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# Determining factors for the creation of innovation-based ventures

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## Abstract

This research aims to determine the impact of internal and external factors of Social Capital, Entrepreneurial Self-Efficacy, and Person-Entrepreneurship Fit in the transition of nascent entrepreneurs toward venture creation. For the development of this research, a sample of 500 entrepreneurs located in Colombia who are creating a company was taken. The research methodology is hypothetical-deductive with a cross-sectional multiple causal correlation design with an explanatory scope and is divided into three stages: first, an exploratory analysis of the data relating to the study variables is carried out. Second, a principal component analysis is carried out. Finally, the third stage is the modelling using the Partial Least Squares-Path Modelling methodology. Among the most relevant findings, it is found that Social Capital is significant in explaining Person-Entrepreneurship Fit. In turn, Social Capital and Person-Entrepreneurship Fit are significant in explaining Entrepreneurial Self-Efficacy. Finally, the construct of Venture Creation is only significantly explained by Person-Entrepreneurship Fit. Consequently, it can be concluded that the influence of social and psychological variables within the business cycle is significant, and models and strategies must consider these elements to design tools that support the optimal development of start-ups within the business cycle, so that they consolidate as stable ventures. This study contributes to filling the research gap by focusing on the factors determining the entrepreneurial process beyond its initial phase.

**Keywords:** Entrepreneurship, Partial Least Squares, Venture creation, Start-up, Entrepreneurial efficacy

## Introduction

Colombia has a relatively high rate of unemployment. According to the National Administrative Department of Statistics (Departamento Administrativo Nacional de Estadística—DANE), the unemployment rate in January 2020 was 13% at the national level, and the situation is even worse among young people, with an unemployment rate of 17.6%. Consequently, productivity and competitiveness indicators in Colombia have fallen consecutively in the last decade (Casas & González-Ramírez, 2016), which indicates a lack of innovation capabilities that increase the added value of the economy. One potential solution is the development of new, innovation-based ventures that generate jobs and create formal employment among the young population. Academia can provide findings on the phenomenon of entrepreneurship from a social

perspective, making it possible to understand the individual and their environment in the transition toward the gestation of new businesses. However, contemporary definitions of entrepreneurship or approaches to entrepreneurship research focus on its emergence, i.e., the stage of conception. While this has been crucial to analyzing the phenomenon, given the wealth of information and abundance of material about this stage, Davidsson and Honig (2003) suggest that studies should address aspects in earlier stages, such as how opportunities are identified and acted upon, or how new organizations emerge. It has also been identified that business cycle research has primarily focused on businesses that can survive and grow, i.e., studies focus on the stages of infancy and adolescence. However, if the process is analyzed as a single system, it is clear that most entrepreneurial efforts do not lead to the founding of new organizations (Aldrich & Martinez, 2007).

However, there is very little information on the number and characteristics of nascent entrepreneurs who attempt to create a start-up and the likelihood that these attempts will lead to the gestation of new businesses. While it is possible to see the results of entrepreneurial activity in the form of venture creation and innovations, there is little information on how these new businesses came into existence. Studies of entrepreneurship demonstrate the successes of entrepreneurial activity, but there is little insight into why these particular entrepreneurial efforts succeeded, while other efforts failed (Reynolds et al., 2004a, 2004b). One of the arguments put forward by the authors for more research in this context is the problem of identifying people who are starting businesses and are engaged in entrepreneurial activities to create a company potentially.

Starting a new business is challenging due to multiple internal and external limiting factors (Weiss et al., 2019), or as Kannadhasan (2018) argues, new venture creation is the result of the interaction between the entrepreneurs' external environments and internal factors. Understanding those factors in the gestation phase enabling entrepreneurs to move toward the founding of their companies, makes it possible to strengthen the state of the art in this business cycle phase.

Identifying and analyzing the factors that can improve entrepreneurial performance has become a key topic in the management and entrepreneurship literature. Understanding how and why only some business ventures are successful enough to become valid drivers of wealth creation and economic and social development is even more critical in developing countries (Vila et al., 2013). Accordingly, there is great merit in discovering how to help nascent entrepreneurs avoid being "stillborn" (P. Reynolds et al., 2004a, 2004b).

To identify critical aspects that facilitate the transition toward the development of start-ups, Drnovšek et al. (2010), studying the writings of Gatewood, argue that "self-efficacy influences the development of attributions of nascent entrepreneurs' for creating new businesses."

Based on social cognitive theory, Bandura (1982) developed the theory of self-efficacy to explain the variability of individuals in goal attainment. Individuals with different levels of self-efficacy beliefs are expected to differ systematically in the amount of effort they expend on goal-directed tasks, the extent to which they engage in coping activities to overcome impediments, and the degree to which they persistently pursue goals despite obstacles.

The development of self-efficacy theory in psychology and its contribution to entrepreneurship led to the development of the concept of entrepreneurial self-efficacy (ESE). Drnovšek et al. (2010) state that “ESE involves individuals’ beliefs regarding their capabilities for attaining success and controlling cognitions for successfully tackling challenging goals during the business start-up process.”

Along the same lines, McGee et al. (2009) define entrepreneurial self-efficacy as “a construct that measures a person’s belief in their ability to launch an entrepreneurial venture successfully.”

In turn, Hsu et al. (2019) argue that, despite having a high level of entrepreneurial self-efficacy, if entrepreneurship does not meet their personal needs, there will be no intention to start a business. The authors study the boundary discussed above through the person–environment fit (P–E Fit) theory; consequently, these authors develop a new construct called person-entrepreneurship fit (P-ENT Fit). This finding moderates the relationship between entrepreneurial self-efficacy and entrepreneurial intention and should be considered when understanding the factors that influence an individual to transition toward developing a start-up.

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The intention to become an entrepreneur is a question of individual personality and the individual’s interaction with the social environment (Chuluunbaatar et al., 2011). In this respect, social capital as an external factor is a determinant for entrepreneurs to transition toward creating new businesses (Capelleras et al., 2010; De Carolis et al., 2009; Eriksson & Rataj, 2019; Kannadhasan et al., 2018; Kee & Khin, 2019; Klyver & Schenkel, 2013; Kreiser et al., 2013; Myint et al., 2005; Vila et al., 2013; Westlund et al., 2014; Xu, 2011, 2016).

Analyzing the phenomenon and the contributions of different authors, the research’s objective is to describe the association of determining factors that facilitate the transition toward the gestation of start-up companies in innovation-based entrepreneurship programs in Colombia. Consequently, the research question is defined as follows:

How do social capital, entrepreneurial self-efficacy, and person-entrepreneurship fit positively impact the transition of nascent entrepreneurs toward the creation of start-ups?

### **Literature review**

Research in the field of venture creation is not a recent topic. These studies attempt to explain why start-ups fail or succeed. This section presents the elements, variables, and techniques used over time to respond to the question above.

The origins of this research can be traced back to the 1970s and 1980s. Cooper and Bruno (1977) designed a statistical model that takes as its input the calculated value of teamwork, cooperation, and the level of education and experience of team members, while the model’s output corresponds to the performance level of the business. Their study took a sample of 250 firms, of which 58% are large organizations and the remaining 42% are small organizations (for this study, the authors define large firms as those with 500 employees and small firms as those with fewer). The model can

identify the variables that have the most significant influence on the final objective, thus offering a way to study corporate behavior.

Fama and Jensen (1983) construct a qualitative model from the agency perspective. Their study attempts to explain which factors are critical for creating a company and affect its survival. The results of this model identify the features of business survival from the viewpoint of a control agency.

Subsequently, Bird (1988) developed a model based on a discovery-oriented study, which attempts to explain the behavior of entrepreneurial ideas. Through 20 interviews with entrepreneurs (seven in service, eight in manufacturing, and five in marketing, with between 4 and 20 years of experience as entrepreneurs), she was able to identify distinct patterns of thinking and behavior. Subsequent analysis of transcripts and observer notes suggests that these patterns are relatively consistent across the entrepreneurs. Bird (1989) develops a second model to complement this study. This second model analyses the interaction between the personal and social context with rational and intuitive thinking while intending to create businesses or new values for existing businesses. According to Bird, the social context comprises the individual's social, political, and economic environment (Turner et al., 1994; Webster & Ward, 2011), while the personal context is constructed through their personal history, personality development, and abilities (Bandura, 2002a; Noonan, 2019). In her conclusion, she argues that an entrepreneur's new intentions will be steeped in uncertainty and result from rational, analytical, and cause-and-effect thought processes or intuitive, holistic, and contextual thinking; these new intentions ultimately become entrepreneurial actions (Lubada et al., 2021; Urban, 2020).

