

# The mediating role of entrepreneurial alertness in the entrepreneurial passion and persistence in venture start-up nexus

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## Abstract

**Purpose** – The purpose of this study was to explore the relationship between entrepreneurial passion for founding firms (EPFF) and persistence in venture start-ups and to examine the mediating role of searching and scanning alertness, association and connection alertness and evaluation and judgment alertness (i.e. entrepreneurial alertness).

**Design/methodology/approach** – Using a three-way parallel mediation involving searching and scanning alertness, association and connection alertness and evaluation and judgment alertness, on data from 342 serial entrepreneurs from Nigeria, the authors examined the influence of EPFF on persistence in venture start-ups, through a parallel mediation involving searching and scanning alertness, association and connection alertness and evaluation and judgment alertness.

**Findings** – The authors find that EPFF was not significantly related (positive) to persistence in venture start-ups, but that searching and scanning alertness, association and connection alertness and evaluation and judgment alertness mediated the path through which EPFF impacts persistence in venture start-ups. Thus,



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entrepreneurial alertness is relevant in explaining the relationship between EPFF and persistence in venture start-ups in Nigeria.

**Originality/value** – The findings of this study highlight the relevance of EPFF and alertness in explaining persistence in venture start-ups in Nigeria.

**Keywords** Entrepreneurial passion for founding firms, Entrepreneurial alertness, Persistence in Venture start-ups, Entrepreneurial process

**Paper type** Research paper

## Introduction

Micro, Small and Medium Enterprises (MSMEs) are essential in every economy because they create employment, local technologies and promote the importation/exportation of goods/services that grow the foreign direct investments (FDI) of an economy (Tuluca and Dogan, 2014; Golovko and Valentini, 2011). However, there appears to be stagnation in the rate of MSME formation in developing economies. In Nigeria for instance, a 3.5% decrease was recorded in the growth of MSMEs startups between 2017 and 2020 (SMEDAN/NBS, 2020). There is also an abysmal 80% exit rate of businesses from operation before they get to five years after formation, resulting from threats and challenges inherent in the business environment (e.g. Dilger, 2018; Akinyemi and Adejumo, 2018; Onwe *et al.*, 2020). Perhaps, there is not enough entrepreneurial passion (EP), amongst entrepreneurs.

EP refers to the “consciously accessible intense positive feelings experienced by engagement in entrepreneurial activities associated with roles that are meaningful and salient to self-identity of the entrepreneur” Cardon *et al.* (2009a, *p.* 517). EP comprises three domains:

- (1) the passion for inventing;
- (2) founding; and
- (3) developing firms (Cardon *et al.*, 2009a; Cardon and Kirk, 2015; Lopez *et al.*, 2018).

The passion for inventing firms involves scanning the environment for new market opportunities, developing new products and working with new prototypes (Cardon *et al.*, 2009b). Passion for developing firms relates to growing and expanding an already founded venture (Cardon *et al.*, 2009b), while the passion for founding firms involves the assemblage of resources (money, man and materials) that are needed to create a new venture (Cardon *et al.*, 2009b). Since the focus of the current study is on how entrepreneurs can persist in setting up businesses amidst threats and challenges in the business environment, we focus on the entrepreneurial passion for founding firms (EPFF) domain of EP.

Interestingly, previous studies have also found that another factor that impacts entrepreneurial outcomes is entrepreneurial alertness (e.g. Araujo *et al.*, 2023; Hughes, 2019; Tang *et al.*, 2021). Entrepreneurial alertness refers to the “major cognitive ability of entrepreneurs in recognizing opportunities” (Chavoushi *et al.*, 2020, *p.* 3). It involves an “entrepreneur’s ability to scan and search for information, connecting previously disparate information, and make evaluations on the existence of profitable business opportunities” (Tang *et al.*, 2012, *p.* 4). Thus, entrepreneurial alertness is decomposed into searching and scan, association and connection, evaluation and judgment (Tang *et al.*, 2012; Campos, 2017). The searching and scan domain represents the willingness of individuals to interact with others to gain information about economic opportunities; the association and connection domain represents the individual’s disposition toward finding relationships between events and recognizing opportunities amongst them; while the evaluation and judgment domain represents the individual’s instincts toward recognizing and exploiting opportunities (Tang

*et al.*, 2012). These different domains of alertness do not elicit the same entrepreneurial behaviors. For instance, according to [Edigbo et al. \(2021\)](#), searching and scanning impacted more on entrepreneurial intentions than association and connection and evaluation and judgment. Also, searching and scanning mediated the effect of entrepreneurial exposures on intentions while association and connection and evaluation and judgment did not. Besides, since the different forms of alertness address different aspects of opportunity recognition and creation, we envisage that a more comprehensive finding will be made when we look at the various domains of alertness separately rather than looking at it as a whole. Thus, the current study proposes that the addition of (searching and scanning, association and connection, evaluation and judgment) respectively, might have an even greater impact on entrepreneurs' persistence in venture start-ups. Notwithstanding, we could not see any study, where an integration of searching and scan, association and connection, evaluation and judgment, have been examined on persistence in venture start-ups.

Moreover, although previous studies have found positive correlations between EP and entrepreneurial alertness (e.g. [Campos, 2017](#); [Li et al., 2020](#); [Syed and Mueller, 2015](#)), we still do not know how both constructs can work together to influence persistence in venture start-ups. [Li et al. \(2020\)](#) and [Syed and Mueller \(2015\)](#) investigated entrepreneurial alertness as an outcome variable, and [Campos \(2017\)](#) investigated entrepreneurial alertness as a mediator between passion and entrepreneurial orientation. Campos studied the mediating role of entrepreneurial alertness, but no study has attempted to investigate the mediating role of alertness in the relationship between any type of EP and entrepreneurial behaviors. This study tries to fill this gap. In sum, the purpose of this study was to examine the direct effect of EPFF on persistence in venture start-ups, as well as investigate the role of entrepreneurial alertness as a potential mediating variable explaining how or why such passion affects persistence in venture start-ups. If such a mediating role exists, it will suggest an important explanation for why EPFF is very influential on persistence in venture start-ups as a result of its impact on entrepreneurial alertness.

