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An investigation into entrepreneurial intentions in Caribbean Small Island Developing States

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Abstract

This paper explored entrepreneurial intentions in the Caribbean adult population using a social cognitive approach. It used the Global Entrepreneurship Monitor (GEM) Adult Population Survey (APS), which includes questions about entrepreneurial intentions of potential business owners and entrepreneurial perceptions, namely individual, entrepreneurial opportunities and socio-cultural, along with demographic and socio-economic variables. The effect of perceptions along with socio-economic control variables on entrepreneurial intentions was investigated using probit regression models. The results confirm that even after controlling for demographic and socio-economic and country fixed effects, social cognitive perceptions were indeed relevant in explaining entrepreneurial intentions in the region. This study therefore provides insights into understanding entrepreneurship in particular the decision to form a new business through the individual's perceptions and intentions.

Keywords: Entrepreneurship, Entrepreneurial intention, Cognitive models, Probit models, Small Island Developing States

Introduction

Entrepreneurship is a key driver of economic growth and development (Schumpeter, 1934). Entrepreneurship is shown to reduce poverty, improve well-being, and empower disadvantaged segments of the population (Schumpeter, 1934; Thomas & Mueller, 2000). Entrepreneurs are "persons who are ingenious and creative in finding ways that add to their own wealth, power, and prestige" (Baumol, 1990, p 897). They are individuals who exploit market opportunity through technical and/or organizational innovation. Entrepreneurs pay taxes, create jobs, innovate and take investment risks, which results in increase exports, technological progress, productivity, competitiveness and economic growth of a country (Carree et al., 2002; Nakara et al., 2020; Wennekers et al., 2005). Accordingly, entrepreneurs have received increasing attention from academics and policy makers alike. Less emphasis has, however, been placed on potential entrepreneurs, and understanding what factors determine their entrepreneurial intention and decision to start a new venture.

Entrepreneurship originates when a person decides to set up a new enterprise. In order to promote more entrepreneurial activity it is therefore necessary to understand why individuals make that decision (Autio et al., 2001; Kim, 2008; Liñán & Chen, 2009; Liñán & Fayolle, 2015; Shirokova et al., 2016; Tsai et al., 2016; Vamvaka et al., 2020; Van Auken et al., 2006). Potential entrepreneurs capture the influence of the external environment through their perceptions, generating attitudes and intentions, which determine their decision-making and behavior. Perceptions are mental representations of the external environment around individuals, captured through their senses and elaborated in their mind. These representations may differ among individuals because of the presence of different cognitive biases.

In the limited literature on entrepreneurial intention there has been an interest in increasing our understanding through the lens of social cognitive theory (Arenius & Minniti, 2005; Baron, 2004; Botsaris & Vamvaka, 2016; Brändle et al., 2018; Krueger et al., 2000; Liñán & Fayolle, 2015; Wadeson, 2006). It is proposed that the social cognitive perspective is able to distinguish entrepreneurs from non-entrepreneurs by investigating differences in beliefs, values, cognitive styles, and mental processes (Mitchell et al., 2002). This leads to an improved understanding of what drives people's perception and behavior. The cognitive entrepreneurship literature nonetheless remains limited in examining the influence of perceptions on the intentions of individuals to start a new business venture (Kim, 2008). Moreover, there is a paucity of studies on entrepreneurship intentions using a cognitive framework applied to developing countries and Small Island Developing States (SIDS) in particular.

There is consensus in the literature that SIDS are intrinsically different from larger nations, not only because of their physical features, but also in terms of their social, economic and cultural context (Baldacchino, 1995; Baldacchino et al., 2008; Sultana, 2006). Given that starting a new enterprise is highly susceptible to contextual factors, the findings of entrepreneurship studies conducted in larger countries and markets both developed and developing may not be applicable to the peculiarities of small states. In SIDS persons become entrepreneurs primarily because of a lack of quality jobs and to escape poverty, and there is often a low number of successful business start-ups (Mohan et al., 2018). Furthermore, the microenvironment of SIDS is said to give rise to distinct business conditions that may influence cognitive processes in entrepreneurial start-up intentions (Baldacchino et al., 2008).

In Caribbean SIDS there are generally fewer opportunities for entrepreneurship compared to higher-income countries that are more likely to have opportunity-driven entrepreneurship (Mohan et al., 2018; Skeete et al., 2007). Entrepreneurship figures in Caribbean SIDS show that 70% of the workforce is self-employed in businesses with no employees, mainly because of a lack of quality jobs (Lederman et al., 2014). This may be because the Caribbean is characterized by a large number of informal, small service businesses owned and managed by women in particular (World Bank, 2014). The majority of these entrepreneurs are forced to start a business because of limited employment opportunities and to escape poverty. Further, the micro, small and medium enterprise (SMEs) sector accounts for the majority of private enterprises in the Caribbean, and contributes more than 50% to the region's Gross Domestic Product (GDP) and employment (CDB, 2016). Moreover, given the unique challenges of Caribbean islands, including

low growth and high debt and vulnerability to external shocks, entrepreneurship is an essential ingredient for economic growth and development (Mohan et al., 2019). The Caribbean also has its own structural and social psychological factors, which oftentimes hinder entrepreneurial activity (Devonish et al., 2010). Increasing entrepreneurship is in the region is thus essential.

A study of entrepreneurial intention in the Caribbean would provide insights into understanding the formation of new business start-ups through the potential entrepreneur's perceptions and intentions. This will help explain whether entrepreneurial perceptions play a similar or different role in SIDS. It will stress the need to design some specific national policies to promote entrepreneurship and therefore, economic development in island states with low start-up levels and low economic growth. This paper aimed to use a social cognitive approach to investigate the role of perceptions in the formation of business intentions in Caribbean SIDS. It used the 2014 Global Entrepreneurship Monitor (GEM) Adult Population Survey (APS) to investigate entrepreneurial intention and cognitive perspectives in Barbados, Belize, Jamaica, Trinidad and Tobago, and Suriname. The GEM questionnaire includes information on entrepreneurial intentions and cognitive items, as well as demographic and socio-economic variables at the country level. Specifically, the paper used probit models to investigate the relationship between entrepreneurial intentions and individual, economic opportunities, and socio-cultural perceptions. It also used demographic and socio-economic variables as control variables along with country dummies.