For their part, Kamm et al. (1990), based on the conceptual foundation of the model described by Cooper and Bruno (1977) and studies carried out by Bird (1988), designed a qualitative model of logical relationships that takes as its input responses to a bank of questions that are closely related to teamwork, development, behavior, and entrepreneurial action. In this study, the model results identify the dimensions that have a significant influence on start-ups.

Along the same lines, Mosakowski (1998) builds on the earlier paper and the agency approach of Fama and Jensen (1983), developing an agency model based on the locus of entrepreneurial resources, studying the interaction between entrepreneurial resources, organizational decisions, and business outcomes. In the model results, Mosakowski concludes that the way entrepreneurial resources (e.g., work teams) are established and allocated creates greater uncertainty about the organization's performance than individual action. The author proposes controlling this uncertainty through a risk reduction monitoring system for individual and collective action.

In turn, Shook et al. (2003a) combine the models proposed by Shapero (1982), Bird (1988), and Ajzen (1987) to understand the entrepreneurial intention. The paper brings together the most important variables in each model, such as individual perceptions of feasibility and desirability, and finally, they add a third variable called social support; these variables correspond to the determinants of entrepreneurial intentions. The authors relate entrepreneurial self-efficacy to social support and understand entrepreneurial self-efficacy as a moderator of the relationship between individual perceptions and the development of entrepreneurial intention

(Gielnik et al., 2020). Consequently, these authors develop a measurement tool based on opportunity creation, risk-taking, and belief in one's capabilities.

Along the same lines, De Carolis (2006) develops a qualitative model based on papers by Bandura (2002b) and Bird (1988, 1989). The model involves the link between an individual's external factors (i.e., social capital) and internal factors (i.e., cognitive aspect) and how this link influences entrepreneurial behaviors. In their conclusion, they indicate that entrepreneurial behavior is the result of the interaction of environments (i.e., social networks) and certain cognitive biases in entrepreneurs. De Carolis proposes that both individual cognition and social capital are important for understanding entrepreneurial behavior. She further suggests a nexus between the presence of lucrative opportunities and the presence of entrepreneurial individuals. This nexus influences the link between the variables proposed in the article.

From another perspective, some authors argue that venture creation is influenced by the dimension of social relations and the acquisition and development of abilities during university. Accordingly, Fueglistaller (2006) develops a quantitative model in which he evaluates the intention to create businesses based on the personal context and the university context. The social context comprises variables, such as age, gender, personal goals, and level of innovation, while the university context includes level of study, skills, and abilities. The model explains entrepreneurial intention by analyzing the interaction of those factors and indicates more generally that intention-based models contend that the development of business ideas must precede venture creation. Therefore, understanding actions, attitudes, and behaviours can predict venture creation intention better.

Building on the previous paper, Obschonka et al. (2011) carries out a study that asks the following questions: "What predicts a person's venture creation success throughout their career, such as making progress in the venture creation process and multiple successful venture creations?" To respond to these questions, Obschonka designed a regression analysis model based on prospective and retrospective data from two independent samples of 88 nascent founders and 148 successful founders (the database was collected retrospectively using the Life History Calendar method). The study's conclusion suggests that early entrepreneurial skills in adolescence positively affect the development of the venture creation process (Anwar & Abdullah, 2021). The current human and social capital of nascent founders also has a direct effect but is not a mediator of the effect of early skills. Finally, the data revealed that early entrepreneurial skills in adolescence positively predict habitual entrepreneurship (creation of multiple successful businesses) exhibited over a longer period in the individual's career (specifically, 18 years).

Subsequently, considering the plethora of tools that are used to explain the venture creation process, Schlaegel (2014) identifies the high interest in developing theories that are capable of predicting and explaining an individual's propensity to start a business, as well as explaining the reason for its success or failure. Schlaegel develops a meta-analytic structural equation model to examine the empirical fit of the theory of planned behavior and the entrepreneurial event model. To apply the model proposed in this study, a sample of 123 investigations is used, considering the operational construct, type of publication, publication status, variables used, and model implemented. The paper's conclusion indicates that the theory of planned behavior and the entrepreneurial event model have a moderating role in the environmental conditions of the individual during the venture

creation process. Furthermore, the author asserts that the integrated model provides additional explanatory power and a complete understanding of the process through which entrepreneurial intention develops.

Tracing the trajectory of research on venture creation, Venessar et al. (2014) observe that the vast majority of studies point to the contribution of entrepreneurs collectively but have not examined individual actions. According to the authors, the individual differences of entrepreneurs (e.g., attitudes, behaviours, capabilities, traits, abilities, expertise, cognitive differences, leadership, ethical and moral values) influence the development of entrepreneurial intentions, the pursuit of new opportunities, risk-taking, and decision-making. These authors design a multivariate statistical analysis that attempts to identify the study variables that influence venture creation. The population of the paper was 52,899 students, and they concluded that age, gender, level of studies, field of study, field of action, type of financing, and parents' occupation are the factors that predict entrepreneurial intention. To extend the idea of this study and make a significant contribution, Aragon et al. (2016) develop an experiment with 120,536 individuals from 25 countries. Their study seeks to provide new evidence on how men and women process information in the venture creation decision and on the differences that may arise when making this decision, depending on the level of development of the countries and their institutions. The results indicate that institutions are necessary but not sufficient to achieve quality entrepreneurship and that information processing is different between men and women, as women—regardless of the level of institutional development—process information in a similar way, while men do not.

In turn, FrankhrEldin (2017) develops a logistic regression model to address the problem posed by Bird et al. (2012), which is an evolution of papers previously presented by Bird (1988, 1989). In this study, FrankhrEldin takes emotional intelligence as the main moderator of venture creation, understood as the set of abilities and skills that enable the individual to influence their emotions by adapting to changes in the environment and thus make the correct decisions. This paper concludes that the emotional intelligence of entrepreneurs has a strong effect on new venture creation and explains why some individuals have a greater potential to create new businesses than others. The results indicate that necessity-driven entrepreneurs have a higher internal motivation to create a business, while opportunity-driven individuals have a lower motivation. She also adds that the individual must have the ability to relate and communicate, thus increasing the venture's success.

Furthermore, considering the idea presented in the study carried out by Obschonka (2011), Venessar et al. (2014) on age and entrepreneurial education, and the paper on risk-taking by Shook et al. (2003b), Basinska and Daderman (2018) develop an experiment to examine in young adults during entrepreneurship-related education the relationships between risk-taking and self-efficacy, and the mediating effects of emotions and attitudes (resilience, self-confidence, attentiveness). The method used by the authors was applied to 153 individuals (mean age 22 years), collecting information on risk-taking, general self-efficacy, attitudes, and emotions through questionnaires. The study used a bootstrap analysis with single and multiple mediators, controlled for gender, to estimate the indirect effects of attitudes and emotions on risk-taking and self-efficacy. The authors found that risk-taking was significantly correlated with self-efficacy. The

attitudes of resilience and self-confidence, but not attentiveness, were complete mediators of the relationship between risk-taking and self-efficacy. Based on these findings, the authors argue that self-efficacy may be strengthened in young adults during entrepreneurship-related education and that emotions can lead to an attentive use of resources, including self-efficacy (Newman et al., 2019; Schmitt et al., 2018). In conclusion, these factors may encourage young people to be brave and try new experiences.

Finally, from a new point of view—the psychoanalytic perspective—Metallo et al. (2020) developed a research study to examine the entrepreneurial process for the generation of new enterprises through a psychoanalytical approach. Based on the existing psychoanalytic literature, the manuscript proposes a model to explain the entrepreneurial process that results in people developing ideas and, consequently, moving toward new venture creation. The structure of the model consists of a set of interconnected processes that describe entrepreneurial behavior through the analysis of three stages: dream, business idea, and creation of the new company. The innovation of this study lies in its emphasis on the unconscious mechanisms that encourage new business ventures. The proposed model gives a complete overview of the behavior of entrepreneurs and offers new possibilities for understanding the evolution of the entrepreneurial process.

This section has presented the essential bibliographic references about venture creation from the 1970s to the present day. It has demonstrated how authors have addressed the topic of relating social variables to venture creation models and studies and research on them. Nevertheless, there is no agreement regarding which variables should be used, which are most appropriate for the topic, and which complement entrepreneurial studies. Reaching a consensus would make it possible to propose a structure for the study of the topic that could be used in different investigations while respecting the proportions of the contexts.

### **Methodological design**

Now, to understand the interaction of the variables and the operationalization with the present research, the sections on operationalization of constructs and hypotheses, design of data collection, and operationalization of the study are presented.