The current study asked the following questions:

*Q1.* Does an EPFF significantly affect persistence in venture start-ups?

Is the relationship between an EPFF and persistence in venture start-ups mediated by entrepreneurial alertness (e.g. searching and scanning alertness, association and connection alertness, evaluation and judgment)? To address the following questions, the current study examined first, the independent effects between the study variables, then a three-way parallel mediation involving searching and scanning alertness, association and connection alertness and evaluation and judgment alertness with a sample of 342 serial entrepreneurs in Nigeria.

By providing answers to the above questions, the current study makes the following contributions. First, building on evidence from previous research that EPFF enhance entrepreneurial persistence i.e. an already existing process, (e.g. [Cardon and Kirk, 2015](#)), the current study extends the research by investigating how EPFF impacts persistence in venture start-up. In other words, whereas previous scholars have not studied serial entrepreneurs who are more concerned with setting up various ventures, but rather entrepreneurs who found, developed and invented firms together, this study singles out serial entrepreneurs and examines how the passion they experience influences their persistence in starting businesses. Thereby, extending the research on the importance of studying entrepreneurs based on the type of passion that they experience. Second, the current study extends our knowledge of the theory of entrepreneurial opportunity (TEO) and self-concordance model (SCM) by highlighting how entrepreneurs can explore their alertness in building their EPFF toward persistence in venture start-ups. A thorough

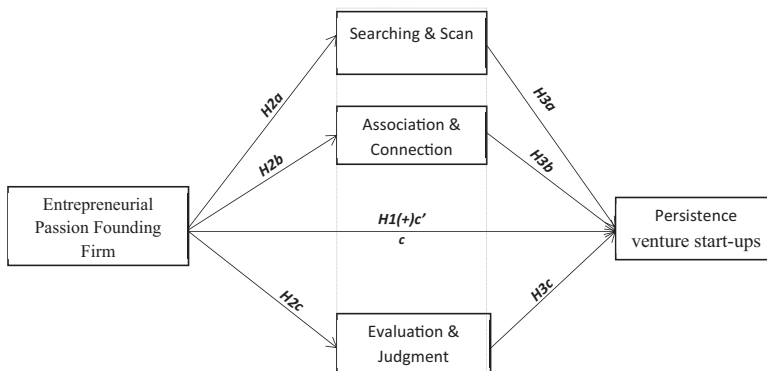
empirical analysis was conducted in this study to test the hypotheses formulated therefrom (Figure 1).

In the remaining parts of this study, we did a theoretical framework, a review of the related literature on EPFF and entrepreneurial alertness and developed hypotheses to be tested in the study. Next, we described the methodology including sampling, measures and analysis. Then, we tested our hypotheses. Finally, we discussed the results including implications for scholars and practitioners.

**Theoretical framework**

This study incorporates the SCM and TEO to improve understanding of how EP might foster persistence in venture start-ups in developing economies. The SCM explains that individuals tend to persist longer in the pursuit of their goals when the very processes of pursuing such goals are enjoyable (Sheldon and Houser-Marko, 2001). In other words, when the entrepreneurial process grants individuals opportunities to identify with and display affection for what they do (i.e. passion); they are bound to persist longer in such pursuits, despite the challenges and obstacles that are inherent in the processes. Sheldon and Houser-Marko (2001) explained that the “SCM” constructs such as intrinsic interests and identity congruence are important in determining the extent to which people pursue their set of personal goals. The SCM is a good framework for examining how longitudinal processes initiate positive motivation and promote later positive outcomes.

The theory of opportunity, on the other hand, captures how entrepreneurial opportunities are birthed (Ghasemi and Rowshan, 2016). The theory is an adaptation of two complementary perspectives, positing that opportunities are either “discovered” from objective efforts such as deliberate searching and scanning, connection and association or are “created” by subjective efforts such as evaluation and judgments (Tang et al., 2012). The discovery strand of the theory is built around the assumption that entrepreneurial alertness to opportunities is governed by the ability of an individual to gather explicit knowledge through deliberate searching and scanning for information. It also involves deliberately looking for connections and associations between information and events and then making evaluations and judgments about the viability and feasibility of such information. The creativity strand of this theory covers all the aspects of alertness as a result of the individual’s ability to recognize opportunities through subjectivity arising from tacit



Source: Figure by Authors (2023)

**Figure 1.**  
Hypotheses development model

knowledge arising from their environment (Tang *et al.*, 2012). Such abilities may permit individuals to recognize gaps with limited cues and may permit them to persist longer in their venture pursuit.

### Hypotheses development

#### *Entrepreneurial passion and persistence in venture start-ups*

Drawn from Sheldon and Houser-Marko's (2001) SCM, the concept of EPFF refers to an individual's affection for assembling the necessary resources needed to create a new venture (Cardon *et al.*, 2009a; Schummer *et al.*, 2019). Several studies have shown that individuals who experience passion for founding firms are more persistent with the venture, as well as successful (e.g. Cardon and Kirk, 2015; Ko *et al.*, 2019; Iyortsuun *et al.*, 2019). The importance of EPFF in entrepreneurship has repeatedly been shown (e.g. Aldrich and Zimmer in Cardon *et al.*, 2009a, p. 4), and this is because it serves as an important source of motivation for many entrepreneurs to continue to persist in their ventures. Thus, founding a firm primarily easily translates into an enjoyment of the process, and the development of identities that are intertwined with the venture identity (Cardon *et al.*, 2005). Cardon and Kirk (2015) provided evidence that entrepreneurs who experience a high EP for founding firms often have higher entrepreneurial persistence (i.e. perseverance in developing and inventing the firms to fruition). Studies investigating how EPFF impacts persistence in venture start-ups are scarce. Notwithstanding, previous studies have reported that EPFF has positive and significant relationships with entrepreneurial behaviors like innovative behaviors (e.g. Cardon *et al.*, 2013), creative behaviors (e.g. Kang *et al.*, 2016), franchisees (e.g. Shockley and Turner, 2016), social innovation performance, (e.g. Ko *et al.*, 2019) and entrepreneurial effort.