The rest of the paper is organized as follows. "Entrepreneurship and entrepreneurial intentions in Caribbean SIDS" section outlines the theoretical approach adopted. "Theoretical approach" section provides an overview of entrepreneurship and business start-up intentions in the Caribbean. "Data and methodology" section presents the data and methodology utilized. "Results" section states the results. "Discussion" section details a discussion of the results. Finally, "Conclusion" section concludes the paper.

Entrepreneurship and entrepreneurial intentions in Caribbean SIDS

In the Caribbean there is the perception of a dearth of entrepreneurship and business start-up opportunities (Devonish et al., 2010). Nearly 70% of the workforce is self-employed primarily because of limited employment opportunities and quality jobs to escape poverty (Lederman et al., 2014). Moreover, the region is said to have a relatively high number of necessity entrepreneurs (Kelley et al., 2016; Mohan et al., 2018). The businesses are mainly informal, small service firms owned and managed by family members in particular, women and other marginalized groups. They dominate the SMEs sector. Moreover, SMEs account for the majority of private businesses in the Caribbean and contribute more than 50% to the region's GDP and employment (CDB, 2016).

The literature proposes that developing a better understanding of the Caribbean context and culture can provide greater insights into the nature of entrepreneurial intention and activity in the region (Devonish et al., 2010). Boxill (2003) claimed that there must be an appreciation of the structural and social psychological factors, which shape the context in which the status of Caribbean entrepreneurship exists. This consideration of context and culture is essential for studying the theoretical characteristics of entrepreneurship. Skeete et al. (2007) recommended several

contextual factors in Jamaica that limit opportunities for entrepreneurship. These factors include difficulty in accessing finance, limited training and education and tax benefits, and high bureaucracy. Knight and Hossain (2008) also contended that contextual factors inherent in the Barbadian culture hinder entrepreneurship. They highlighted deficiencies in the micro-financing sector, together with the negative social psychological effects of colonialism, slavery, and plantation economic structures, a relatively individualistic culture, and a history of distrust and suspicion.

There are nevertheless hardly any studies that used a social cognitive model to empirically investigate entrepreneurial intentions in the Caribbean. Among the few studies, Devonish et al. (2010) examined an entrepreneurial intentions model for the Caribbean using socio-cognitive predictors. The study adopted structural equation modeling on a survey of 376 university students in Barbados. The model found that in the Caribbean context prior exposure to entrepreneurial experiences had a direct and positive effect on perceived desirability and perceived feasibility for entrepreneurship. These perceptions, in turn, had a direct and positive effect on entrepreneurial intentions. In another study of University students—539 in Trinidad, Esnard (2010) employed social cognitive theory to investigate gender and entrepreneurial attitude and self-efficacy. The findings indicated that gender acted as a weak determinant of entrepreneurial self-efficacy and is insignificant in affecting entrepreneurial attitude. Mohan et al. (2018) studied entrepreneurial motivation in potential and early stage entrepreneurs using the GEM APS for Barbados, Jamaica and Trinidad and Tobago. The results from probit regressions indicated that perceptual as well as socio-economic factors affect nascent entrepreneurship and do so differently among opportunity and necessity entrepreneurs. In a follow up study Mohan (2019) showed that start up motivation is related to firm performance.

Theoretical approach

Entrepreneurial intention

The literature recognizes that a good predictor of planned behavior is an individual's intention, particularly if the behavior is infrequent, hard to recognize, and scarce (Fragoso et al., 2019; Jena, 2020; Liñán & Fayolle, 2015; Vamvaka et al., 2020). According to Bird (1988) these attributes are also characteristic of entrepreneurial behavior, which is considered intended and deliberate behavior. Setting up a business entails planned behavior that can be predicted based on the intentions presented by the individual at a given point in time. Entrepreneurial intention is a "self-acknowledged conviction" of an individual that is willing to start a new business and actively plans to accomplish this in future (Vamvaka et al., 2020; Brändle et al., 2018; Botsaris & Vamvaka, 2016; Thompson, 2009). It explains an individual's thoughts and actions as it regards their willingness or intention to create a new enterprise and is considered the first step toward starting a new business. More formally, Bird (1988, p 442) defined entrepreneurial intention as "the state of mind that directs attention, expertise and action towards a business concept." Thus, it is important to study entrepreneurial intentions to better understand how to encourage and support new firm creation (Liñán & Fayolle, 2015).

Entrepreneurial intention and the social cognitive approach

The role of perceptions is identified as one of the most important cognitive factors in an individual's intention to start a business (Baron, 2004; Botsaris & Vamvaka, 2016; Brändle et al., 2018; Gaglio, 2004; Krueger, 2000; Mitchell et al., 2002, 2004; Shaver & Scott, 1991; Vamvaka et al., 2020). Perceptions are a cognitive construct. They are mental representations of the external environment around individuals, captured through their senses and elaborated in their mind. These representations may differ among individuals because of the presence of different cognitive biases. Entrepreneurs, because of their work under high uncertainty and time pressure, have a higher susceptibility to several cognitive biases, affecting their level of perceptions (Liñán & Chen, 2009; Liñán & Fayolle, 2015). In this sense, compared to other people, they can perceive lower risk levels or higher confidence in their own capacities to start a business (Fragoso et al., 2019; Vamvaka et al., 2020).

The literature identifies social cognitive theory as relevant for the study of entrepreneurial intentions (Liñán & Fayolle, 2015, Krueger et al., 2000; Baron, 1998; Mitchell, 1994; Shane et al., 2003; Mitchell et al., 2000; Baron, 2004; Mitchell et al., 2002; Mitchell et al., 2004). Within the social cognitive approach, studies show that whatever the individual thinks, says or does is influenced by the cognitive processes through which they acquire, use and process information (Baron & Markman, 1999; Kruger & Evans, 2004; Shirokova et al., 2016; Tsai et al., 2016). Within the entrepreneurial literature, the cognitive approach defines a stable characteristic as a way in which individuals process and evaluate information, solve problems and make decisions (Goldstein & Blackman, 1978; Hayes & Allinson, 1994). The cognitive theory tries to understand the development of competencies and the regulation of actions of individuals.

