

# Entrepreneur ambidexterity in Ecuadorian SMEs: Analysis of owner – managers' behavior

## Ambidestreza emprendedora en PYMEs ecuatorianas: Análisis del comportamiento de los propietarios - gerentes

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### Abstract

The article explores the ambidextrous behavior of entrepreneurs and the impact that exploration and exploitation have on the performance of SMEs. Based on a sample of 774 Ecuadorian owners, evidence was found that those businesses led by people with ambidextrous behavior or who are inclined to explore tend to grow, favor better performance of their SMEs, and this behavior is related to people with high levels of education and Type B personality.

**Keywords:** ambidexterity; smes; owner – managers' behavior; entrepreneur

### Resumen

El artículo explora el comportamiento ambidiestro de los emprendedores y el impacto que la exploración y la explotación tienen en el desempeño de las PYMEs. Con base en una muestra de 774 propietarios ecuatorianos, se encontró evidencia de que aquellos negocios liderados por personas con comportamiento ambidiestro o que se inclinan a la exploración tienden a crecer, favorecen un mejor desempeño de sus PYMEs, y este comportamiento está relacionado con personas con altos niveles de educación y personalidad Tipo B.

**Palabras clave:** ambidestreza; pymes; comportamiento de propietarios - gerentes; emprendedor

## 1. Introduction

Organizational ambidexterity has been related to various organizational variables such as competitive advantage, organizational performance and short and long-term survival (Alpkan & Gemici, 2016; Andriopoulos & Lewis, 2008; Dolz, Safón, Iborra, & Dasí, 2014; Koryak, Lockett, Hayton, Nicolaou, Mole, 2018; Raisch & Zimmermann, 2017). Also ambidexterity have been linked with the organization's ability to adapt and change while attending

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the complex demands of its environment (Dolz et al., 2014; Zhang, Edgar, Geare, O'Kane, 2016). This fact makes the study of ambidexterity very interesting in the field of small and medium-sized enterprises (SMEs) taking into account that this kind of businesses show generally a high rate of mortality, have limited resources and the owner-manager or small group of individuals makes all decisions (Dai, Du, Byun, & Zhu, 2017; Mashahadi, Ahmad, & Mohamad, 2016; Volery, Mueller, & von Siemens, 2015). The aforementioned makes the owner-managers the principal actors to face ambidexterity behavior, making decision about what to do, in what situation and where assign scarce resources in order to ensure the survival of their enterprises.

We contextualize our study in Ecuador because its business reality is mainly composed of micro and SMEs. From 2012 to date the micro, small and medium enterprises has been the most common form of business organization. According to the National Institute of Statistics and Census (INEC), the governing body of national statistics and responsible for generating the official statistics of Ecuador for decision making in public policy, more than 99% form of business are micro and SMEs, generating about 60% of all jobs and 26% of sell in the country (Instituto Nacional de Estadística y Censos, 2018).

The behavior that exploit their current knowledge, while exploring new opportunities that go beyond present knowledge, is a business capacity recognized as organizational ambidexterity. This capacity has a significant impact on the achievement of superior performance (Koryak et al., 2018; Zhang et al., 2016; Nicolau-Juliá, Expósito-Langa, & Tomás-Miquel, 2015; Solís Molina, Hernández Espallardo, & Rodríguez Orejuela, 2015).

Ambidexterity have being defined as the capacity to behave at the same time using exploiting and exploring (Koryak et al., 2018; Raisch & Zimmermann, 2017; Huang, Newell, Huang, & Pan, 2014). This implies that owner-managers have to decide how to plan their time between these two activities for their development simultaneously (Bonesso, Gerli, & Scapolan, 2014).