### **Operationalization of constructs and hypotheses**

The key theories underpinning the study are summarized as follows:

#### **Venture creation (VC)**

According to the description of the business cycle by Aldrich and Martinez (2007), it can be deduced that venture creation is a stage of entrepreneurship that occurs in the transition from nascent entrepreneur (gestation phase) to fledgling entrepreneur (infancy phase). To identify which stage of the venture creation and process a business is in, the researchers explore whether the entrepreneur is in one of three stages: planning to start a business, engaging in entrepreneurial activities, or newly established (De Carolis et al., 2009). Accordingly, the "Venture creation" variable has two levels: (a) Entrepreneurs with the intention to start a business (engaging in activities or planning to start and newly established) and (b) Entrepreneurs who have abandoned the process or failed.

In this study, venture creation acts as a dependent variable, directly associated with the constructs of social capital, entrepreneurial self-efficacy, and person-entrepreneurship fit.

### **Entrepreneurial self-efficacy (ESE)**

The development of self-efficacy theory in psychology and its contribution to the field of entrepreneurship (Bandura, 1982) led to the development of the concept of “Entrepreneurial Self-Efficacy.” The study of Drnovšek et al. (2010) asserts that “entrepreneurial self-efficacy involves individuals’ beliefs regarding their capabilities to attain goals and control positive and negative cognitions that an entrepreneur has during the process of starting up a business.”

Along the same lines, McGee et al. (2009) define entrepreneurial self-efficacy as “a construct that measures a person’s belief in their ability to successfully launch an entrepreneurial venture.” Based on the literature review presented in Chapter 2, the operational characterization of entrepreneurial self-efficacy is presented based on five dimensions suggested by McGee et al. (2009): (1) Searching dimension (Search), the entrepreneurs’ confidence in their abilities to develop new ideas and identify opportunities and/or needs; this dimension is related to the entrepreneur’s ability to create and innovate. (2) Planning dimension (Plan), the entrepreneurs’ confidence in their ability to roadmap and conceptualize the business model in terms of market quantification, pricing, investment projection, and marketing strategies. (3) Marshalling dimension (Marsh), the entrepreneurs’ confidence in their ability to convince other people to identify with their business ideas and share their vision or contribute to the needs of their venture. This ability allows entrepreneurs to gather the necessary resources (financing, clients, suppliers, work team, among others) to start their businesses. (4) Implementing-people dimension (People), the entrepreneurs’ confidence in their ability to attract, direct and guide their business’s human resources to scale and move through each phase in the business cycle. This dimension is associated with the entrepreneurs’ business management skills. (5) Implementing-financial dimension, the entrepreneurs’ confidence in their ability to lead the businesses in the accounting and financial terms, enabling them to manage and raise sufficient funds to continue to grow the company. This dimension is associated with the entrepreneurs’ business management skills.

Therefore, by associating entrepreneurial self-efficacy with new venture creation, after conceptualizing its dimensions, the following hypotheses are established:

H<sub>1</sub> In nascent entrepreneurs, the searching dimension of entrepreneurial self-efficacy is positively associated with new venture intention or creation.

H<sub>2</sub> In nascent entrepreneurs, the planning dimension of entrepreneurial self-efficacy is positively associated with new venture intention or creation.

H<sub>3</sub> In nascent entrepreneurs, the marshalling dimension of entrepreneurial self-efficacy is positively associated with new venture intention or creation.

H<sub>4</sub> In nascent entrepreneurs, the implementing-people dimension of entrepreneurial self-efficacy is positively associated with new venture intention or creation.

H<sub>5</sub> In nascent entrepreneurs, the implementing-financial dimension of entrepreneurial self-efficacy is positively associated with new venture intention or creation.



### Social capital (SC)

Social capital is defined by Nahapiet and Ghoshal (1998) as the “sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit” p. 243. This construct has been associated with venture creation and, in this regard, the study of Kannadhasan et al. (2018), based on Leana and Van Buren (1999); Adler and Kwon (2002), states that social capital not only facilitates the information, but it also accelerates the timing, relevance, and quality information, which is vital to exploit the opportunity and to start a new venture. The construct of social capital is described in three dimensions (Nahapiet & Ghoshal, 1998) and is adopted to analyze entrepreneurs and their venture creation process: (1) Structural social capital, the overall network of entrepreneurs, and the nature of the connection between the members of that network. (2) Relational social capital, the capacity for links and the development of personal relationships that entrepreneurs can have with the members of the network of contacts they have created through their interactions. (3) Cognitive social capital, the resources that encourage collective responsibility and action among the members of the entrepreneur’s network.

Based on this theoretical framework, as well as Kannadhasan et al. (2018) findings that relational capital is not significant in venture creation intention, the following hypotheses are postulated:

H<sub>6</sub> In nascent entrepreneurs, structural social capital is positively associated with new venture intention or creation.

H<sub>7</sub> In nascent entrepreneurs, relational social capital is not positively associated with new venture intention or creation.

H<sub>8</sub> In nascent entrepreneurs, cognitive social capital is positively associated with new venture intention or creation.

### Person-entrepreneurship fit (PEF)

Person-entrepreneurship fit is understood as the satisfaction of personal needs through venture creation. This construct moderates the relationship between entrepreneurial self-efficacy and the venture creation process. It involves a strong perception of fit with entrepreneurship, which impacts the decision about whether or not to start a business (Hsu et al., 2019). Based on the above description, the following hypotheses are proposed:

H<sub>9</sub> In nascent entrepreneurs, PEF is positively associated with new venture intention or creation.

H<sub>10</sub> In nascent entrepreneurs, PEF positively moderates the relationship between the dimensions of entrepreneurial self-efficacy and new venture intention or creation.

According to the study by Kannadhasan et al. (2018), social capital was positively related to the mediator of self-efficacy. Given that the present study establishes different dimensions to measure entrepreneurial self-efficacy, the following hypotheses are posited:

H<sub>11</sub> In nascent entrepreneurs, the dimensions of social capital positively moderate the relationship between the dimensions of entrepreneurial self-efficacy and new venture intention or creation.

Consequently, the hypothetical research model is presented (see Fig. 1).

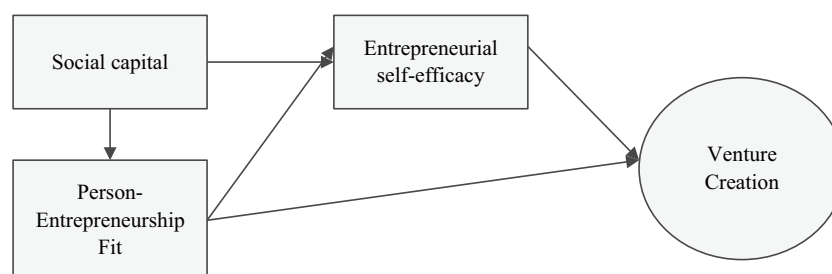
### Partial Least Squares–Path modelling (PLS–PM)

Partial Least Squares–Path modelling (PLS–PM) is a statistical data analysis methodology that combines the concepts of regression modelling, structural equation modelling, and cross-tabulation analysis methods.

Three approaches to the PLS–PM concept are identified in the literature. First, PLS–PM is conceived as a partial least squares approach to structural equation modelling, and it is thus common in the literature to use the terms “Path Modelling” and “Structural Equation Modelling (SEM)” interchangeably. However, for Götz et al. (2010), the concept of PLS–PM is much broader, as, to create the variable blocks of a model, it is necessary to establish prior theoretical knowledge of the phenomenon under analysis; accordingly, each variable block is considered to be a theoretical concept represented in the form of a latent variable. One of the differences between structural models and PLS models is the covariance analysis approach present in structural models (Ondé & Alvarado, 2018); PLS–PM models have a broader range of applications due to the absence of a fit to a known statistical distribution.

One of the advantages of PLS–PM models is the possibility of graphically representing the relationships between the variables that comprise the model through a directed graph. Consequently, a PLS–PM can be conceived as a network of variables in which the arcs (arrows) are assumed to represent a cause–effect relationship. It is assumed that the information provided by the variables flows through the network. The main objective is thus to quantify the relationships between the variables in the network. Along the same lines, assuming that each variable can be represented as a combination of other variables, PLS–PM quantifies the relationships between variables by considering the network to be a system of multiple interconnected linear regressions.