The social cognitive approach emphasizes the fact that everything we say or do is influenced by mental processes, such as motivation, perceptions, or attitudes. Through these processes, people acquire information, store it, transform it, and use it to accomplish different tasks. According to Mitchell et al. (2002), entrepreneurial cognitions are the knowledge structures that people use to make assessment, judgement or decisions involving opportunity evaluation, venture creation and growth. This perspective suggests that entrepreneurs think and process information differently from non-entrepreneurs and such differences may help to distinguish people who create or aim to establish businesses from people who do not. The literature acknowledges three categories of perceptions that affect entrepreneurial intention: individual perceptions, entrepreneurial or economic perceptions and socio-cultural perceptions.

Entrepreneurial intention and individual perceptions

Three commonly recognized individual perceptions in entrepreneurial cognitive research are having a role model, self-efficacy or self-confidence and risk aversion (Botsaris & Vamvaka, 2016; Kolvereid, 1996; Krueger et al., 2000; Liñán & Chen, 2009; Vamvaka et al., 2020). Role model theory explains that learning occurs by copying the action of others, and a person's decision to engage in certain behavior is often influenced by the behavior and opinions of others (Ajzen, 1991; Akerlof & Kranton, 2000). Individuals are assumed to learn in a social context through the observation of others, that is, learning by example. This premise holds for the decision to engage in entrepreneurship (Arenius

& Minniti, 2005; Scherer et al., 1991). Role models may enhance the desire of a person to become an entrepreneur (Nowiński & Haddoud, 2019; Van Auken et al., 2006), and ultimately, entrepreneurial activity (Krueger et al., 2000). This is commonly seen where children become entrepreneurs because their parents were entrepreneurs.

Self-efficacy or self-confidence is a person's belief in their capability to perform a given task (Fragoso et al., 2019; Hassan et al., 2020; Vamvaka et al., 2020). Individuals that consider themselves capable of becoming an entrepreneur have a higher degree of belief that they can, and are more likely to do so. As such, they exhibit higher entrepreneurial intentions (Fragoso et al., 2019; Botsaris & Vamvaka, 2016; Krueger & Brazeal, 1994; Frazier & Niehm, 2006; Chen et al., 1998; Robinson et al., 1991). Entrepreneurship is generally associated with risk taking. A main factor in differentiating entrepreneurs from non-entrepreneurs is the level of risk taking (Entrialgo et al., 2000; Simon et al., 2000; Thomas & Mueller, 2000). The cognitive approach has shown that risk plays an important role in entrepreneurial intentions (Shane et al., 2003). A more positive attitude towards risk taking leads to stronger entrepreneurial intentions (Arenius & Minniti, 2005). Potential entrepreneurs are expected to perceive lower risks and therefore their intentions of becoming entrepreneurs would be higher.

Entrepreneurial intention and economic opportunity perceptions

There is evidence that a country that experiences stable macro-economic conditions and sustained economic growth experience higher levels of business start-up activity, (Nakara et al., 2020; Carree & Thurik, 2003; Wennekers & Thurik, 1999). This also holds for poor countries. A positive correlation between economic growth and the rate of entrepreneurship is found in high- and low-income countries, while in middle-income countries these correlations tend to be negative (Nakara et al., 2020; Audretsch et al., 2002; Carree et al., 2002; Tang & Koveos, 2004). In high-income countries people tend to be motivated by economic opportunities. In low-income countries people are more motivated by necessity (Bosma et al., 2008). The cognitive process makes some individuals more sensitive than others to the different economic opportunities provided by the market and available resources. Individuals who perceive that economic opportunities are present are more likely to display entrepreneurial intentions (Ardichvili et al., 2003; Hassan et al., 2020; Shane & Venkataraman, 2000; Thurik et al., 2002).

Entrepreneurial intention and socio-cultural perceptions

The entrepreneurship literature also studied the influence of socio-cultural aspects on start-up intention through cognitive mechanisms. Culture is made up of ideas, values, and norms common to a particular group of people, which shapes their behavior (Fragoso et al., 2019; Inglehart, 1997). More formally, culture is defined as the collective programming of the mind that distinguishes the members of one human group from another (Hofstede & Hofstede, 2005). Culture may influence entrepreneurship through social legitimation and promoting certain positive attitudes related to firm creation (Davidsson, 1995; Liñán & Santos, 2007; Liñán et al., 2020). Hofstede's (1980) four dimensions of national culture—power distance, uncertainty avoidance, individualism and collectivism, and masculinity and femininity are often used for studies on cultural influence on new firm creation. Some studies suggest that entrepreneurs would tend to

exhibit high power distance, low uncertainty avoidance, high individualism and high masculinity (Busenitz & Lau, 1996; McGrath et al., 1992). Others suggest that low power distance cultures would favor entrepreneurship (Liñán & Chen, 2009; Mueller et al., 2002). These studies confirm that cultural cognition matters in the formation of entrepreneurial intentions. Studies also propose that in countries where a greater proportion of the population has entrepreneurial values, there will be a greater prevalence of entrepreneurial behavior (Davidsson, 1995).

Data and methodology

Data

The study used the GEM APS. This is the largest internationally comparable data set on entrepreneurship. It measures the level and nature of entrepreneurial intentions and activity around the world. The GEM APS is administered to a representative national sample of at least 2000 respondents. It tracks entrepreneurial aspirations, perceptions and attitudes, together with behavior of individuals in the lifecycle of the entrepreneurial process. The data contain potential entrepreneurs, early stage entrepreneurs, established entrepreneurs, and non-entrepreneurs, together with demographic and socio-economic variables. Given that the survey is not carried out for every Caribbean country every year and the full datasets are only made available to the public 3 years after data collection, for completeness and consistency the study used the GEM 2014 APS, which contains data for: Barbados, Belize, Jamaica, Suriname and Trinidad and Tobago. These Caribbean countries provide the most up-to-date and complete GEM APS data that are comparable since all surveys were done in 2014. This allowed the study to obtain a cross-sectional data set for the 5 countries in 2014. Given that the target population is potential entrepreneurs, all persons involved in any stage of entrepreneurial activity including early stage and established entrepreneurs were excluded from the data set.