However, since EPFF has been reported to have predicted positive entrepreneurial outcomes such as innovation, intentions and persistence, we expect that it will predict persistence in venture start-ups as well. Most importantly, insights on EPFF and entrepreneurial behaviors and outcomes from developing economies like Nigeria appear to be missing from the general discourse. The business environment in Nigeria is bedeviled with hostility such as lack of adequate support, insecurities, harsh policies, etc., (e.g. Akinyemi and Adejumo, 2018; Onwe *et al.*, 2020), which sometimes hinders business startups. Although, there has been recorded growth in the founding of businesses in Nigeria within the past four years (i.e. 2017–2020) Small and Medium Enterprise Development Agency of Nigeria and National Bureau of Statistics, (SMEDAN/NBS, 2017), there is no evidence to suggest whether EPFF is responsible for this. Thus, based on arguments from extant literature that EPFF might drive firms' persistence in an entrepreneurial process, we also expect that EPFF might be the reason for the persistence in venture start-ups by entrepreneurs in Nigeria. It was based on this, therefore, that we proposed that:

- H1. EP for founding firms might be directly and positively related to persistence in venture start-ups by entrepreneurs in Nigeria.

#### *Entrepreneurial passion for founding firms and entrepreneurial alertness*

Evidence exists in previous research that EPFF predicts several positive entrepreneurial behaviors including entrepreneurial alertness (e.g. Samo and Hashim, 2016; Valliere, 2011); this could be a result of entrepreneurs' motivation and ability to identify with several entrepreneurial processes and opportunities (e.g. Alam *et al.*, 2019). Entrepreneurs can interact with others to acquire new information to enable them to found new ventures; regularly read news, periodicals and magazines to enable them to found new firms, see

associations between unrelated information; and may have instincts to find opportunities with potential because of the passion that they have in identifying with the entrepreneurial process. It is essential to recognize that the quality of the relationship between entrepreneurial alertness and persistence in venture start-ups largely depends on the passion and motivations that entrepreneurs have for such processes (e.g. [Alam et al., 2019](#)). High experience for EPFF will most likely result in high alertness for entrepreneurial opportunities.

EPFF can contribute to explaining entrepreneurial alertness ([Cardon et al., 2017](#); [Drnovsek et al., 2016](#); [Iyortsuun et al., 2019](#)). For instance, entrepreneurs who are keen on establishing new firms would always be involved with the searching and scanning for new information, association and connection of unrelated information and evaluation and judgment of opportunities, than those that are not. [Kirzner \(1979\)](#) avers that the failure of most entrepreneurial processes may be linked to a lack of an individual's ability to accumulate or sniff out opportunities in the market that have been overlooked by others. As [Samo and Hashim \(2016\)](#) explained, entrepreneurial alertness may have a direct and positive influence on entrepreneurs' behaviors like passion for founding firms.

Previous studies have reported positive links between passion and entrepreneurial alertness. Searching and scanning and association and connection are key constructs of the TOE ([Ghasemi and Rowshan, 2016](#)) that encourage entrepreneurs to be objective by utilizing deliberate efforts to discover opportunities that have been overlooked in the marketplace ([Samo and Hashim, 2016](#)). Evaluation and judgment is also a key construct of the TEO that encourages entrepreneurs to be subjective by utilizing intuitions in creating opportunities in the marketplace. Entrepreneurial alertness can determine the amount of EPFF because of the connections between opportunity and intention formation, which according to [Geissler and Zanger \(2010\)](#) possess the potential of developing and stimulating entrepreneurial behaviors such as founding a firm. Similarly, [Baluku et al. \(2018\)](#) and [Martin et al. \(2013\)](#) suggest that an investment in knowledge and skills that enables opportunity identification fosters positive entrepreneurial behaviors. Thus, when entrepreneurs experience high EPFF, their ability to search and scan new information about opportunities; connect disjointed and unrelated information; and evaluate and make a judgment of opportunities might increase. [Valliere \(2011\)](#) suggests that resources that foster entrepreneurial behaviors such as passion might also be developed through entrepreneurial alertness. Based on this, we argue that EPFF would have a direct and positive effect on different constructs of entrepreneurial alertness. Thus, we propose that:

- H2a.* EPFF is directly and positively related to the searching and scanning alertness of entrepreneurs in Nigeria.
- H2b.* EPFF is directly and positively related to the association and connection alertness of entrepreneurs in Nigeria.
- H2c.* EPFF is directly and positively related to the evaluation and judgment alertness of entrepreneurs in Nigeria.

#### *Entrepreneurial alertness and persistence in venture start-ups*

Previous researchers have found that searching and scanning alertness is positively and significantly related to entrepreneurial behaviors or outcomes (e.g. [Tang et al., 2012](#); [Adomako et al., 2018](#); [Edigbo et al., 2021](#)). However, research involving searching and scanning alertness and persistence in venture start-ups has not been conducted, rather, the focus has been on persistence in already established entrepreneurial processes.