Furthermore, two essential concepts must be understood to implement the methodology: latent and manifest variables. There are different social phenomena in which the variable of interest cannot be observed or measured directly. These situations are latent variables but are also referred to as constructs, compounds, factors, conceptual and intangible variables in the literature. Specific examples enable a better contextualization



**Fig. 1** Hypothetical research model

of the concept. For example, companies are often interested in identifying “customer satisfaction” in marketing, while education experts are usually interested in improving “academic success.” Industrial engineers are often interested in measuring “perceived quality” in service management. In contrast, manifest variables are actual variables that can be measured and observed; they indirectly measure latent variables. In general, manifest variables are assumed to contain information reflecting one or more latent variable aspects.

Manifest variables are divided into two categories: the reflective category considers that the latent variables cause the manifest variables. In contrast, the formative category considers that the manifest variables form the latent variable. The relations of the latent and manifest variables are shown in Table 1.

### **Designing questionnaire and sampling**

The measurement of the constructs raised in the research is taken through questionnaires derived from the literature review exposed, taking into account the methodology created by Churchill (1979). However, the questionnaire presents three sessions, with single-choice and multiple-choice questions.

In the first session, control variables related to age, gender, geographic location, level of education, previous experience in entrepreneurship, support in incubation, or acceleration programs are established. These items are important, because they allow to compare the results by groups and also to isolate them, as well as to test in the multivariate analysis the relationships of the items and if there is a direct influence on the behavior of business creation. In addition, it is guaranteed that the people who answer the questionnaire are nascent entrepreneurs in this session.

The second session focuses on the characterization of the entrepreneurial self-efficacy construct, addressed in five dimensions and 19 items with a conventional Likert-type scale with five response options that measure a person’s confidence to develop different entrepreneurial activities; the scale is rated from very little to very much. The questionnaire was designed by the researcher McGee et al. (2009) in their studies to measure entrepreneurial self-efficacy among nascent entrepreneurs and was adjusted and validated for the present research.

Finally, the third session has two approaches. The first one characterizes the social capital construct addressed by the three dimensions described in the literature by Nahapiet (1998), the questionnaire for this construct was developed by Kannadhasan et al. (2018) and addressed with 9 items on a seven-response Likert-type scale. The second approach characterizes the Person-Entrepreneurship fit (P-EMP) construct. The questionnaire for this construct was developed by Hsu et al. (2019) and designed with 3 items on a Likert-type scale with five response options. For the questionnaire, two new items were added to relate to economic needs in person-entrepreneurship fit.

### **Questionnaire evaluation and refinement**

This refinement process refers to the adaptation and validation of the measurement questionnaire used in the research. It is important to highlight that each questionnaire was previously validated by the authors in their research and contexts, presenting an acceptable Cronbach’s alpha for each of the dimensions of the constructs. In

**Table 1** Relations of the latent and manifest variables

Latent variable	Dimension	References	Manifest variables
Entrepreneurial self-efficacy	Searching	McGee et al., (2009)	<ul style="list-style-type: none"> <li>- Confidence to brainstorm (brains)</li> <li>- Confidence to develop products or services (development)</li> <li>- Confidence to identify needs (needs)</li> </ul>
	Planning	McGee et al., (2009)	<ul style="list-style-type: none"> <li>- Confidence to design marketing campaigns (mkt)</li> <li>- Confidence to determine competitive prices (price)</li> <li>- Confidence to identify market demand (demand)</li> <li>- Confidence to estimate initial funds (funds)</li> </ul>
	Marshalling	McGee et al., (2009)	<ul style="list-style-type: none"> <li>- Trust for others to identify with the vision (empathy)</li> <li>- Confidence to concisely explain the idea (communication)</li> <li>- Confidence to network (network)</li> </ul>
	Implementing-People	McGee et al., (2009)	<ul style="list-style-type: none"> <li>- Confidence to attract and hire employees (hire)</li> <li>- Trust to delegate tasks to employees (delegate)</li> <li>- Confidence to effectively handle problems (problems)</li> <li>- Trust to supervise employees (supervise)</li> <li>- Confidence to train employees (train)</li> <li>- Trust, inspire and encourage employees (inspire)</li> </ul>
	Implementing-Financial	McGee et al., (2009)	<ul style="list-style-type: none"> <li>- Confidence to maintain business accounting (accounting)</li> <li>- Confidence to manage financial assets (manage)</li> <li>- Confidence to read and interpret financial statements (statements)</li> </ul>
Social capital	Structural	Kannadhasan et al. (2018); Nahapiet (1998)	<ul style="list-style-type: none"> <li>- State of conversation with many about the idea (divulgation)</li> <li>- Status of new connections through contacts (new contacts)</li> <li>- Status of new contacts through connections (new connections)</li> <li>- Status of contacts in quantity (quantity)</li> </ul>
	Relational	Kannadhasan et al. (2018); Nahapiet (1998)	<ul style="list-style-type: none"> <li>- Status of the level of close relations with contacts (relations)</li> <li>- State of knowledge with contacts (contacts)</li> <li>- State of support for contacts in difficult situations (support)</li> </ul>

**Table 1** (continued)

Latent variable	Dimension	References	Manifest variables
	Cognitive	Kannadhasan et al. (2018); Nahapiet (1998)	- State of understanding of the objectives of the other in personal relationships (rapport) - State of trust so that in contact, neither party takes advantage of the other (respect)
P-EMP	P-EMP	Hsu et al. (2019)	- State of satisfaction of the need for independence in thought and actions when starting the business (independence) - State of satisfaction of personal freedom when starting the business (freedom) - State of satisfaction of achievement needs when starting the business (achievement, economy, richness)
Venture creation	Venture creation	De Carolis (2009)	- State of creation in which the enterprise is located (status, experience)

addition, each validated questionnaire was translated from English to Spanish, and for the adaptation for use in Colombia, we proceeded in two stages.

In the first stage, the questionnaire was translated, and the complete questionnaire with the control variables was exposed to thirteen people electronically and distributed through Google forms. The selected group consisted of five nascent entrepreneurs, five early stage entrepreneurs, two Ph.D. experts in quantitative research, and an entrepreneurship mentor. Seventy-seven per cent of the respondents answered from their cell phones and 23% from computers. As a result, each participant was interviewed to adjust the questionnaire's ergonomics using a more sophisticated tool that provides a clearer view of the answer options. Similarly, the number of questions made the questionnaire lengthy to complete, and questions with numerous answer options tended to bias the responses. However, the observations of this test were the following: use of the Qualtrics tool to replace Google forms, adjust the design of the questionnaire adaptable to cell phones, reduce the selection options from seven to five options, consider questions in the control variables, and adjust the wording of the questions.

In the second stage, the corrections of the first stage are applied and sent digitally. With the Qualtrics tool, the questionnaire was distributed among the same thirteen people who provided feedback. The new questionnaire was answered by seven people who, when interviewed, stated that the user experience improved considerably, generating a more pleasant process when answering the questionnaire. There were no further observations that would lead to the development of new changes. The questionnaire was reviewed by the statistical advisor of the research to corroborate that the answer options were compatible with the computer tools used to process the data collected.

Finally, in the third, a pilot test was designed. The adjusted questionnaire was sent to a database of 186 entrepreneurs provided by the innovation agency Punto Estratégico SAS. The database was composed of 89 nascent entrepreneurs and 97 budding entrepreneurs. It was distributed by Qualtrics and answered digitally by 31 entrepreneurs corresponding to 16.6% with an average response time of 9.5 min.

The set of tests and pilot tests validated the translation, comprehension, ergonomics, and randomness of the questionnaire, making it possible to have a questionnaire ready to be administered to the people under study in Colombia.

### **Operationalization of the study**

This study follows the estimation procedure developed by Hair et al. (1999) for statistical analysis using structural equation models for a correct sampling. Although there is no correct sample size, these authors state it should be between 100 and 200; this size is the critical sample size. They also suggest increasing the size when misspecification is suspected, the model is too large or complex, the data exhibit non-normal characteristics, or an alternative estimation procedure is used.

According to the Global Entrepreneurship Monitor (2017), the process of starting a company can take up to 45 months before it moves on to the next stage as an established business in the adolescence phase. Therefore, the sample of the present study comprises 500 entrepreneurs located in Colombia who are involved in the process of starting a company, namely, nascent entrepreneurs in the gestation or infancy phases of the business cycle (Aldrich & Martinez, 2007). The following inclusion criteria are proposed for the sample:

1. Adults (over 18 years).
2. Nascent entrepreneurs located in Colombia.
3. People who are considered to be nascent entrepreneurs. They are engaged in at least two activities involving the intention to create a business (developing a business plan/model, building a work team, renting an office, attending business courses or seminars, developing a product or service, investing resources in the business idea).
4. People with a newly established business. This means that it has not been in existence for more than 4 years.