Methodology

The paper aimed to investigate entrepreneurial intentions in Caribbean SIDS using a socio-cognitive framework. It relied on the 2014 GEM APS survey for the Caribbean. This produced a cross-sectional data set. To this end, the paper first checked if persons with entrepreneurial intentions were different from persons without them. This was done using a difference in means or more accurately proportions test for the cognitive perception variables (take the form of dummy variables). This helped to conclude whether the difference in the sample groups was most likely representative of a meaningful difference between the populations as a whole and if any sample selection bias was going on in terms of the observable variables. These descriptive statistics, however, do not indicate the extent to which the various cognitive perceptions factors were interrelated. The paper then used non-linear regression to identify cognitive perceptions variables associated with the likelihood that an individual has intentions to start a new business venture within three years. The following model was used to estimate the relationship between entrepreneurial intention and individual perceptions, economic opportunity perceptions and socio-cultural perceptions, along with demographic and socio-economic control variables and country fixed effects:

$$Y = f(\text{Age, Gender, Education, Householdincome, Employmentstatus, Rolemodel, Selfconfidence, Riskaversion, Entrepreneurialopportunity, Careerchoice, Respect, Publicmedia.})$$

The probability that an individual with the related social cognitive perceptions and demographic and socio-economic characteristics vector W has entrepreneurial intentions is:

$$Pr(Y = 1|W) = \phi\left(\alpha + \beta' W\right),$$

where Y is a binary variable equal to 1 if an individual is alone or with others, expecting to start a new business, including any type of self-employment, within the next three years and 0 if the individual does not have entrepreneurial intentions. β' is a vector of coefficients including individual, economic and socio-cultural perceptions and demographic and socio-economic factors, as well as country fixed effects. The importance of country context on entrepreneurial decisions is captured by the use of country fixed effects. α is an intercept. $\phi()$ is the standard normal distribution function. The marginal effects were calculated, reported and interpreted in the results. Table 1 provides a complete description of the variables used in the probit regression model.

The GEM manual provides information on data collection, data quality control, description of the main indicators and their interpretations, and an assessment on the validity of GEM measures. A reliability report is also included which calculates the Cronbach's Alphas for each block of questions that is then summarized by a principal components analysis to ensure internal consistency of the data. The number of valid cases for each item is also included in the reliability report. The GEM questionnaire design also ensures statistical confidentiality. These reports were taken into consideration for use of the GEM data by this study.

Results

Descriptive statistics

Table 2 displays demographic and socio-economic and cognitive perceptions summary statistics for the sample. The majority of the respondents were persons below 45 years, with upper secondary school education, in full time employment, and from low-income households. There were slightly more females than males. For individual perceptions 38% of individuals had a role model and 69% had self-confidence in starting a new business, while 27% of persons had a risk-taking attitude. 43% of participants felt that there were good economic opportunities to start a business in the area in which they lived. 68% of persons stated that starting a business is a desirable career choice in their country. 67% believed that entrepreneurs in their country enjoy a high level of status and respect. 65% viewed the public media as highlighting successful businesspersons in their country.

The number and percent of persons with entrepreneurial intention in the total sample and by country are illustrated in Table 3. The table shows that the proportion of persons with entrepreneurial intentions in the Caribbean was relatively low. For the entire sample 17% of persons had business start-up intentions. The number of persons with

Table 1 Description of variables

Variable	Description
Entrepreneurial intention	Dummy variable taking the value 1 if respondent is alone or with others, expecting to start a new business, including any type of self-employment, within the next three years and 0 otherwise
Age	Variable taking the value 1 if respondent is 18–24 years, 2 for 25–34 years, 3 for 35–44 years, 4 for 45–54 years, 5 for 55–64 years, and 6 for more than 65 years
Gender	Dummy variable taking the value 0 for male and 1 for female
Education	Variable taking the value 1 if respondent has no education, 2 for primary school education, 3 for lower secondary school education, 4 for upper secondary school education, 5 for post-secondary/non-tertiary education, 6 for undergraduate tertiary education, and 7 for post-graduate tertiary education
Employment status	Variable taking the value 1 for full time employment, 2 for part time employment, and 3 for retired or student
Household income	Categorical variable taking the value 1 for respondent in low-income household, 2 for middle-income household, and 3 for high-income household
Role model	Dummy variable taking the value 1 if respondent personally knew someone who started a business in the 2 years preceding the survey and 0 otherwise
Self-confidence	Dummy variable taking the value 1 if respondent believed they had the required skills and knowledge to start a business and 0 otherwise
Risk aversion	Dummy variable taking the value 1 if respondent believed fear of failure would prevent them from setting up a business and 0 otherwise
Entrepreneurial opportunity	Dummy variable taking the value 1 if respondent stated they thought there would be good opportunities to start a firm in the area where they live in the next six months and 0 otherwise
Career choice	Dummy variable taking the value 1 if respondent believed that in their country most people consider starting a new business as a desirable career choice and 0 otherwise
Respect	Dummy variable taking the value 1 if respondent agreed that persons successful at starting a new business have a high level of status and respect in their country and 0 otherwise
Public media	Dummy variable taking the value 1 if respondent agreed that they often see stories in the public media about successful new businesses in their country and 0 otherwise

Source: Author's compilation

entrepreneurial intentions, however, differed by country. Jamaica had the highest number of persons with new venture intentions (35%), followed by Trinidad and Tobago (27%), then Barbados (11%), Belize (7%), and Suriname (5%).

Table 4 presents the individual, economic and socio-cultural perceptions across the five SIDS studied. Looking at individual perceptions, Belize leads in terms of persons with the self-confidence (33%), role model (24%) and no risk aversion (38%) to be potential entrepreneurs. This is followed by Suriname with self-confidence (19%), role-model (24%), and no risk aversion (23%). Barbados lags behind for persons with entrepreneurial individual perceptions. Persons with perceptions of entrepreneurial opportunities are highest in Belize and Suriname (27%), followed by Trinidad and Tobago (20%), Jamaica (19%), and Barbados (7%). In Suriname persons with perceptions of entrepreneurship as a good career choice (27%) and respected (28%) is highest, followed by Jamaica (24%) and Belize (21%). Perceptions of public media support for entrepreneurship is highest in Belize (23%), followed by Barbados and Trinidad and Tobago (10%), Jamaica (8%), and Suriname (5%).