Notwithstanding, since searching and scanning alertness positively predicted entrepreneurial behaviors and outcomes like intentions, innovation modes and persistence (Tang *et al.*, 2012; Adomako *et al.*, 2018; Edigbo *et al.*, 2021), the chance that searching and scanning alertness can foster persistence in venture start-ups exist (Hu and Ye, 2017). This could imply that entrepreneurs who actively skim through the environment and probe new information and changes and shifts overlooked by others to discover opportunities may be more likely to be persistent in founding new firms, not minding the challenges inherent in the environment. Relying on TOE, we make an argument that entrepreneurs who are alert in terms of searching and scanning for information relating to new opportunities will most likely be persistent in setting up entrepreneurial ventures (Ghasemi and Rowshan, 2016). If entrepreneurs are constantly searching and scanning for entrepreneurial opportunities, the chances that they will keep discovering new ideas and persistently create new businesses will be high. Thus, the model of the current study considers that searching and scanning alertness is a significant antecedent to persistence in venture start-ups. Based on this reasoning, we argue that there might be a positive relationship between searching and scanning alertness and persistence in venture start-ups.

Also, previous researchers have found that association and connection alertness has positive and significant associations with entrepreneurial outcomes (Tang *et al.*, 2012; Campos, 2017; Adomako *et al.*, 2018; Edigbo *et al.*, 2021). Although there are no studies involving the impact of association and connection on persistence in venture start-ups that could be seen, instead, the focus has been on persistence in already established entrepreneurial processes. However, since studies have found that this alertness is a positive driver of entrepreneurial outcomes and behaviors like innovation, intentions and persistence (e.g. Tang *et al.*, 2012; Adomako *et al.*, 2018; Edigbo *et al.*, 2021), we expect that it can also drive persistence in venture start-ups. This means that as entrepreneurs “cognitively respond to, and process, new information into coherent alternatives” (Adomako *et al.*, 2018, *p.* 3), they are more likely to be persistently founding new firms. Building on TOE, the current study argues that entrepreneurs who are alert in terms of associating and connecting pieces of information relating to new opportunities will most likely be persistent in setting up entrepreneurial ventures (Ghasemi and Rowshan, 2016). By constantly association and connecting information to discover new alternatives, entrepreneurs are bound to always discover opportunities that will enable them to remain consistent in setting up new businesses. Hence, the model of the current study considers that association and connection alertness a significant antecedents to persistence in venture start-ups. Along this line of reasoning, therefore, we argue that there might be a positive relationship between association and connection alertness and persistence in venture start-ups.

Lastly, previous studies have also suggested that evaluation and judgment alertness fosters entrepreneurial outcomes like innovation, intentions and success (e.g. Edigbo *et al.*, 2021; Chavoushi *et al.*, 2020; Adomako *et al.*, 2018; Obschonka *et al.*, 2017; Campos, 2017; Tang *et al.*, 2012). However, studies that involve the relationship between evaluation and judgment on persistence in venture start-ups are scarce. Rather, the focus has been on entrepreneurial persistence in already established entrepreneurial processes. But, since positive relationships exist between evaluation and judgment and various entrepreneurial outcomes and behaviors like innovation, intentions and persistence (e.g. Tang *et al.*, 2012; Adomako *et al.*, 2018; Edigbo *et al.*, 2021), we expect that can also drive persistence in venture start-ups. This means that as entrepreneurs “notice changes and shifts in the environment, and make decisions concerning the dynamics present of business opportunities, they are more likely to be persistently founding new firms.” Drawing on TOE, we argue that entrepreneurs who are alert in terms of evaluation and judgment are more

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likely to be persistent in setting up entrepreneurial ventures (Ghasemi and Rowshan, 2016). By constantly noticing changes and shifts in the environment, and deciding upon business opportunities, entrepreneurs are bound to always discover opportunities that will enable them to remain consistent in setting up new businesses. Therefore, our model in this study considers that evaluation and judgment alertness is a significant antecedent to persistence in venture start-ups. Thus, based on these lines of arguments, we argue that there might be a positive relationship between evaluation judgment alertness and persistence in venture start-ups. Thus, we propose that:

- H3a. Searching and scanning alertness is directly and positively related to the persistence of venture start-ups in Nigeria.
- H3b. Association and connection alertness is directly and positively related to the persistence in venture start-ups in Nigeria.
- H3c. Evaluation and judgment alertness is directly and positively related to the persistence in venture start-ups in Nigeria.

#### *Entrepreneurial alertness as a mediator*

*Entrepreneurial passion for founding firms, searching and scan and persistence in venture start-ups.* Searching and scanning alertness equips an individual with the ability to develop the tacit and explicit knowledge base, through sensing and storing information (e.g. Reed, 2004; Shane, 2000) that would assist them to be persistent and unconventional in their pursuit of new ideas (e.g. Tang et al., 2012). Searching and scanning alertness assist entrepreneurs in building specific information that relates to their venture pursuits. EPFF on the other hand fosters creativity and assists entrepreneurs in raising funds or securing investors (e.g. Campos, 2017; Li et al., 2020; Xu et al., 2019), and entrepreneurs who approach their ventures with passion tend to persist longer than those that do not (Cardon et al., 2017). From all indications, EPFF may involve garnering knowledge (tacit and explicit), i.e. through searching and scanning alertness of the environment, that might foster the persistence in venture start-ups. Thus, searching and scanning alertness might mediate how EPFF impacts persistence in venture start-ups by increasing the influence of EPFF on such persistence in venture start-ups. It is based on this that this study proposes that:

- H4a. Searching and scanning alertness will mediate the effect of EP for founding firms on persistence in venture start-ups by entrepreneurs in Nigeria.

#### *Entrepreneurial passion for founding firms, association and connection and persistence in venture start-ups*

Connection and association alertness refers to the ability to bring disjointed data together and then form a coherent alternative from such data (e.g. Adomako et al., 2018; Reed, 2004). It represents the way individuals process new information and cues. This ability furnishes an individual with the skills of developing both tacit and explicit knowledge bases that will assist them in garnering the opportunities needed to persist through the hurdles and challenges inherent in their ventures (e.g. Dimov and Shepherd, 2005; Tang et al., 2012). This form of alertness assists the entrepreneur to be able to connecting events and activities and to be able to extract new information that presents opportunities that benefit their venture. This alertness, combined with EPFF, entails the efforts that the entrepreneur is willing to display to raise funds or get assistance to survive or grow the venture (e.g. Cardon et al.,



2017; Li *et al.*, 2020; Xu *et al.*, 2019), which might foster persistence in venture start-ups. It is based on this that this study proposes that:

*H4b.* Connection and association alertness will mediate the effect of EP for founding firms on persistence in venture start-ups by entrepreneurs in Nigeria.