## **Results**

Following the proposed theoretical model, the modelling results using the methodology presented are described below.

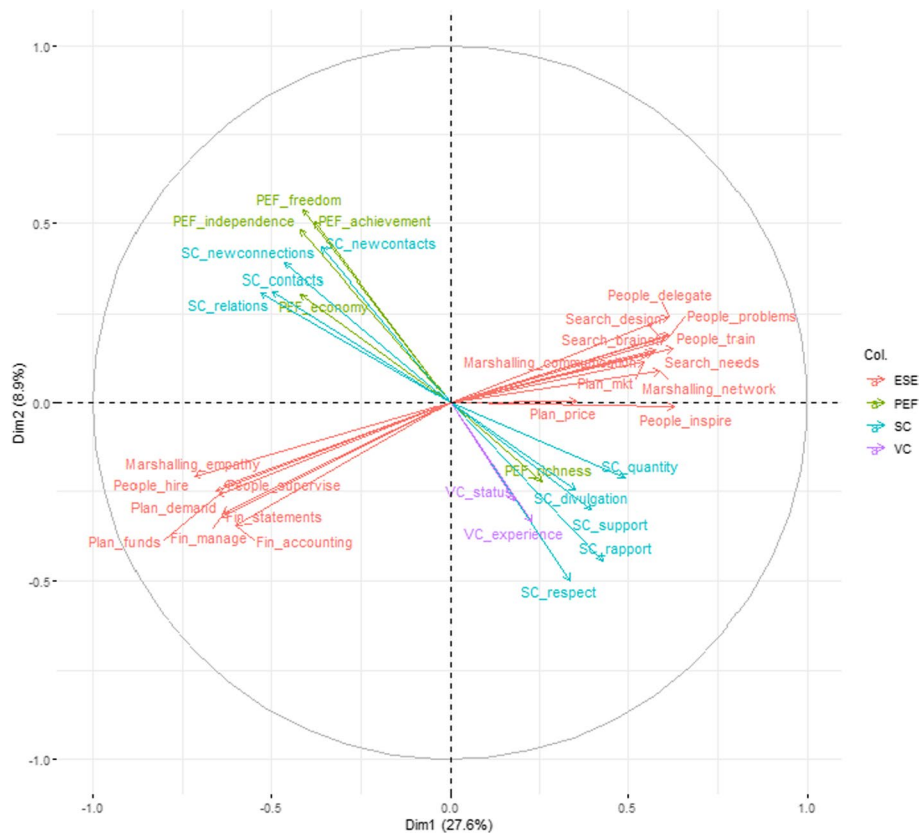
### **Multivariate descriptive analysis**

The exploratory analysis aims to identify the behavioral patterns of the variables. To this end, the first step is to carry out a univariate analysis of each of the manifest variables present in the model. Now, an alternative method for achieving a comprehensive analysis of the multivariate behavior of the data set is to analyze the correlation between the variables. Accordingly, a PCA is carried out, making it possible to visualize the breakdown of the variables in a new dimensional space. Figure 2 shows the correlation circle

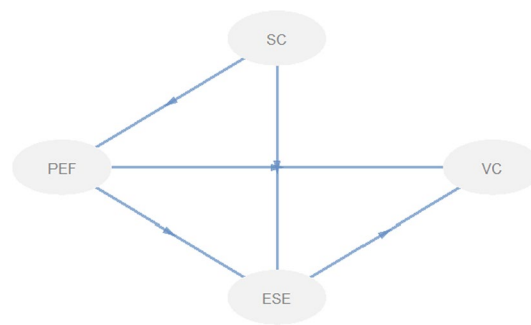
associated with the first two principal components of the data; the graph can be read as a radar. For example, the fact that two variables point in the same direction means that they are highly correlated; two variables that form a 90-degree angle indicate a zero correlation; and finally, two variables that point in opposite directions represent a negative correlation. The first aspect to note in the correlation circle is that there are two groups with negative correlations in the group of variables representing ESE (in red). In turn, the variables related to entrepreneurship are found in the first quadrant of the plane. There are four manifest variables related to Person-Entrepreneurship Fit (PEF) and four related to Social Capital (SC) in this quadrant. The PEF latent variable shows the greatest group consistency of responses, as four of its five variables are located in the same quadrant of the plane. The PCA analysis enables an exploratory contextualization of the problem, providing important information for the PLS-PM modelling process regarding the manifest variables that have the greatest association with the latent variables they reflect.

### PLS-PM modelling

As described in the methodological section, PLS-PM models are comprised of two sub-models: the inner model and the outer model. The inner model is formed solely by the latent variables (see Fig. 3), while the outer model represents the relationships of each latent variable with its respective block of manifest variables.



**Fig. 2** Correlation circle of the manifest variables



**Fig. 3** PLS-PM model of the study

**Table 2** Indicators of unidimensionality

Variable	Mode	MVs	C.alpha	DG.rho	eig.1st	eig.2nd
ESE	A	19	0.927	0.936	8.269	1.644
PEF	A	5	0.797	0.862	2.799	0.865
SC	A	9	0.825	0.867	3.849	1.065
VC	A	2	0.712	0.874	1.553	0.447

### Unidimensionality of the model

In the model, the manifest variables are considered to be reflective indicators, i.e., it is assumed that the entire block of variables is measuring the same latent variable and that the manifest variables of each block must, therefore, have a strong mutual association. That is, if any of the variables increases its value, the rest of the variables in the block must increase their value, and if any variable decreases its value, all of them must decrease their value. Moreover, one of the key characteristics of reflective models is the quality of the representation, i.e., it would be expected that there is the highest degree of association between a manifest variable and the variable in the same block. Therefore, if a manifest variable has a higher degree of association with a manifest variable outside of its block, it is considered an abnormality based on the consistency criterion between the latent variables and their group of manifest or indicator variables.

In this study, Cronbach's Alpha will be used as a criterion to evaluate how well a block of manifest variables measures its latent variable. Table 2 presents the results of the indices for assessing the unidimensionality of the model. It is evident that for all the latent variables, the Cronbach's Alpha value is greater than 0.7, which is the minimum value accepted in the specialist literature, thus demonstrating that the manifest variables are aligned with the latent variables that they represent.

The representation of the loadings of the latent variables with their respective manifest variable is shown in Fig. 4., and some variables do not reach the threshold of 0.7 to be considered representative within the model. For this reason, a second run will be carried out to determine the variables with the highest representation of their latent variable.

Given the above and considering the lack of representativeness of some manifest variables in the first run of the PLS-PM model, a second model was developed involving only the variables that had a specific weight of 65% in the first iteration. Figure 5 shows



the latent variables with the loading of each of their manifest variables, demonstrating that all the variables exceed the required threshold of 0.7.

For a more illustrative visual comparison, a bar chart with a cutoff line of 0.7 is presented (Fig. 6). As a result of the second model, the composition of the groups of manifest variables for each latent variable is as follows:

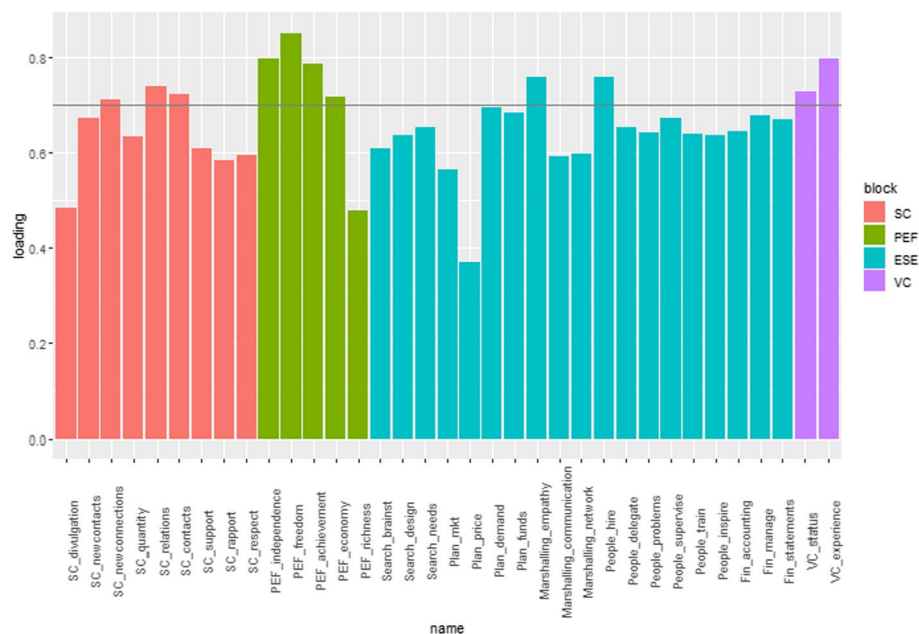
1. PEF (Independence, Freedom, Achievement, Economy).
2. ESE (Planning for demand, Planning for funds, Marshalling—empathy, Staff Attraction, Hiring, Management, Financial performance).
3. SC (New connections, new contacts, relationships, contacts).
4. VC (entrepreneurship status, entrepreneurial experience).