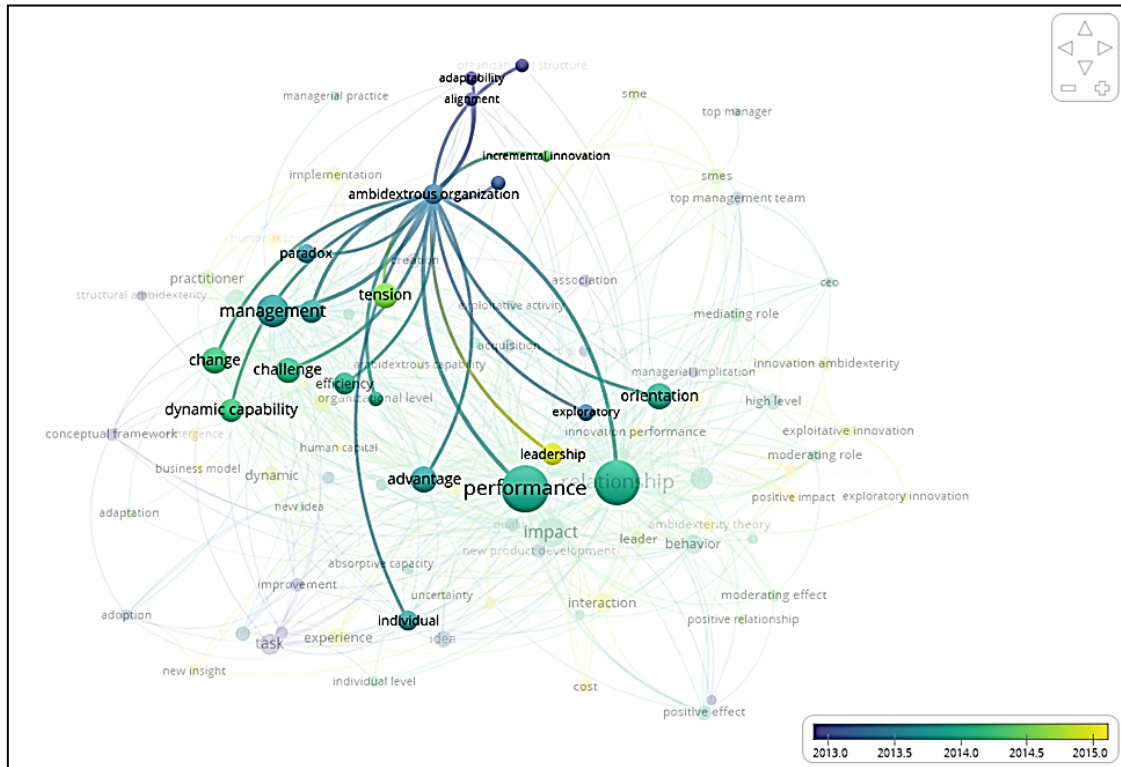
In this paper, we adopting a micro level of analysis through studying if exploiting, exploring or ambidexterity behavior of owner – managers in SME affects the performance of their enterprises. Our study follows others that indicate that ambidexterity is based on the individual competences of owner - managers to explore and exploit; which implies that the ambidexterity, and the mechanisms that aim to promote it, only work because there are ambidextrous individuals (Raisch & Zimmermann, 2017; Zhang et al., 2016; Volery et al., 2015; Bonesso et al., 2014; Raisch, Birkinshaw, Probst, & Tushman, 2009). Very few prior studies pay attention to explain how ambidexterity affect organizational performance through what people actually do (Andriopoulos & Lewis, 2008; Zhang et al., 2016; Huang et al., 2014; Bonesso et al., 2014; Cao, Gedajlovic, & Zhang, 2009; Gupta, Smith, & Shalley, 2006). Deepening the investigation of the individual side of ambidexterity may contribute to the understanding of how the orientation towards exploration and exploitation can impact the performance of an enterprise (Bonesso et al., 2014; Laplume & Dass, 2015). We think that the understanding of the forms of behaviors entrepreneurs actually perform concerning ambidexterity will enhance the field of entrepreneurship research.

Research on organizational ambidexterity began to rocket since the early years of this century. Research on the conceptualization, antecedents, moderators, modes, results and tensions of the organizational ambidexterity has been addressed both theoretically and practically. The studies in prestigious journals in administration that address the issue of ambidexterity have increased since 2000 up today (Figure 1).



challenges, adaptation, improvement, managers, managerial practice, performance and SME, among others. In figure 3, the key words related to the organizational ambidexterity are visualized in a clearer way, taking into account the cognitive closeness of key words.