Table 5 displays the mean or more specifically the proportion of ones for the cognitive perception variables given that they take the form of dummy variables. It also gives the

Table 2 Summary statistics

Variable	Frequency	Total	%
Demographic			
Age			
18–24	1479	5785	25
25–34	1388		24
35–44	1096		19
45–54	841		15
55–64	610		11
More than 65	371		6
Gender			
Male	3105	5785	46
Female	2680		54
Education status			
None	432	5785	7
Primary	775		13
Lower secondary	552		10
Upper secondary	2066		36
Post-secondary/non-tertiary	1120		19
Undergraduate tertiary	838		14
Post-graduate tertiary	2		1
Employment			
Full-time	3201	5785	55
Part-time	1255		22
Retired/student	1329		23
Household income			
Low	2641	5785	46
Middle	1814		31
High	1330		23
Individual perceptions			
Role-model	2201	5785	38
No role model	3584		62
Self-confidence	3976	5785	69
No self-confidence	1809		31
Risk aversion	4204	5785	73
No risk aversion	1581		27
Economic perceptions			
Entrepreneurial opportunity	2475	5785	43
No entrepreneurial opportunity	3310		57
Socio-cultural perceptions			
Good career choice	3953	5785	68
Not good career choice	1832		32
Respected	3878	5785	67
Not respected	1906		33
Public media	3735	5785	65
No public media	2050		35

Source: Author's compilation based on GEM data

Chi-squared test for differences for persons with and without entrepreneurial intention. The comparative descriptive evidence showed that major differences between the

Table 3 Entrepreneurial intention

Country	Entrepreneurial intention			
	Yes		No	
	Number	%	Number	%
Barbados	70	11	562	89
Belize	108	7	1386	93
Jamaica	446	35	818	65
Suriname	73	5	1289	95
Trinidad and Tobago	278	27	755	73
Total sample	975	17	4810	83

Source: Author's compilation based on GEM data

Table 4 Perceptions by country, number of persons and percent

Variable	Barbados		Belize		Jamaica		Trinidad		Suriname	
	No	%	No	%	No	%	No	%	No	%
Individual perceptions										
Role-model	226	10	722	33	429	19	396	18	428	19
No role model	406	11	772	22	933	26	637	18	836	23
Self-confidence	325	8	958	24	1077	27	667	17	949	24
No self-confidence	307	17	536	30	285	16	366	20	315	17
Risk aversion	453	11	886	21	1179	28	783	19	903	21
No risk aversion	179	11	608	38	183	12	250	16	361	23
Economic perceptions										
Entrepreneurial opportunity	175	7	670	27	473	19	499	20	658	27
No Entrepreneurial opportunity	457	14	824	25	889	27	534	16	606	18
Socio-cultural perceptions										
Good career choice	309	8	837	21	948	24	787	20	1072	27
Not good career choice	323	18	657	36	414	23	246	13	192	10
Respected	339	9	796	21	944	24	721	19	1079	28
Not respected	293	15	698	37	418	22	312	16	185	10
Public media	355	10	849	23	291	8	360	10	195	5
No public media	277	14	645	31	1071	52	673	33	1069	52

Source:Author's compilation based on GEM data

sample of persons with entrepreneurial intentions versus persons without exist across the three categories of social cognitive perceptions.

The cognitive approach highlights that persons with entrepreneurial intentions compared to persons without are more likely to have a business role model, have business confidence and be a risk taker (Kolvereid, 1996; Krueger et al., 2000; Liñán & Chen, 2009). 41% of persons with entrepreneurial intention had a role model compared to 37% of persons without, and the difference was statistically significant. For self-confidence, 77% of participants interested in starting a business had confidence in themselves to do so versus 67% of persons who had no intention to start a business. The difference was statistically significant. Persons aiming to start a business had lower risk perceptions than persons unwilling to do so (22% versus 28%). The difference was statistically significant.

Table 5 Perceptions and entrepreneurial intention

Perception	Entrepreneurial intention	No entrepreneurial Intention	Entrepreneurial intention versus No entrepreneurial intention
	Mean	Mean	χ2-test
Individual perceptions			
Role-model	0.4123077	0.3740125	0.0247**
Self-confidence	0.7723077	0.6700624	0.0000***
No risk aversion	0.2205128	0.2839917	0.0000***
Economic perceptions			
Entrepreneurial opportunity	0.5712821	0.3987526	0.0000***
Socio-cultural perceptions			
Career choice	0.7938462	0.6609148	0.0000***
Respected	0.7466667	0.6550936	0.0000***
Public media	0.734359	0.6276507	0.0000***

Source: Author's compilation based on GEM data

(1) χ2-test column shows the p-values of the test on the equality of proportions. (2) *is statistically significant at the 10 percent level; **at the 5 percent level; ***at the 1 percent level. (3) A p-value of less than 0.05 means that the null-hypothesis can be rejected at an error level of less than 5 percent

The cognitive process makes some persons more sensitive than others to the economic opportunities provided by the market and the available resources (Ardichvili et al., 2003; Liñán et al., 2011; Shane & Venkataraman, 2000). It is therefore expected that persons with entrepreneurial intentions are more likely to recognize economic opportunities than persons who are not interested in entrepreneurship (Hassan et al., 2020). Respondents aspiring to become an entrepreneur saw more economic opportunities for launching an enterprise (57%) than persons unwilling to enter into entrepreneurship (40%) (statistically significant difference).

A more positive perceived social valuation of entrepreneurship in the cognitive approach would lead to increased entrepreneurial intentions (Liñán et al., 2011). 79% of potential business owners stated that entrepreneurship was a desirable career choice in their country, compared to 66% of persons not interested in entrepreneurship. The difference in both groups was statistically significant. 75% of persons with entrepreneurial intentions believed that entrepreneurs enjoyed a high level of respect and status in their country versus 66% for persons with no entrepreneurial intention (statistically significant difference). Finally, 73% of respondents willing to become entrepreneurs were of the opinion that the public media positively portrays businesspersons in their country. The corresponding figure for individuals lacking entrepreneurial intentions was 63%. The difference between both groups was statistically significant.