*Entrepreneurial passion for founding firms, evaluation and judgment and persistence in venture start-ups*

The evaluation and judgment alertness capture the processes of noticing changes and shifts in an environment and deciding upon the dynamics that present a business opportunity (McMullen and Shepherd, 2006; Tang *et al.*, 2012). This aspect of entrepreneurial alertness supplies the entrepreneur with the necessary intuitions to recognize events that might create opportunities. The evaluation and judgment alertness also represent the non-codified, tacit knowledge arising from the various experiences of the entrepreneurs with the environment (Dimov and Shepherd, 2005). Since EPFF fosters creativity and assists entrepreneurs in identifying and displaying a commitment to founding business (e.g. Li *et al.*, 2020; Xu *et al.*, 2019), entrepreneurs who experience EPFF might be more persistent with starting up firms (Cardon *et al.*, 2017). We envisage that EPFF might foster the of experiences to evaluate and judge events and recognize opportunities in the process and may also enhance their abilities to persist with starting up businesses. It is based on this that we proposed that:

*H4c.* Evaluation and judgment alertness will mediate the effect of EP for founding firms on persistence in venture start-ups by entrepreneurs in Nigeria.

### Methodology

Participants of this study were serial entrepreneurs in Nigeria, selected from listings of SMEDAN/NBS (2020). Serial entrepreneurs as used in this study refer to individuals who own and operate more than two (2) businesses. The reason behind this choice is that serial entrepreneurs are always involved in discovering or creating opportunities for founding new ventures. However since there is no list of serial entrepreneurs, this study utilized manufacturers. According to SMEDAN/NBS's (2020) listing, there are 2234 small manufacturing businesses in the Five South Eastern States of Nigeria:

- (1) Abia State = 559, i.e. 25%;
- (2) Anambra State = 469, i.e. 21%;
- (3) Ebonyi State = 536, i.e. 24%;
- (4) Enugu State = 424, i.e. 19%; and
- (5) Imo State = 246, i.e. 11%.
- (6) We accessed these serial entrepreneurs through the SMEDAN/NBS (2010) and (2020)'s directories. Entrepreneurs who have been able to remain in business for 10 years and who have been able to find more than two firms were contacted about this study. The choice of these entrepreneurs was based on an assumption that being able to remain in business for this time (i.e. 2010–2020) and be able to find other businesses implies that they have a passion for founding business and that they might have been persistent with starting up businesses amidst threats and challenges inherent in the business environment.

### *Sample and procedure*

We adopted a simple random sampling technique and arrived at 342 small manufacturing businesses i.e. at a 5% tolerance error margin (Yamane, 1973). This sampling technique was used because the study population is known, our study design was cross-sectional, thus a simple random sample of the entire population would serve the purpose. A consent note that explained the conditions of participation (i.e. voluntary, confidential and anonymous) was attached to the questionnaire designed for this study. A face-to-face approach was adopted in the administration of the questionnaire to the owners (entrepreneurs) of these manufacturing firms. This was to ensure that we gathered enough responses and observed the behaviors of the respondents to ensure that they did not respond under compelling circumstances. To ensure that there was no bias in the distribution of the study's instruments, we adopted a simple proportionate distribution approach, utilizing the percentages of contribution to the total population by each state, in appropriating the sample size. For each of the five states, we appropriated the questionnaire thus: (Abia State, 25% = 86; Anambra State, 21% = 72; Ebonyi, 24% = 82; Enugu State, 19% = 65 and Imo State, 11% = 38). With the aid of research assistance, we did an on-the-spot collection of the data (a paper and pencil approach), because we realized that the participants were busy and the collection of the questionnaires may be difficult after the visit. The entrepreneurs were contacted before the visit and were approached in their offices. The questionnaire was divided into two: section A sought information on the firm's age, the number of firms founded by the entrepreneurs and the managers' gender, and section B contained the main questionnaire. We ensured that the participants understood that their responses were strictly for academic purposes and that their identities were concealed. This enabled us to connect with 221 respondents (excluding the respondents with missing data) from five different states in Nigeria.

We found that 92 (41.6%) firms have operated their businesses for at least 10 years; 158 (72%) entrepreneurs have founded more than five firms; 87 (39.4%) firms have operated for at least 20 years; and 42 (19.0%) firms have operated for above 20 years. 157 (71.0%) of the firms are owned by male entrepreneurs, and 64 (29.0%) of the firms are owned by a female.

### **Measures**

This study adapted Cardon *et al.* (2013)'s Entrepreneurial Passion Scale; George (1992)' Entrepreneurial Persistence Scale; and Tang *et al.* (2012) Entrepreneurial Alertness Scale in designing the research instrument. However, due to the context in which the current study is situated, minor adjustments were made to some of the scales. The measures of all scales aside from the controlled variables were belted on a five-point Likert scale of 1 = Strongly Disagree and 5 = Strongly Agree.

### *Control variables*

Firm age is used in the current study to represent the total number of years that a small enterprise has been in operation. According to SMEDAN/NBS (2020) listings of small manufacturing businesses, the least age of a registered sole proprietorship in South Eastern Nigeria is five years. We, therefore, controlled for the ages of these firms by categorizing them into 1 = 1-10; 2 = 11-20 and 3 = 20 and above. We also measured the number of firms that have been founded by the entrepreneurs. The scale was categorized thus: 1 = 2 firms, 2 = 3 firms, 3 = 4 firms and 4 = 5 or more firms. Gender, as utilized in the current study, represents the gender of the sole proprietor. The measure was belted a two-point scale of 1 and 2, where 1 represented females and 2 represented males.