**Figure 3**  
Bibliometric network of co-occurrence of keywords (ambidextrous organizations).



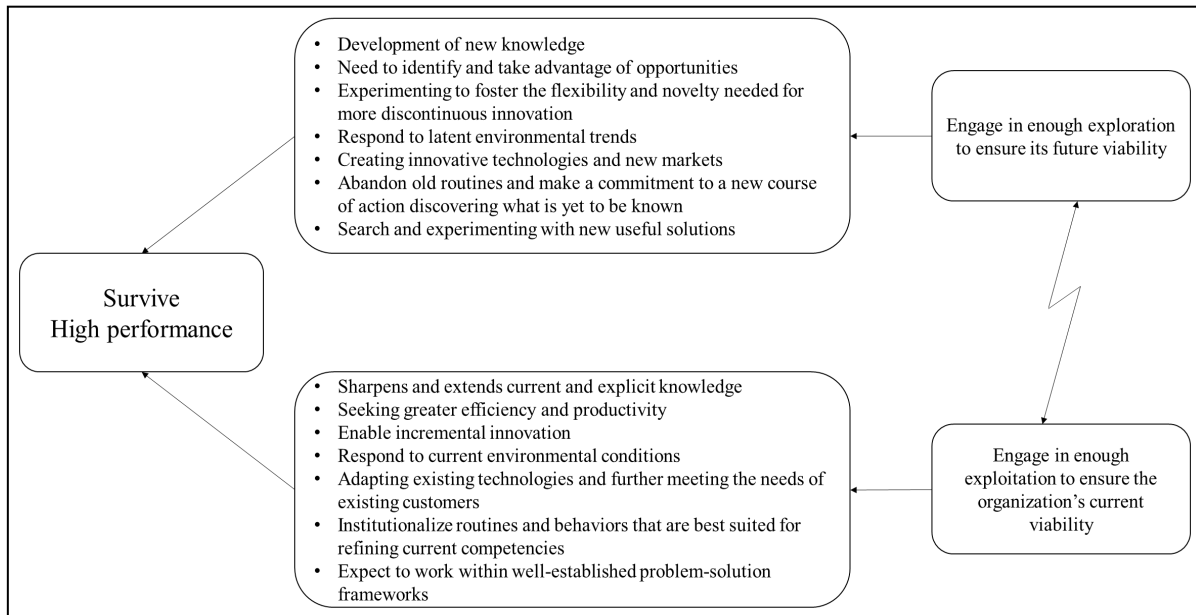
Source: Prepared by the authors on the basis of VOSviewer version 1.6.14.

The figure above shows the closest connections with the organizational ambidexterity, there are clear relations with performance and more recently with leadership. All of which reinforces the objective of this investigation.

Organizational ambidexterity implies for the owner-managers to manage pre-existing conflicts between two different things at the same time (Alpkan & Gemici, 2016; Mashahadi *et al.*, 2016). The aforementioned is important since the literature reviewed states that the long-term success of an organization depends on the ability of the owner-managers to exploit while exploring simultaneously (Zhang *et al.*, 2016; Dai *et al.*, 2017; Raisch *et al.*, 2009; Chen, 2017; He & Wong, 2004; Lubatkin, Simsek, Ling, Veiga, 2006). The problem is that neurological science has demonstrated that the human brain focus simultaneously on specific, day-to-day activities and more collective, long-term objectives (Jenkins, Zyzanski, & Rosenman, 1971). However, previous research recognizes that in order to achieve better business performance it is necessary to explore to identify opportunities and exploit to capitalize on an enterprise's existing capabilities (Koryak *et al.*, 2018; Dai *et al.*, 2017; Raisch & Zimmermann, 2017; Volery *et al.*, 2015; Nicolau-Juliá *et al.*, 2015; Huang *et al.*, 2014; Chen, 2017; Lubatkin *et al.*, 2006).

Although exploration and exploitation are forces that tend to mutually enhance when acting simultaneously, some research highlights the contradictory nature of both components of ambidexterity (Alpkan & Gemici, 2016; Koryak *et al.*, 2018; Raisch & Zimmermann, 2017; Raisch *et al.*, 2009; Chen, 2017). Figure 4 shows the conflicting nature of this pair.

**Figure 4**  
Conflict between exploitation and exploration



Source: Prepared by the authors

Previous research highlight that a concentration on any of these behavior may affect the enterprises performance thus proposed the balancing of them, however they recognize that there is no clarity on how this balance can be accomplished (Koryak *et al.*, 2018; Mashahadi *et al.*, 2016; Volery *et al.*, 2015; Bednarek, Burke, Jarzabkowski, & Smets, 2016).

Favoring exploitation can inhibit organizations from effectively responding to its environment, eliminating improvement that may lead to innovations (Raisch & Zimmermann, 2017; Laplume & Dass, 2015). An excessive weight on exploration could ignore the current needs of the environment and distracting key resources away from successful products and processes of the organization and impeding, with that behave, the survival of the enterprise (Koryak *et al.*, Mole, 2018; Raisch & Zimmermann, 2017). We found empirical evidence that the successful enterprises reconcile within their management behavior between exploration developing similar levels of both activities (Alpkan & Gemici, 2016; Raisch & Zimmermann, 2017; Laplume & Dass, 2015; He & Wong, 2004), we also found an association between performance and maximization of both exploration and exploitation was also found.