Econometric results

The probit model regression results are presented in Tables 6 and 7. Five models were estimated. Each group of perception variables together with control variables were introduced in a separate model. A base model with only control variables was also estimated. A final model with control variables and all perception variables was also estimated. Table 6 treats the control variables as categorical variables in the

Table 6 Probit regression results

Variables	(1)	(2)	(3)	(4)	(5)
Age (2)	0.145**	0.134**	0.143**	0.148**	0.135**
	(0.0619)	(0.0620)	(0.0621)	(0.0619)	(0.0623)
Age (3)	0.0753	0.0606	0.0807	0.0830	0.0734
	(0.0671)	(0.0673)	(0.0673)	(0.0671)	(0.0676)
Age (4)	0.0408	0.0224	0.0310	0.0453	0.0204
	(0.0713)	(0.0716)	(0.0717)	(0.0715)	(0.0720)
Age (5)	− 0.140	− 0.145*	− 0.150*	− 0.131	− 0.146*
	(0.0854)	(0.0858)	(0.0860)	(0.0857)	(0.0865)
Age (6)	− 0.591***	− 0.566***	− 0.567***	− 0.587***	− 0.548***
	(0.164)	(0.163)	(0.165)	(0.163)	(0.164)
Gender	0.0682	0.0557	0.0476	0.0669	0.0390
	(0.0442)	(0.0444)	(0.0445)	(0.0443)	(0.0447)
Education (2)	− 0.138	− 0.166	− 0.130	− 0.143	− 0.159
	(0.123)	(0.123)	(0.123)	(0.122)	(0.123)
Education (3)	0.272**	0.227*	0.289**	0.276**	0.251**
	(0.124)	(0.125)	(0.125)	(0.124)	(0.125)
Education (4)	0.232**	0.187*	0.243**	0.235**	0.207*
	(0.111)	(0.111)	(0.112)	(0.111)	(0.112)
Education (5)	0.226*	0.175	0.234**	0.227*	0.190
	(0.116)	(0.117)	(0.117)	(0.116)	(0.117)
Education (6)	0.259**	0.208*	0.286**	0.276**	0.254**
	(0.119)	(0.119)	(0.120)	(0.119)	(0.120)
Employment (2)	− 0.135**	− 0.122**	− 0.138**	− 0.134**	− 0.125**
	(0.0543)	(0.0544)	(0.0545)	(0.0543)	(0.0547)
Employment (3)	− 0.615***	− 0.614***	− 0.606***	− 0.629***	− 0.618***
	(0.0753)	(0.0756)	(0.0758)	(0.0754)	(0.0762)
Income (2)	− 0.168***	− 0.180***	− 0.172***	− 0.172***	− 0.183***
	(0.0644)	(0.0647)	(0.0648)	(0.0644)	(0.0650)
Income (3)	− 0.0798	− 0.0917	− 0.0814	− 0.0732	− 0.0849
	(0.0668)	(0.0671)	(0.0670)	(0.0669)	(0.0672)
Role model		0.0773*			0.0530
		(0.0447)			(0.0451)
Self-confidence		0.166***			0.139***
		(0.0501)			(0.0506)
Risk aversion		− 0.153***			− 0.130**
		(0.0508)			(0.0512)
Entrepreneurial opportunity			0.276***		0.243***
			(0.0436)		(0.0443)
Career choice				0.117**	0.102*
				(0.0527)	(0.0530)
Respected				− 0.00238	− 0.0197
				(0.0503)	(0.0507)
Public media				0.0961*	0.0754
				(0.0509)	(0.0514)
Constant	− 0.604***	− 0.658***	− 0.749***	− 0.764***	− 0.892***
	(0.130)	(0.135)	(0.133)	(0.140)	(0.146)
Observations	5780	5780	5780	5780	5780
Likelihood ratio	846.82	876.51	886.89	858.24	915.54
Log-likelihood	− 2197.929	− 2183.084	− 2177.894	− 2192.223	− 2163.571
Pseudo-R^2	0.1615	0.1672	0.1692	0.1637	0.1746
AIC	4435.858	4412.168	4397.789	4430.445	4381.141
BIC	4569.101	4565.398	4537.694	4583.675	4561.02

Table 6 (continued)

Source: Author's compilation based on GEM data

(1) Coefficients reported are the log odds ratio. (2) Robust standard errors in parentheses. (3) *Coefficient is statistically significant at the 10 percent level; **at the 5 percent level; ***at the 1 percent level.(4) Control variables treated as categorical

Table 7 Probit regression results

Variable	(1)	(2)	(3)	(4)	(5)
Age	− 0.0613***	− 0.0617***	− 0.0617***	− 0.0594***	− 0.0605***
	(0.0156)	(0.0157)	(0.0157)	(0.0157)	(0.0158)
Gender	0.0395	0.0239	0.0194	0.0375	0.00760
	(0.0429)	(0.0431)	(0.0432)	(0.0430)	(0.0434)
Education	0.0586***	0.0494***	0.0629***	0.0614***	0.0569***
	(0.0172)	(0.0174)	(0.0173)	(0.0172)	(0.0175)
Employment status	− 0.328***	− 0.321***	− 0.324***	− 0.334***	− 0.321***
	(0.0305)	(0.0306)	(0.0307)	(0.0305)	(0.0308)
Household income	− 0.0431	− 0.0496	− 0.0445	− 0.0403	− 0.0472
	(0.0334)	(0.0336)	(0.0335)	(0.0335)	(0.0337)
Role model		0.0868*			0.0630
		(0.0445)			(0.0448)
Self-confidence		0.174***			0.148***
		(0.0496)			(0.0502)
Risk aversion		− 0.153***			− 0.130**
		(0.0505)			(0.0508)
Entrepreneurial opportunity			0.283***		0.249***
			(0.0433)		(0.0439)
Career choice				0.119**	0.101*
				(0.0523)	(0.0526)
Respected				− 0.0256	− 0.0436
				(0.0499)	(0.0503)
Public media				0.0772	0.0551
				(0.0506)	(0.0510)
Observations	5785	5785		5785	5785
Likelihood ratio	789.04***	821.62***	831.81***	798.61***	861.23***
Log-likelihood	− 2227.190	− 2210.898	− 2205.803	− 2222.402	− 2191.096
Pseudo-R^2	0.1505	0.1567	0.1586	0.1523	0.1642
AIC	4474.379	4447.795	4433.606	4470.804	4416.192
BIC	4541.004	4534.408	4506.894	4557.417	4529.455

Source: Author's compilation based on GEM data

(1) Coefficients reported are the log odds ratio. (2) Robust standard errors in parentheses. (3) *Coefficient is statistically significant at the 10 percent level; **at the 5 percent level; ***at the 1 percent level. (4) Control variables treated as continuous

regression, while Table 7 treats the control variables as continuous. The results from both tables are similar. This may indicate that a linear relationship within the control variables categories holds. Tables 6 and 7 column (1) gives the regressions results for the model with demographic and socio-economic/control variables only. Model 2 is shown in Tables 6 and 7 column (2), which includes socio-economic and individual perceptions variables. Tables 6 and 7 column (3) contains the results for socio-economic and economic opportunity perceptions variables. The results for model 4

are displayed in Tables 6 and 7 column (4) and comprise socio-economic and socio-cultural perceptions variables. Lastly, Tables 6 and 7 column (5) presents the results for the demographic and socio-economic variables, along with the three sets of social cognitive perceptions.