However, one of the assumptions of PLS–PM models is the uniformity of the block of indicators that represent a latent variable. For this reason, there must be no cross-correlations within the model, as this could lead to confounding problems when an indicator can better explain a latent variable outside of its block. To verify the fulfilment of the assumptions, Fig. 7 shows that the maximum relationship of the manifest variables is with their direct latent variable; this situation is evident when the diagonal of the figure is examined.

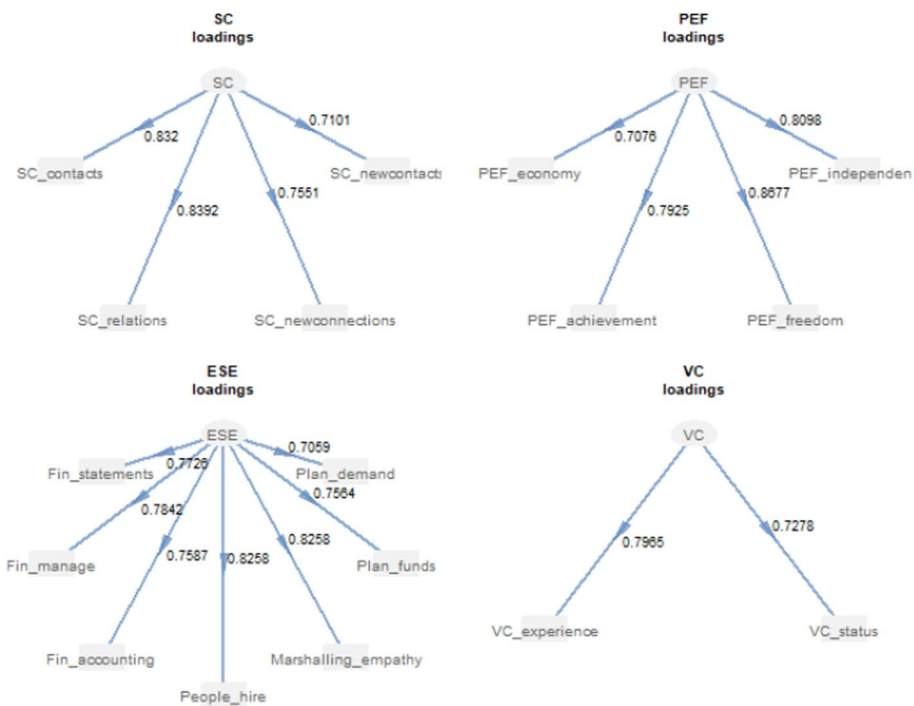
### Structural evaluation of the model

PLS–PM models are an interrelated network of linear regressions. Accordingly, the structural equations for each latent variable are presented in Table 3.

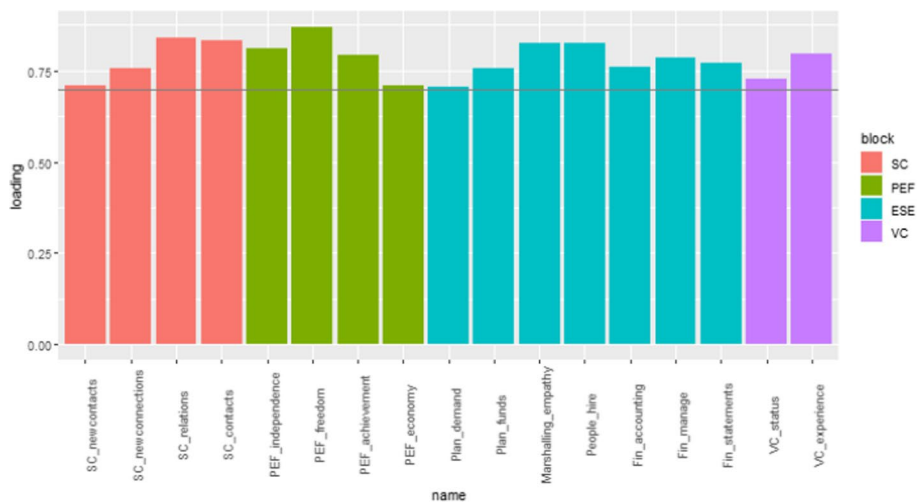
It is clear that Social Capital is significant in explaining PEF. In turn, Social Capital and PEF are significant in explaining ESE. Finally, the Venture Creation construct is



**Fig. 4** Specific loadings by latent blocks

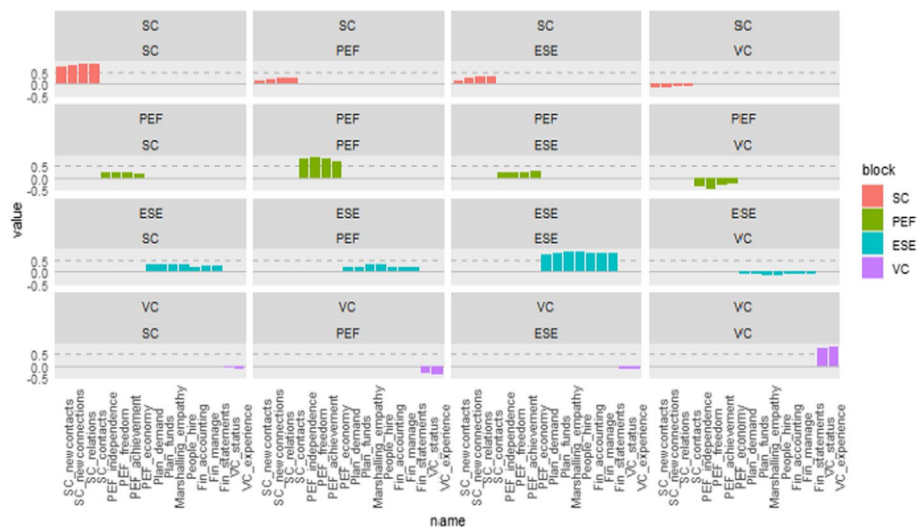


**Fig. 5** Representation of the inner model's fit



**Fig. 6** Specific loadings by significant latent blocks

significantly explained only by PEF. The results of inner model validation are shown in Table 4; the result of the R-squared value for the model's variable of interest is 0.5425, which is within the middle range according to the criteria presented by Sanchez (2013). Consequently, the communality results indicate how much of the variability of the block is reproducible by the respective latent variable. In this case, all the mean communality values are higher than 0.5, showing consistency between the behaviour of the indicators and their latent variable.



**Fig. 7** Cross-loadings between latent variables

**Table 3** Structural equations for the latent variables

	Estimate	Std. Error	t value	Pr (> t )
PEF				
Intercept	7.85E-17	0.0454	1.73E-15	1
SC	0.2928	0.0454	6.4517	2.90E-10
ESE				
Intercept	6.81E-17	0.0441	1.54E-15	1
SC	0.2818	0.0462	6.1055	2.24E-09
PEF	0.1712	0.0462	3.7079	0.000236
VC				
Intercept	- 5.64E-16	0.0426	- 1.32E-14	1
PEF	0.4301	0.0441	9.7614	1.62E-20
ESE	0.0405	0.0441	0.9195	0.3583

**Table 4** Indicators to validate the structural consistency of the model

LV	Type	R2	Block Communality	AVE
SC	Exogenous	0	0.6177	0.6177
PEF	Endogenous	0.5022	0.6344	0.6344
ESE	Endogenous	0.5145	0.6031	0.6031
VC	Endogenous	0.5425	0.5821	0.5821

**Inter-variable effects**

A significant result in PLS-PM models is estimating the effects of the latent variables that comprise the model. The effects quantify the direct or indirect relationship between constructs. As mentioned, effects can be direct, i.e., those directly associated with the inner model and represented by the network coefficients. There are also indirect effects,

representing the influence between latent variables following indirect paths in the model.