*Entrepreneurial passion.* The EP scale as designed by [Cardon et al. \(2013\)](#) was adopted and utilized in the current study. The scale is multidimensional: the passion for inventing, founding and developing firms.

Passion for founding firms scale. This scale consisted of four items written to assess how the entrepreneurs regard business establishment as important (e.g. “establishing new businesses energizes me”), energizing (e.g. “owning my own company energizes me”) and enjoyable (e.g. “nurturing a new business through its emerging success is enjoyable”). The four items of this scale loaded fine as well, and Cronbach’s alpha was 0.802. Suggest “Factor loadings are significant at  $p \geq 0.5$ .” ([Table 1](#)).

*Entrepreneurial alertness.* The entrepreneurial alertness scale as designed by [Tang et al. \(2012\)](#) was utilized in the current study. The scale is multidimensional: searching and scanning alertness; association and connection alertness; and evaluation and judgment alertness.

Searching and scanning alertness scale. This scale consisted of six items that measure for example: how the entrepreneurs “often interact with others to acquire new information”, “regularly read news, magazines, or publications to get information” and are insatiable with regards to seeking information. In all, only five items out of the six items loaded under this scale [i.e. the item: “I am an avid information seeker” had a factor loading  $< 0.5$  below the benchmark proposed by [Cohen \(1988\)](#)], and the Cronbach’s alpha of this scale was 0.756 ([Table 1](#)).

Variables	Indicators	Loading	Convergent and discriminant validity check				Reliability test	
			AVE	DV	MSV	MaxR(H)	CR	Cronbach’s alpha
Founding	FND1	0.76	0.503	0.709	0.229	0.808	0.802	0.709
	FND2	0.74						
	FND3	0.65						
	FND4	0.68						
Search and Scanning	SCN1	0.78	0.655	0.809	0.378	0.906	0.905	0.810
	SCN2	0.80						
	SCN3	0.82						
	SCN4	0.84						
	SCN5	0.80						
Association and connect	ASS1	0.71	0.509	0.713	0.229	0.762	0.756	0.713
	ASS2	0.76						
	ASS3	0.66						
Evaluation and judgment	EVJ1	0.82	0.741	0.860	0.378	0.921	0.919	0.861
	EVJ2	0.88						
	EVJ3	0.87						
	EVJ4	0.88						
Persistence	PERST1	0.83	0.734	0.867	0.275	0.945	0.943	0.857
	PERST2	0.85						
	PERST3	0.87						
	PERST4	0.90						
	PERST5	0.86						
	PERST6	0.83						

**Table 1.**  
Confirmatory factor analysis

**Notes:** AVE = average variance extracted; DV = discriminant validity; CR = composite reliability; MSV = maximum shared variance  
**Source:** Table by Authors (2023)

Association and connection alertness scale. This scale consisted of three items that measure, for example, the extent to which entrepreneurs “see the association between seemingly unrelated information,” and are “good at connecting points.” All three items loaded fine with a Cronbach’s alpha of 0.905 (Table 1).

Evaluation and judgment alertness scale. This scale consists of four items that measure, for example, the extent to which entrepreneurs “have instincts to find opportunities with potential,” and the extent to which they have talents for separating high-value opportunities from low-value opportunities. The four items of this scale loaded fine as well, and Cronbach’s alpha was 0.919 (Table 1).

*Entrepreneurial persistence.* George’s (1992) scale consisting of six items was used as the outcome variable of the current study. The items were written to determine how entrepreneurs: “continue to work hard when another quit” and the extent to which they indicated that they never give up no matter how challenging their work is. The six items were loaded completely with Cronbach’s alpha of 0.943 (Table 1).

## Data analyses

Before delving into the tests of the hypotheses properly, preliminary data diagnostics were performed on the data gathered from the survey. A confirmatory factor analysis (CFA) of six constructs, namely, EPPF searching and scanning alertness; association and connections alertness; evaluation and judgment alertness; and persistence in venture start-ups, was performed, and they all loaded with standardized estimates above the base value of 0.5 (Schreiber *et al.*, 2006). The average variance extracted (AVE) for these constructs was also above the 0.5 threshold (Bagozzi and Yi, 1988; Hu and Bentler, 1999; Schreiber *et al.*, 2006), ranging from 0.503 for EP for founding to 0.734 for persistence in venture start-ups (Table 1).

The composite reliability (CR) scores above were all above 0.7. With regards to the fit of the model, with values of the  $\chi^2/df = 2.13$ ; goodness of fit = 0.830; the adjusted goodness of fit index = 0.787; incremental fit index = 0.921; comparative fit index = 0.921; Tucker–Lewis index = 0.908; root mean square residual = 0.063; and root mean square error of approximation = 0.072, the model according to Poon *et al.* (2006) and Bagozzi and Yi (1988) is fit.

## Results

### *Descriptive*

Table 2 presents the means, standard deviations, reliabilities and bivariate correlations between the variables of the study. The correlation indicated that EP for founding businesses has a positive relationship with persistence in venture start-ups. Similarly, searching and scanning; association and connection; and evaluation and judgment also have positive relationships with persistence in venture start-ups.

### *Hypotheses testing*

The data of the current study were analyzed with the Statistical Package for Social Sciences, v. 23 (SPSS). The CFA was analyzed with the Analysis of Moment Structures, v. 24 (AMOS), while the James Gaskin plugin was used to estimate the CR scores. For the test of hypotheses, we used the Hayes approach which implies using a simultaneous entry. The bootstrapping effect here computed was at 10,000. This was done with the aid of an SPSS macro known as PROCESS, v. 3, where we used model 4 to estimate our mediation model while also taking care of the covariates implied in the model. A summary of the direct effects is shown in Figure 2, while the indirect effects are shown in Table 3.