The estimated coefficients, which provide the log odds ratio suggest that individual, economic opportunity and socio-cultural perceptions affect entrepreneurial intentions in Caribbean SIDS. More specifically, Self-confidence, Risk aversion, Entrepreneurial opportunity, and Career choice have statistically significant coefficients across the models while Role model was statistically significant in Model 2. The control variables show that Age, Education, and Employment status were also statistically significant. The goodness-of-fit statistics give an overall indication that the models performed well. The last model which included socio-economic variables and the three categories of perception variables, however, appear to offer the best fit to the data. A multicollinearity test was also conducted on the independent variables and was satisfactory.

Table 8 presents the corresponding marginal effects from the probit models for ease of interpretation of the coefficients. A comparison of the marginal effects for the model containing the three groups of perceptions variables and control variables can be conducted using the results shown in Column (5). For individual perceptions, a belief that an individual has the required skills and knowledge to successfully start a business increased entrepreneurial intention by about 3%. A respondent who believed that fear of failure would prevent him/her from setting up a business reduced entrepreneurial intention by 2.62%. Looking at entrepreneurial opportunity, an individual's perception of the existence of entrepreneurial opportunities to start a firm in their area of residence increased entrepreneurial intention by 5.28%. Entrepreneurship viewed as a good career choice positively affected business start-up intention by 2.05%. An analysis of the demographic and socio-economic variables revealed that younger persons were 1.26% more likely to display a willingness to start a new venture. Additionally, a higher level of education increased the chance of persons wanting to start a business by 1.18%. Full-time employment positively affected a person's desire to set up a firm by 6.67%.

As a word of caution the cross-sectional nature of the study design does not permit causal generalizations to be made. The results nonetheless underscore the importance of individual, entrepreneurial opportunity, and socio-cultural perceptions as vital factors promoting entrepreneurial intentions and ultimately new business activity in the region from which recommendations can be drawn.

Discussion

The findings demonstrate that social cognitive variables play an important role in affecting entrepreneurial intentions in the region. Thus, studies on entrepreneurship must recognize the role of social cognitive factors in the formation of entrepreneurial intentions. The results are also consistent with past research for the Caribbean, although the data and methodology used differed (Devonish et al., 2010; Esnard, 2010; Mohan et al., 2018).

The study established that higher self-confidence and lower risk aversion were positively related to entrepreneurial intentions. Relatedly, Mohan et al. (2018) found that in the Caribbean self-confidence and a risk-taking attitude positively affected early stage

Table 8 Probit regression results, marginal effects

Variable	(1)	(2)	(3)	(4)	(5)
Age	− 0.0129***	− 0.0129***	− 0.0128***	− 0.0125***	− 0.0126***
	(0.00328)	(0.00328)	(0.00327)	(0.00329)	(0.00328)
Gender	0.00832	0.00500	0.00403	0.00791	0.00158
	(0.00907)	(0.00905)	(0.00900)	(0.00908)	(0.00902)
Education	0.0123***	0.0103***	0.0131***	0.0129***	0.0118***
	(0.00362)	(0.00363)	(0.00359)	(0.00362)	(0.00362)
Employment status	− 0.0691***	− 0.0671***	− 0.0673***	− 0.0703***	− 0.0667***
	(0.00623)	(0.00623)	(0.00619)	(0.00625)	(0.00623)
Household income	− 0.00908	− 0.0104	− 0.00926	− 0.00850	− 0.00979
	(0.00703)	(0.00703)	(0.00697)	(0.00705)	(0.00699)
Role model		0.0184*			0.0132
		(0.00953)			(0.00947)
Self-confidence		0.0350***			0.0299***
		(0.00966)			(0.00979)
Risk aversion		− 0.0308***			− 0.0262***
		(0.00977)			(0.00986)
Entrepreneurial opportunity			0.0603***		0.0528***
			(0.00941)		(0.00949)
Good career choice				0.0244**	0.0205*
				(0.0105)	(0.0105)
Respected				− 0.00543	− 0.00912
				(0.0106)	(0.0106)
Public media				0.0161	0.0113
				(0.0104)	(0.0104)
Observations	5785	5785		5785	5785
Wald	789.04***	821.62***	831.81***	798.61***	861.23***
Log-pseudo likelihood	− 2227.190	− 2210.898	− 2205.803	− 2222.402	− 2191.096
Pseudo-R^2	0.1505	0.1567	0.1586	0.1523	0.1642
Observed probability	0.1684538	0.1684538	0.1684538	0.1684538	0.1684538
Predicted probability (values at mean)	0.1290781	0.1281165	0.126958	0.1292043	0.1265534

Source: Author's compilation based on GEM data

(1) Coefficients reported are marginal effects. (2) Robust standard errors in parentheses. (3) *Coefficient is statistically significant at the 10 percent level; **at the 5 percent level; ***at the 1 percent level

entrepreneurship. Devonish et al. (2010) established that self-confidence encouraged entrepreneurial intentions. Esnard (2010) concluded that gender acted as a weak determinant of self-confidence. The Caribbean literature on entrepreneurship often links self-confidence and risk taking to the education system. Ryan and Barclay (1992) and Ryan (1995) expressed that in Trinidad and Tobago the education system created educated persons that are risk averse and do not feel prepared to become business owners, especially Black students. These persons are consumption oriented and are not interested in becoming business owners (Ryan & Barclay, 1992). Devonish et al. (2010) stated that Caribbean educators should not only focus on enhancing the skills and knowledge of university students, but also their desirability and feasibility for becoming entrepreneurs, provide internship opportunities, and have successful entrepreneurs share their experiences in the classroom and have internship opportunities for students to appreciate

entrepreneurship. Reform of the education system may therefore improve business self-confidence and risk taking in the Caribbean. Also, the family structure does not inculcate entrepreneurial knowledge and skills and risk-taking behavior as children are not encouraged to take over their family business (Boxill, 2003; Ryan, 1995; Ryan & Barclay, 1992).