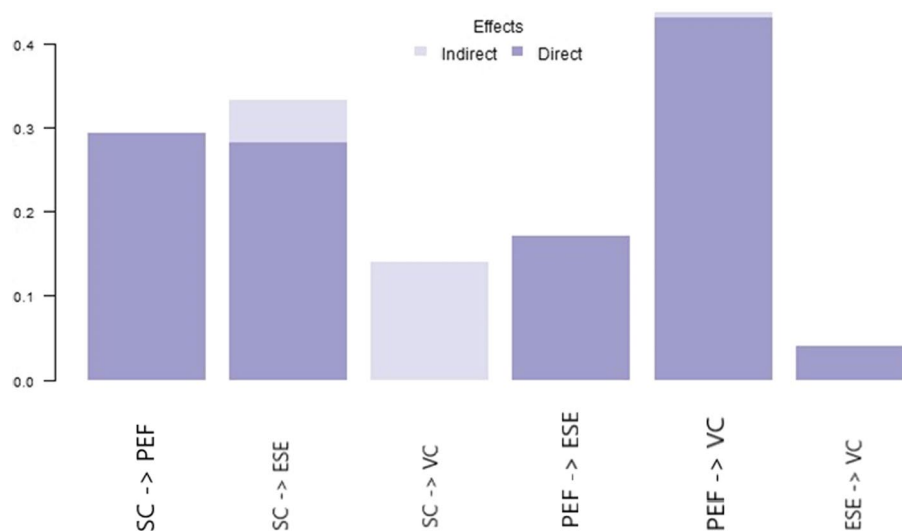
Figure 8 shows the impact of the effects for each construct relationship. It is important to note that Social Capital, which theoretically is not directly related to Venture creation, has a significant indirect effect in comparison with ESE. At the same time, the impact of PEF on the Venture creation construct is also evident.

### Validation of the model

As mentioned in the methodological section, PLS–PM models do not depend on assumptions about the fit to a known distribution, and therefore, sampling techniques are used to demonstrate the variability of the estimated parameters. The sampling procedure chosen to validate the model is bootstrapping, performing 200 successive samples. The model can be validated as the consistency of the inner–outer model has been proven. The validation results of the inner model's coefficients are shown in Table 5. The validation by bootstrapping will be performed at a confidence level of 95%. Thus, the coefficients for which the zero is not in the percentile interval of 2.5–97.5% will be considered significant. Accordingly, the coefficient for the relationship between ESE and VC is found to be non-significant.

Consequently, the significance of the effects is assessed under the bootstrapping procedure. The result in Table 6 identifies that the effect between ESE and VC is non-significant.

Table 6 validates the significant relationships between the latent variables by bootstrapping sampling. The second column (Original) contains the coefficient value of the relationship; the third column (Mean.Boot) contains the value of the coefficient validated by sampling; the fourth column (Std.Error) contains the standard deviation of the validation; the fifth column (perc.025) contains the lower bound of the coefficient interval, and the sixth column (perc.975) contains the upper bound of the



**Fig. 8** Bar chart of direct and indirect effects

**Table 5** Results of the bootstrapping for the latent coefficients

Relationships	Original	Mean.Boot	Std.Error	perc.025	perc.975
SC→PEF	0.2573	0.2629	0.0477	0.1700	0.3559
SC→ESE	0.2797	0.2849	0.0416	0.2076	0.3663
PEF→ESE	0.2210	0.2319	0.0451	0.1411	0.3186
PEF→VC	0.4302	0.4292	0.0395	0.3623	0.5163
ESE→VC	0.0350	0.0347	0.0490	− 0.0566	0.1341

**Table 6** Results of the bootstrapping for the effects between latent variables

Relationship	Original	Mean.Boot	Std.Error	perc.025	perc.975
SC→PEF	0.257	0.263	0.048	0.170	0.356
SC→ESE	0.337	0.346	0.040	0.273	0.416
SC→VC	0.122	0.125	0.026	0.080	0.182
PEF→ESE	0.221	0.232	0.045	0.141	0.319
PEF→VC	0.438	0.437	0.036	0.372	0.513
ESE→VC	0.035	0.035	0.049	− 0.057	0.134

coefficient interval. It should be noted that if the confidence interval contains the number zero, it can be stated that the value of the coefficient will have the value of zero, and therefore, the relationship is not significant. Based on the above, it can be stated that all of the relationships between the latent variables are significant, with the exception of the relationship between Entrepreneurial Self-Efficacy (ESE) and Venture Creation (VC), considering a confidence interval of 95%.

Finally, the inner model is validated, verifying the significance of all the manifest variables with respect to their direct latent variable. Table 7 shows that all the relationships of the inner model are significant, considering the 95% confidence interval.

Thus, after the internal validations of the structural equations and the external validation through bootstrapping, the final PLS model can be seen in Fig. 9, in which the thickness of the line represents the magnitude of the impact of each variable.

In summary, the structure of the general model (inner model and outer model) is presented in Fig. 10.

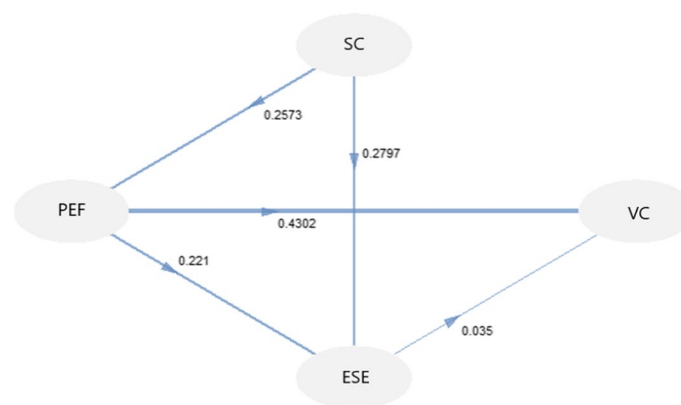
Figure 10 shows the relationship between the manifest variables and the latent variables (constructs) and their corresponding quantification (path coefficients). It should be noted that this model compiles the results of the research and presents a new way of performing a holistic analysis of the business venture creation process.

## Discussion

Although there are strategies and methods to guide start-ups, many of them do not reach the stage of conception despite the advice offered. Some authors suggest not to bother with considerations of social and psychological factors during the entrepreneurial process analysis. This study focuses on determining the impact of social and psychological

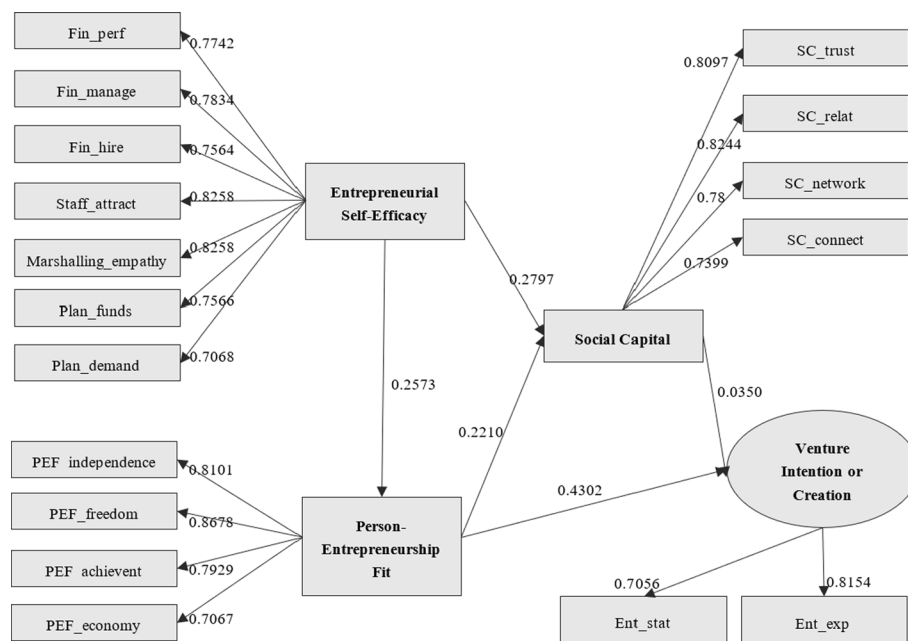
**Table 7** Validation of the outer model of manifest variables

Relationship	Original	Mean.Boot	Std.Error	perc.025	perc.975
SC-SC_connect	0.1828	0.1786	0.0423	0.0840	0.2398
SC-SC_network	0.3029	0.2961	0.0363	0.2268	0.3622
SC-SC_relat	0.3908	0.3926	0.0360	0.3325	0.4683
SC-SC_trust	0.3768	0.3802	0.0408	0.3065	0.4623
PEF-PEF_ind	0.3267	0.3264	0.0264	0.2763	0.3812
PEF-PEF_free	0.3675	0.3643	0.0217	0.3227	0.4123
PEF-PEF_achievement	0.2783	0.2810	0.0209	0.2401	0.3207
PEF-PEF_economy	0.2769	0.2767	0.0216	0.2279	0.3185
ESE-Plan_demand	0.1751	0.1755	0.0205	0.1384	0.2184
ESE-Plan_funds	0.1839	0.1832	0.0178	0.1452	0.2166
ESE-Marsh_empathy	0.2289	0.2276	0.0187	0.1909	0.2611
ESE-Staff_attract	0.2289	0.2276	0.0187	0.1909	0.2611
ESE-Fin_hir	0.1438	0.1426	0.0231	0.0972	0.1815
ESE-Fin_man	0.1676	0.1680	0.0172	0.1302	0.2003
ESE-Fin_perf	0.1537	0.1544	0.0167	0.1227	0.1870
VC-VC_stat	0.6130	0.6156	0.0694	0.4772	0.7427
VC-VC_exp	0.6953	0.6902	0.0646	0.5605	0.8122

**Fig. 9** Final PLS-PM structure

factors as influencing the venture creation business cycle. These factors are entrepreneurial self-efficacy, social capital, and person-entrepreneurship fit.