The regression model (Figure 2) showed no sufficient evidence to support *H1*. EPFF firms had no statistically significant direct relationship with persistence in venture start-ups ( $\beta = 0.053, p > 0.001$ ). The coefficient reflects the direct effect (*c'*) of EPFF on persistence in venture start-ups within the path model. Also, the total effects (path *c*) of EPFF on persistence in venture start-ups show significant positive relationships ( $\beta = 0.509, p < 0.001$ ).

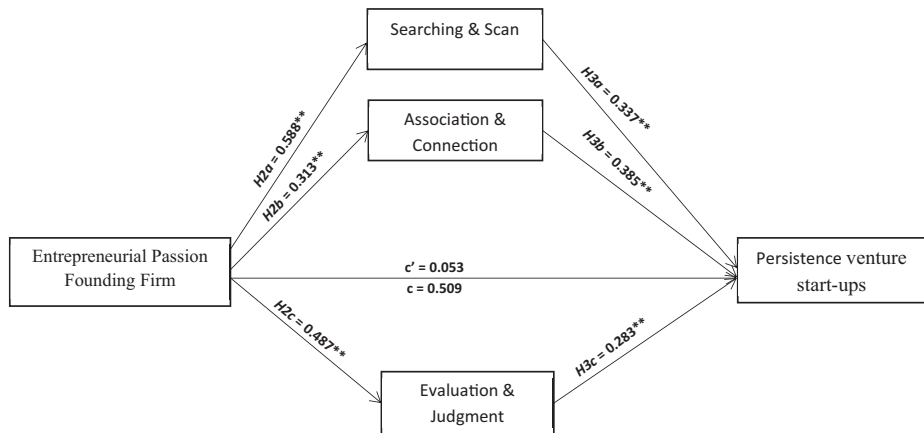
*Impact of entrepreneurial passion for founding firms on searching and scanning, association and connection and evaluation and judgment.* Concerning the second set of hypotheses, where the direct relationships between EPFF and the mediating variables were

Variables	Mean	S.D	1	2	3	4	5	6	7
Age	2.21	0.810	1						
Diversity	1.60	0.491	0.232**	1					
Founding	12.78	3.586	0.213**	0.173*	(0.802)				
Searching	18.18	5.177	0.349**	0.231**	0.408**	(0.756)			
Association	10.86	3.044	0.194**	0.218**	0.369**	0.286**	(0.905)		
Evaluation	15.15	4.126	0.222**	0.250**	0.423**	0.558**	0.265**	(0.919)	
Persistence	23.23	5.796	0.486**	0.520**	0.315**	0.485**	0.354**	0.437**	(0.943)

**Table 2.**  
Descriptive statistics, correlations and reliabilities

**Notes:** \*\*Correlation is significant at the 0.01 level (two-tailed); \*Correlation is significant at the 0.05 level (two-tailed)

**Source:** Table by Authors (2023)



**Figure 2.**  
Results of the structural model

**Source:** Figure by Authors (2023)

Path	Indirect effects	Bias-corrected 95% CI	
		Lower	Upper
Founding firms→searching and scanning→persistence	0.1982	0.0837	0.3414
Founding firms→association and connection→persistence	0.1204	0.0380	0.2267
Founding firms→evaluation and judgment→persistence	0.1379	0.0427	0.2580

**Table 3.**  
Summary of results of hypotheses testing

**Source:** Table by Authors (2023), extracted from PROCESS V 3 outputs

investigated, the findings, as shown in Figure 2, indicated that EPFF has a positive and significant relationship with searching and scanning ( $\beta = 0.588, p < 0.001$ ). Also, EPFF has a positive significant relationship with association and connection ( $\beta = 0.313, p < 0.001$ ). There is also a positive and significant relationship between EPFF and evaluation and judgment ( $\beta = 0.487, p < 0.001$ ). These findings, therefore, present enough evidence that support all the second sets of hypotheses of this study.

*Impact of searching and scanning, association and connection and evaluation and judgment on persistence in venture start-ups.* Concerning the third set of hypotheses, where the direct relationships between the mediating variables and persistence in venture start-ups were investigated, the findings as shown in Figure 2, indicated that searching and scanning alertness has a positive and significant relationship with persistence in venture start-ups ( $\beta = 0.337, p < 0.001$ ). Association and connection have a positive significant relationship persistence in venture start-ups ( $\beta = 0.385, p < 0.001$ ). There is also a positive and significant relationship between evaluation and judgment and persistence in venture start-ups ( $\beta = 0.283, p < 0.001$ ). These findings, therefore, present enough evidence that support all the third sets of hypotheses of this study.

#### *Indirect effects*

*The influence of entrepreneurial passion for founding firms on persistence in venture start-ups via the mediators.* For *H4a*, b and c, the influence of EPFF on persistence in venture start-ups was tested through a parallel mediation that involved: searching and scanning alertness, association and connection alertness and evaluation and judgment alertness. We utilized bootstrapping to examine the indirect effects. As presented in Table 3, EPFF on persistence in venture start-ups through searching and scanning alertness was positive and significant ( $\beta = 0.198, p < 0.001$ ). Association and connection alertness was positive and significant ( $\beta = 0.120, p < 0.001$ ) and evaluation and judgment alertness was positive and significant ( $\beta = 0.138, p < 0.001$ ) with a 95% bias-corrected confidence interval as well. These mediation tests demonstrate that entrepreneurial alertness (searching and scan; association and connection; and evaluation and judgment) mediates the path through which EPFF influences persistence in venture start-ups; thus, enough evidence exists to support the fourth set of hypotheses proposed in this study.