The study found weak evidence that knowing someone who owned a business influenced a person's willingness to start a new venture. Mohan et al. (2018) on the other hand found that role models positively affected nascent entrepreneurship. Caribbean scholars do highlight a lack of community and support among entrepreneurs, which may reduce the opportunity for mentoring. Boxill (2003) in a study of Jamaica purported that the children of Black businesspeople are not encouraged to take over their family business but rather pursue higher education. Likewise, Ryan and Barclay (1992) and Ryan (1995) found weak business role models from the business community, the community in which people lived, and even within families. The education system also provides little opportunity for students to engage with entrepreneurs as part of a mentoring program (Devonish et al., 2010). The Caribbean should therefore seek ways to improve role modeling, mentoring and networking to support new venture intentions that would ultimately generate more optimistic perceptions about the entrepreneurial experience among potential entrepreneurs in the region.

The level of entrepreneurial activity in a country tends to be high for rich and poor countries, while middle-income countries such as Caribbean SIDS tend to have less entrepreneurially active people. This paper showed that the perception of entrepreneurial opportunity enhances entrepreneurial intentions, akin to the findings by Mohan et al. (2018). Studies in the region indicate there is generally a perceived lack of opportunities for entrepreneurship and persons are often forced to become entrepreneurs because of a lack of employment and to escape poverty (Mohan et al., 2018; Skeete et al., 2007). Caribbean businesses are also characterized by a large number of informal SMEs owned and managed by women and other marginalized groups with limited opportunities for growth (World Bank, 2014). According to Skeete et al. (2007), improvements ofthe following contextual factors may improve the perception of entrepreneurial prospects in the region: access to finance, training, tax benefits, and improvements in the ease of starting a business. Knight and Hossain (2008) also contended that improvements in the micro-financing sector may improve entrepreneurial opportunity prospects.

In the group of socio-cultural factors, entrepreneurship as a desirable career choice was the only significant variable, while empirical support for entrepreneurship as a desirable career choice and affirmative public media portrayal was low. There is some indication that there is a lack of positive attitudes towards business creation and social legitimation of entrepreneurship in the region. Caribbean culture does not foster entrepreneurial norms and motivations and consequently the society does not value and respect entrepreneurs and entrepreneurial activity (Knight & Hossain, 2008; Ryan, 1995; Ryan & Barclay, 1992). According to Ryan (1995) Afro-Trinidadians retain a pre-slavery value system that does not regard trade and commerce as desirable activities, and are even considered to be subversive in the social system. Knight and Hossain (2008) identified the negative social psychological effects of colonialism, slavery, and plantation economic structures, and relatively individualistic culture, and a history of distrust and

suspicion as reducing entrepreneurship in the region. Additionally, the education system reinforces these values as greater emphasis is placed on achieving high levels of education rather than business ownership (Danns and Mentore, 1995). Within the family structure there is also a lack of a supportive culture towards entrepreneurship and entrepreneurial activity as children as not encouraged to take over family businesses (Boxill, 2003; Ryan, 1995; Ryan & Barclay, 1992).

While the role played by socio-cognitive perceptions in the Caribbean in influencing entrepreneurial intention makes policymaking challenging, there is room for government intervention in influencing entrepreneurial intentions. Government policy can alter an individual's behavior through incentives, although inherent individual characteristics cannot be changed easily. The provision of financial assistance and microfinancing, as well as building entrepreneurial capabilities through training, tax benefits for small businesses, and a reduction of intention for start-up bureaucracy can enhance positive perceptions among potential entrepreneurs (Knight & Hossain, 2008; Skeete et al., 2007). Governments can also provide monetary and non-monetary incentives to existing entrepreneurs as a means of developing and maintaining positive entrepreneurial perceptions in the population (Devonish et al., 2010). Additionally, governments can revamp the education curriculum to build entrepreneurial feasibility and desirability and expand opportunities for business internships (Devonish et al., 2010). There is also a need for policy reform that can establish a coherent large-scale national entrepreneurial framework that provides a range of institutional, economic, and socio-cultural approaches to foster positive attitudes towards business ownership and entrepreneurial activity in the Caribbean (Esnard, 2010; Mohan et al., 2018).

Conclusion

This study used a social cognitive framework of perceptions to empirically investigate entrepreneurial intentions in Caribbean SIDS. Given the dearth of entrepreneurial studies in island states, the paper improves our understanding of intention for business start-up in the region, despite the use of cross-sectional data and the inability to establish casual relationships. The paper indicates what factors motivate business start-up intentions, which can be developed in island economies through appropriate planning and policy. This may help to advance a better understanding of why small islands generally have a lower number of successful entrepreneurs and ways forward to improve private sector development.

The results suggest that individual, economic opportunity, and socio-cultural perceptions affect entrepreneurial intentions even after controlling for demographic and socio-economic characteristics and country fixed effects. Among individual perceptions self-confidence in running a business and a willingness to take risks improved entrepreneurial intentions. Empirical support for having a role model was weak. A person's perception of future entrepreneurial opportunities and their intentions to start a business were positively related. Lastly, for socio-economic perceptions entrepreneurship viewed as a good career choice positively affected a person's intent to become a business owner. There was little empirical support for status and respect by the society for business owners and public media appreciation. The demographic variables demonstrated that

younger persons were keener to display entrepreneurial aspirations, as well as persons with a higher level of education, and persons that were employed.

Entrepreneurship needs to become attractive at an individual level in the Caribbean and embraced by the society. This may be encouraged by developing the entrepreneurial ecosystem, which includes all elements of the entrepreneurial process that encourage the choice of a person to become an entrepreneur, and the probabilities of their future success. However, these issues are outside of the scope of what the GEM data allow for investigation and require future investigation to inform policies on entrepreneurship in Caribbean SIDS. The development of cross-sectional time series data set for the region would also allow for the adoption of more robust methodological frameworks and analytical models, and allow for the determination of causal relationships between entrepreneurial intentions and individual, economic opportunity, and socio-economic perceptions.

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