Entrepreneurial self-efficacy was adopted as a self-efficacy variable from Albert Bandura's Social Cognitive Theory. It is considered to be the individual's knowledge of their capabilities, skills, and coping mechanisms in different situations, how they can take on specific tasks, valuing what they have and what they are, but focused on believing that they can achieve their goals with their resources. For the entrepreneur, it represents how to achieve what they have set out to do, even without previous experience, due to their confidence in their belief and their abilities. It is worth noting that psychology can identify traits of creative and proactive personalities among entrepreneurs, in which people take advantage of opportunities to develop innovative solutions for their initiatives. In the entrepreneur, the attribute of entrepreneurial self-efficacy may be linked to entrepreneurial behaviors and the achievement of



**Fig. 10** General structure of the model

business outcomes. Consequently, the key characteristics are goal-setting and visioning, entrepreneurial orientation, development of new products and market opportunities, building an innovative environment, and planning. These elements can be strengthened through education and training.

The concept of social capital was used as a transversal element in business processes, characterized by its collective nature, producing individual and group benefits. This variable is notable for referring to people's abilities to contribute to the pursuit of a common goal beyond material contributions. Goods with social characteristics are constructed in groups. The exchange of relationships allows individuals to learn to make their personal resources available to the network to build interaction and trust. Shared relationships thus enable benefit-producing networks to exist and individuals to understand that the gains from belonging to a social group will outweigh their efforts.

The Social capital concept comprises three dimensions: structural, based on the construction of relationships between individuals and institutions and the social structure; relational, such as the interaction of individuals based on trust and associability; and cognitive, which are the common meanings, language, and codes that a group can use. Trust and interaction are important for entrepreneurship, because they contribute to establishing successful market relationships and forming alliances that offer positive results within the environment. This is how interpersonal relationships contribute to satisfying interests.

Person-entrepreneurship fit is a moderating element for the relationship between entrepreneurial self-efficacy and the venture creation process. It is the satisfaction of their personal needs that an entrepreneur finds by developing an entrepreneurial idea. This component establishes three traits that form a triangle: identification (of the opportunity), needs (that can be satisfied), and coping skills (that they have to carry out tasks). By analyzing this set within the context of opportunities (the social,

economic, and governmental structures), the entrepreneurs can develop a true commitment to their business ideas. Theoretically, if they have the skills to perform an activity and that activity satisfies their personal needs, they will have a high level of person-entrepreneurship fit, strong motivation, and credibility to pursue a venture.

Based on the literature review, a theoretical model of relations between entrepreneurial self-efficacy, social capital, person-entrepreneurship fit, and venture creation was developed.

The research question is defined as follows: how do social capital, entrepreneurial self-efficacy, and person-entrepreneurship fit positively impact the transition of nascent entrepreneurs toward the creation of start-ups?

To test the relations demonstrated in the theoretical model by analyzing the empirical data, the operationalization of the constructs was needed. Constructs as latent variables were turned to manifest variables. Then, it was possible to propose ten hypotheses (H1–H10) linking each of the manifest variables with venture creation. The last hypothesis (H11) suggested the role of social capital as a moderator of the relationship between entrepreneurial self-efficacy and new venture creation. Definition of venture creation was determined to indicate how this paper understands that process.

To answer the research question, empirical data were needed. The questionnaire was sent via email to a database of 7000 entrepreneurs supplied by the innovation agency Punto Estratégico SAS). The data were collected and distributed using the digital tool Qualtrics through validated questionnaires. Five hundred (500) entrepreneurs returned the fully answered questionnaires.

The final number of manifest variables was identified using R software. This model operates by defining manifest variables that describe the latent variable, which, when passed through the set of regression equations, establishes an outcome variable (which is also considered a latent variable). It is essential to note that this step enabled us to identify 4 manifest variables for social capital, 7 for entrepreneurial self-efficacy, 4 for person-entrepreneurship fit, and 2 for the definition of the Venture Creation outcome variable.

For data analysis, hypothetical-deductive research methodology is applied with a cross-sectional multiple causal correlation design with an explanatory scope. It is divided into three stages: first, an exploratory analysis of the data relating to the study variables is carried out. Second, a principal component analysis is carried out. Finally, the third stage is the modelling using the Partial Least Squares–Path Modelling methodology. The analysis enabled us to test the hypotheses describing the relations between the constructs and answer the research question.

## **Conclusion**

Venture creation (understood as implementing a business project), which is the outcome variable, is executed through the relationship of the variables defined: entrepreneurial self-efficacy, social capital, and person-entrepreneurship. The development of innovation-based start-ups has become an opportunity to create jobs needed in Columbia, primarily by young population. Though many young people opt for entrepreneurship to generate their own income, these initiatives have economic constraints, are informal in



nature, are mostly non-innovative, and the jobs are focused on family and friends. Innovation-based entrepreneurship is challenged by fear, doubts, and mistrust. Therefore, the initial activities do not turn into venture creation. Numerous studies mention the factors responsible for the situation, such as economic, political, and cultural ones. Weak policies supporting graduates' confidence in creating a venture is an element of an environment discouraging creativeness. This study seeks to identify the social and psychological factors that influence entrepreneurship processes. It is focused on entrepreneurial self-efficacy, social capital, and person-entrepreneurship fit as factors impacting venture creation. Accordingly, the study seeks to describe the association of factors that facilitate the transition toward the gestation of start-ups in innovation-based entrepreneurship programmes within Colombia. It also enables us to identify factors that contribute to initiatives failing to become consolidated within the business cycle. Application of empirical data to the model describing the relations between the mentioned factors and venture creation resulted in the following findings:

1. Only the Person-Entrepreneurship Fit variable has an influence on venture creation.
2. Entrepreneurial Self-Efficacy does not have an influence.
3. Social Capital has an indirect effect on venture creation and, additionally, a direct effect on the Person-Entrepreneurship Fit and Entrepreneurial Self-Efficacy variables.

The study encourages researchers to develop interdisciplinary models that better reflect reality. It contributes to enriching the spectrum that can be studied to promote holistic analyses. Practical implication of the study findings determines the measures which make it possible to design sustainable strategies over time to support the development of innovative ventures. In turn, this type of analysis is very useful for start-ups, nascent entrepreneurs, and decision-makers in government, because decisions are made on the variables that actually affect the process of business creation, and it is also supported by objective evidence.

Including social and psychological variables (entrepreneurial self-efficacy, social capital, and person-entrepreneurial fit) that influence the business cycle processes broadens research context. It contributes to the development of holistic models and encourages scholars to undertake interdisciplinary research addressing a variety of factors impacting the entrepreneurial processes. This way, research findings will better reflect reality. The present study is an invitation to consider factors beyond the economic and political ones. The next step would be a super model capable of successfully linking what has been done in previous studies and what is proposed now.

#### Abbreviations

ESE	Entrepreneurial self-efficacy
Search	Searching dimensión
Plan	Planning dimensión
Marsh	Marshalling dimensión
People	Implementing-people dimensión
SC	Social capital
PEF	Person-entrepreneurship fit
PLS-PM	Partial Least Squares-Path Modeling

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**Author contributions**

AE carried out the conception and design of the study. JRR contributed to the methodological design and operationalization of the study. RZO contributed with the construction of the models and results of the study. EDD contributed to the writing and translation of the manuscript. All authors read and approved the final manuscript.

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**Availability of data and materials**

Data used in this manuscript will be available up on request.

**Declarations****Competing interests**

The authors declare that they have no competing interest.

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