Previous research has identified ways to reconcile conflicting trends between exploration and exploitation (Volery *et al.*, 2015; Gupta *et al.*, 2006; Lavie *et al.*, 2010). In our opinion, temporal separation is the way that fix better to SME. This would allow both exploration and exploitation to coexist, but at different times, so there would be cycles between exploitation and exploration periods. The aforementioned, aligned us with those researches that find it difficult the execution of exploration and exploitation within the same domain at the same time (Laplume & Dass, 2015; Chen, 2017). We also think that this situation is becoming more pressing in the SMEs that sometimes, do not have abundant personnel, economic and financial resources, their structures are simple or ad hoc and they complement systems that allow them to handle the information required to face the contradictory processes which requires ambidexterity (Dolz *et al.*, 2014; Cao *et al.*, 2009; Lubatkin *et al.*, 2006).

Another interesting idea is the one that discards the distinction between exploration and exploitation and proposes that both activities should be viewed as a continuum rather than a choice between the two (Volery *et al.*, 2015; Gupta *et al.*, 2006; Lavie *et al.*, 2010). This approach support the transition from exploration to exploitation and vice versa, which we find suitable for SMEs.

We believe that the movement from exploitation to exploration is contingent. Exploitation lays the foundations of the enterprise in the market and allows exploration. Once the objectives of the exploration are achieved, it is necessary to re-exploit until the experience is gained and the changes and innovations introduced are settled. Recent research on ambidexterity recognizes that the structures, processes, strategies and capacities required for exploration and exploitation are substantially different (Alpkan & Gemici, 2016; Koryak *et al.*, 2018; Raisch & Zimmermann, 2017; Raisch *et al.*, 2009). SMEs mostly lack of those elements. In addition, the organizational contexts to take decision-making, the structures, and processes to act at the personal level is created by the owner manager (Dolz *et al.*, 2014; Raisch *et al.*, 2009). That is why in SMEs the individual level is relevant.

The flexibility of SMEs allows owner - managers to switch from one behavior to another more easily when the situation requires it. They are closest to the enterprise's operating core, to the changing trends in environment needs, and more involved in the daily development of their enterprises and, therefore, they are informed about when and how is it necessary to exploit or to explore (Lubatkin *et al.*, 2006)

The real paradox is that, by the very nature of SMEs, ambidexterity is hindered, but at the same time, the complexity of their environment makes it necessary (Volery *et al.*, 2015; Laplume & Dass, 2015). Ideally, exploration and exploitation would converge on the owner - manager so that he could boost the performance of his company in a contingency, ambidextrous manner. "Depending on the context, either ambidexterity or punctuated equilibrium (switching across time) may serve as the more appropriate balancing mechanism between exploration and exploitation" (Gupta *et al.*, 2006, p.703).

As we said before owner – manager is a key element to study ambidexterity, but individual dimension of ambidexterity is not well explored, even when some of these studies assume that the individual's ability to explore and exploit is the essence of ambidexterity (Koryak *et al.*, 2018; Raisch & Zimmermann, 2017; Bonesso *et al.*, 2014; Raisch *et al.*, 2009; Cao *et al.*, 2009). At the end, the owners-managers are responsible for guiding their administrative behavior towards exploitation, exploration or a balance of them. Whatever this behavior is, following Raisch, *et al.* (2009), owner – manager must: face contradicting behaviors; involve in paradoxical thinking; accomplish multiple roles; have both a short-term and a long-term orientation; have prior knowledge to assimilate and use new knowledge.

The aforementioned studies provide strong evidence that the study of the individual level is inevitable when investigating ambidexterity. This idea is defended even when they recognize that there may be personal characteristics that prevent them from being excellent both in exploitation and in exploration (Raisch & Zimmermann, 2017; Bonesso *et al.*, 2014; Raisch *et al.*, 2009; Gupta *et al.*, 2006). Therefore, it would be interesting to find out the role of personality types in relation with exploitation and exploration (Fretwell, Lewis, & Hannay, 2013; Kirschner, Albright, & Andreassi, 1989).

Established the theoretical aspects, this study addresses the following research question: What is the behavior of owner - managers that allow them to achieve a better subsequent performance? Is there a specific personal profile that characterize those owner - managers in association with a particular behavior?

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## 2. Methodology

### 2.1. Sample

Data was collected from micro and SMEs in Santo Domingo de los Tsáchilas an economically vibrant region of Ecuador with a high presence of this kind of enterprises. The information was taken from the database published by National Institute of Statistics and Census (INEC for its acronym in Spanish). A process of filtering the data was required, seeking the completeness of the data in all the companies. The above allowed obtaining a total of 774 micro and SMEs (See Table 1).

