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

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 4 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 majority 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.

Table 4: 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 5 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 opportu-

nities 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 believe they have knowledge and skills to enterprise. This is significantly higher when compared to only 45 percent for the general population.

Table 6 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. The majority of 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.

Table 5: Attitudes Total Early Stage Entrepreneurial Activity and General Population

Perceptual Variable	Total Early Stage Entrepreneurial Activity	General Population	Total	F-Value	Sig.
<i>Desirability Perceptions</i>					
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
<i>Feasibility Perceptions</i>					
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 6: 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

Limitations

The study provides insights into entrepreneurial activity and potential in Puerto Rico, through the use of descriptive and inferential statistics. 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). 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 study 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.

Conclusions and Implications

According to the literature on planned behavior, intentions are the best predictor of behavior. Intentions and consequently behavior are influenced by individual perceptions as well as by other exogenous factors. These assumptions were the basis for our exploration, and the study allowed us to partially support them. Based on the findings 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 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 im

portance of these during the venture process: from entrepreneurial potential (intentions) to behavior (actively conducting entrepreneurship).

Feasibility perceptions differed for entrepreneurial potential, early stage entrepreneurship 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 success 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).

The study also assessed the role of exogenous factors on entrepreneurial potential and early-stage entrepreneurial activity. The factors examined 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 extent 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, independence) as well as environmental factors that will lead employed individuals take the steps towards the entrepreneurial career. Two questions come to mind: (1) *If there is a significant proportion of entrepreneurial potential within existing organization, why aren't individuals exploiting intrapreneurial opportunities?* (2) *Are established organizations creating an environment that fosters intrapreneurship?*

In sum, using data from the Global Entrepreneurship Monitor, this study examined entrepreneurial potential and early stage entrepreneurship in Puerto Rico. 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 and the process itself. Although this study was an attempt to provide a glimpse into the initial stages of entrepreneurship in a specific context, Puerto Rico, more comprehensive examinations of the process should be conducted. Panel studies that examine the process overtime - from entre-

preneurial potential to firm birth – could provide a wholesome look into the factors at play in entrepreneurship, consequently the blueprint for economic and regional development.

References

- Ajzen, I. (1987). Attitudes, traits and actions: dispositional prediction of behavior in social psychology, *Advances in Experimental Psychology*, 20, 1-63.
- Ajzen, I. (1991). *The Theory of Planned Behavior*. Organizational Behavior and Human Decision Processes, volume 50, 179-211.
- Ajzen, I. & M. Fishbein (1980). *Understanding Attitudes and Predicting Social Behavior*. Englewood Cliffs, NJ.: Prentice-Hall.
- Bagozzi, R. and Yi, Y. (1989). An investigation into the role of intentions as mediators of the attitude behavior relationship. *Journal of Economic psychology* 10, 35-62.
- Becker, G.S. (1964). *Humana capital*. New York: Columbia University Press.
- Bird, B. (1988). Implementing Entrepreneurial Ideas: The Case for Intentions. *Academy of Management Review* 13, 442-453.
- Brockhaus, R. and Horwitz, P. (1986). Psychology of the entrepreneur. In D Sexton & R. Smilor (Eds.). *The art and science of entrepreneurship*, pp. 25-48. Cambridge, MA: Ballinger.
- Carter, N., Gartner, W., Reynolds, P. (1996). Exploring start-up event sequences. *Journal of Business Venturing*, 11(151-199).
- Chrisman, J.J. (1999), The influence of outsider-generated knowledge resources on venture creation, *Journal of Small Business Management*, 37 (4), 42-58.
- Davidsson, P. and B. Honig (2003), 'The role of social and human capital among nascent entrepreneurs'. *Journal of Business Venturing* 18, 301-331.
- Danhoff, C.K. (1949). Observations on entrepreneurship in agriculture. In A.H. Cole (Ed.), *Change and the entrepreneur* (pp. 20-24). Cambridge, MA: Harvard University Press.
- Emerson, (1972). *Exchange Theory, Part I: A Psychological Basis for Social Exchange, and Exchange Theory, Part II: Exchange Relations and Networks*. In J. Berger et al. (EDS), *Sociological Theories in Progress*. Boston: Houghton-Mifflin.
- Fishbein, M., Ajzen, I. (1975) *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading, MA. Addison-Wesley.
- Gartner, W.B. (1985). A conceptual framework for describing the phenomenon of new venture creation. *Academy of Management Review*, 10(4), 696-706.
- Gartner, W. B. (1988) "Who is an entrepreneur?" is the wrong question. *Entrepreneurship Theory and Practice* 13 (4), 47 – 68.
- Gnyawali, D. R., & Fogel, D. S. (1994). *Environments for Entrepreneurship Development: Key Dimensions and Research Implications*. Entrepreneurship Theory and Practice. Baylor University.
- Green, P., Brown, T. (1997). Resource needs and dynamic capitalism typology. *Journal of Business Venturing*, 12 (3), 161-173.
- Katz, J. (1990). Longitudinal analysis of self-employment follow-through. *Entrepreneurship and Regional Development*, 2 (1), 15–25.
- Katz, J. and Gartner, W. 1988. Properties of emerging organizations. *Academy of Management Review*. 13: 429-441.
- Krueger, N. (1993). The impact of prior exposure to entrepreneurship on perceptions of new venture feasibility and desirability, *Entrepreneurship Theory and Practice*, volume 18(1), 5–21.
- Krueger, N. F., & Carsrud, A. L. (1993). Entrepreneurial intentions: Applying the theory of planned behavior. *Entrepreneurship and Regional Development*, 5, 315-330.
- Krueger, N., Reilly, M., and Carsrud, A. (2000). Competing Models of Entrepreneurial Intentions, *Journal of Business Venturing*, volume 15, 411- 432.
- Krueger, N. and Brazeal, D. 1994. Entrepreneurial potential & potential entrepreneurs. *Entrepreneurship Theory & Practice*, 18(3): 91-104.
- Lia, J., Welsch, H., Wee-Liang, T. (2005). Venture gestation paths of nascent entrepreneurs: Exploring the temporal patterns. *Journal of High Technology Management Research*, 16(1-22).
- Martin, M. (1985). *Managing Technological Innovation and Entrepreneurship*. Reston Publishing Company, Inc. Reston, VA.
- Mitton, D. G. (1989). The complete entrepreneur. *Entrepreneurship Theory and Practice*, 13 (3), 9-20.
- Reynolds, Paul D. (2000). National panel study of U.S. business startups: Background and methodology. *Databases for the Study of Entrepreneurship*, Volume 4, pages 153–227.
- Shapero, A., Sokol, L. (1982) The social dimensions of entrepreneurship. In Kent, C., Sexton, D., Vesper, K. (eds.) *The Encyclopedia of Entrepreneurship*. Englewood Cliffs, NJ. Prentice-Hall, Inc. 72 – 90.
- Vesper, K. H. (1990). *New venture strategies*. Englewood Cliffs, NJ: Prentice Hall.