## Discussion

The current study examined the direct effect of EPFF on persistence in venture start-ups, the indirect effect of entrepreneurial alertness and the total effect of EPFF and entrepreneurial alertness on persistence in venture start-ups. The study assumed that the passion for founding firms and serial entrepreneurs would persist with founding firms, notwithstanding the threats and challenges. Also, combining such passion with various forms of alertness would further foster their persistence in venture start-ups. These propositions were tested using a sample of serial entrepreneurs in Nigeria.

The findings from the study did not confirm that EPFF significantly impacts persistence in venture start-ups, although the effect was positive. This insignificant effect indicates that EPFF was not necessarily responsible for persistence in venture start-ups in Nigeria. Perhaps the reason for the persistence in venture start-ups is strictly to survive. The country has been facing numerous economic downturns for a while, and a large portion of the population may be switching to entrepreneurship as an alternative for survival. Gielnik *et al.* (2015) made similar findings that EP had no link between EP and entrepreneurial efforts amongst entrepreneurs in Germany. However, the positive effect between EPFF and persistence in venture start-ups indicates that only a few portions of the start-ups are driven by passion.

This conforms with findings of previous studies that EP fosters positive entrepreneurial behaviors (e.g.). Hence, EP is necessary for persistence in venture start-ups.

Expectedly, the current study confirmed that EPFF has positive and significant relationships with the various domains of entrepreneurial alertness (searching and scanning, association and connection, evaluation and judgment). These findings agree with the work of [Campos \(2017\)](#) who found that passion for founding firms fosters entrepreneurial alertness among entrepreneurs in Mexico. Similarly, the findings corroborate with the works of [Li \*et al.\* \(2020\)](#), who found that passion for founding firms fosters creativity and assists entrepreneurs in raising funds or securing investors. The findings are also in tandem with the works of [Xu \*et al.\* \(2019\)](#), who found that passion drives discovery. The findings also corroborate [Sheldon and Houser-Marko's \(2001\)](#) work that a display of affection (passion) fosters and directs efforts toward the creation or discovery of opportunities. These findings further strengthen the importance of the SCM in explaining how passion can foster alertness for opportunities. Thus, passion drives entrepreneurial alertness in serial entrepreneurs.

The findings of the current study also showed that each of the domains of entrepreneurial alertness is associated positively with persistence in venture start-ups. These findings corroborate [Hu and Ye \(2017\)](#) view that searching and scanning alertness furnishes an individual with the ability to develop knowledge required to persist with their goal pursuit. [Ghasemi and Rowshan \(2016\)](#) also made a similar finding in their work that suggests that association and connection alertness assist entrepreneurs in gathering knowledge about opportunities needed to persist through the hurdles and challenges inherent in their ventures. The findings between evaluation and judgment alertness also agree with the findings of [Adomako \*et al.\* \(2018\)](#) that entrepreneurs with this type of alertness will most likely foster innovation that can also enable persistence. These findings indicate that the more alert entrepreneurs are to opportunities, the more likely they will be persistent in their venture start-ups. Hence, entrepreneurial alertness for opportunities, as the TOE suggests, is necessary for entrepreneurs to be persistent in venture start-up.

Finally, the relationship between EPFF and persistence in venture start-ups was mediated by the various domains of entrepreneurial alertness. Specifically, EPFF had a positive relationship with persistence in venture start-ups via a parallel link with searching and scanning alertness, association and connection and evaluation and judgment. This finding is not surprising because evidence from previous studies showed that scanning and searching for information, connecting previously disparate information and making evaluations on the existence of profitable business opportunities are good predictors of entrepreneurial behaviors (e.g. [Tang \*et al.\*, 2012](#)). This result also reiterates the importance of entrepreneurial alertness as it concerns fostering persistence in venture start-ups. Since entrepreneurial alertness reflects entrepreneurs' passion, particularly for founding firms, such passion can encourage entrepreneurs to be persistent in founding firms. In line with our arguments on SCM and TEO, we suggest that the passion that entrepreneurs experience for founding firms can trigger their alertness for opportunities and also increase their persistence in venture start-ups.

### **Conclusion and implications for theory and practice**

The current study used the SCM and TEO to examine the association between EPFF and persistence in venture start-ups. Our results highlighted the significance of EPFF as a factor that drives persistence in venture start-ups, particularly in a developing economy. This study has implications for entrepreneurs, policymakers and researchers in the area of entrepreneurship. This study also provides considerable insights into theory and practice.

This study extends the theories and makes contributions on how EPFF can enhance persistence in venture start-ups to the literature. For instance, the study provided empirical evidence that supports that EPFF impacts directly and indirectly on persistence in venture start-ups through entrepreneurial alertness. The findings show that the passion that entrepreneurs experience for founding firms can increase their alertness levels and enable them to develop higher persistence in venture start-ups. Also, such entrepreneurs who have a penchant for founding firms can boost the economy because their persistence in venture start-ups will help create employment, develop local technology and promote the export and import of goods and services that are healthy for growing FDI in the economy.

### Limitations and future directions

Notwithstanding the useful contributions made by this study to the entrepreneurship literature, the findings of this study have some limitations. First, the study is centered only on firms in Nigeria. Therefore, caution should be applied in generalizing the findings because of sociocultural factors. What this implies is that the belief systems of different countries might affect how they experience EP. Thus, a replication with other types of firms and in different contexts and cultures could be utilized in examining these relationships in future studies. Second, our samples were mainly selected from manufacturing firms in the five states in the South Eastern region of Nigeria. Future research can evaluate this situation in other regions, as well as on firms in different sectors within Nigeria and across other countries. Lastly, the results of our study suggest that the other two facets of EP (i.e. inventing and developing) may not foster persistence in venture start-ups for entrepreneurs with serial personalities as investigated in this study. But caution should be applied in generalizing the findings because it captures/reflects the perceptions of only one region (South East) in Nigeria. Thus, future studies from other contexts and cultures should consider investigating whether EPs for inventing and developing might have different effects on persistence in venture start-ups of serial entrepreneurs within their context.

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