**Table 1**  
Sample composition

Economic sectors	Size of companies by amount of sales			Total
	Micro	Small	Medium	
	(<= \$100000.00)	(\$100001.00 – \$1000000.00)	(\$1000001.00 – \$2000000.00)	
Commerce	65	244	76	385
Services	72	113	18	203
Agriculture, forestry and fishing	26	62	22	110
Manufacturing industries	4	38	10	52
Building	7	10	5	22
Exploitation of Mines and Quarries	1	0	1	2
<b>Total</b>	175	467	132	774

Source: Prepared by the authors on the basis of Comisión de la Comunidad Andina (2008) and INEC Ecuador.

Table 2 shows the characterization of the owner – managers participating in the study.

**Table 2**  
Characterization of the owner – managers.

Variables		Percent
Sex	Female	55.0
	Male	45.0
Age	39 or less	38.2
	40 - 50	38.8
	51 - 60	20.2
	More than 60	2.8
Education	Some primary or less	8.0
	Complete primary	42.5
	Completed secondary	43.7
	Full University	5.4
	Post-graduate	0.4

Source: Prepared by the authors.

## 2.2. Measures

### 2.2.1. Exploitation and exploration

Several investigations use scales to measure exploitation and exploration (Dolz et al., 2014; Zhang et al., 2016; Mashahadi et al., 2016; Volery et al., 2015; Laplume & Dass, 2015; He & Wong, 2004; Lubatkin et al., 2006; Jenkins et al., 1971; Bednarek et al., 2016; Atuahene-Gima, 2005; Paliokaitė & Pačėsa, 2015; Wei, Zhao, & Zhang, 2014; Yu, Tao, Tao, Xia, & Li, 2017). Nicolau-Juliá, et al. (2015) conducted a research where several papers related to scales to measure exploitation and exploration were analyzed. This research showed that the developed scales do not contemplate SMEs in the context of Latin America.

Taking into account the above, a study of the scales used in the aforementioned literature was carried out. Forty-eight items were identified for exploration and forty-six for exploitation, a list reduction was made to eliminate those items that addressed a similar behavior in the same sense. Then a pilot test was conducted that allowed eliminating the items that affected the reliability of the survey and left for Exploitative capability 20 items with a Cronbach's  $\alpha = 0.821$ . In the case of the Explorative capability, there were 19 items with a Cronbach's  $\alpha = 0.853$ . In order to find a balance between the items of each behavioral orientation, it was decided to eliminate one item from the Exploitative capability that did not affect the Cronbach's  $\alpha$  of the scale. The survey asked the owner - managers to assess their current behaviors during the past seven years. This behavior was assessed using the nineteen-item measure and a five-point scale ranging from -3 (strongly disagree - does not use the behavior) to

3 (strongly agree - adopts the behavior) for both the orientation to exploit and to explore. The formula used to calculate exploitation and exploration is presented below:

$$B_c = \frac{\sum_{i=1}^n (3)Sa_i + \sum_{i=1}^n (1)A_i + \sum_{i=1}^n (0)U_i + \sum_{i=1}^n (-1)D_i + \sum_{i=1}^n (-3)Sd_i}{N} \quad (1)$$

Where:

Bc: Behavior coefficient

Sa: Strongly agree

A: Agree

U: Undecided

D: Disagree

Sd: Strongly disagree

N: Total of items

### 2.3. Personality

The Type A and Type B personality theory describes two contrasting personality. To study the personality Type A and B a questionnaire was adapted for use with owner – managers (Jenkins et al., 1971; James & Sidin, 2017; Watson Warren, Minzenmayer, & Bowler, 2006). The questionnaire presents 30 multiple-choice items and their total score can range between 35 and 380. High scores are associated with Type A personality, while low scores with Type B personality.

Sales growth percentage

To calculate sales growth rates 2009 - 2016, the information contained in the aforementioned database was used. With these data the rule was followed to calculate growth rates that establishes that the average annual rate of growth between the periods 0 and t is equal to the quotient (St/S0) raised to the power 1/t, all less than 1. The formula used is as follows:

$$\bar{g} = \left( \frac{s_t}{s_0} \right)^{1/t} - 1 \quad (2)$$

Where:

$\bar{g}$ : Growth rates.

S0: Sales base year.

St: Sales last year.

t: Number of the last year.

### 2.4. Data analysis

The investigation search for patterns with regard to the exploitation and exploration behaviors and characteristics of entrepreneurs that allow themselves to pursue ambidexterity. Nonparametric statistics was used. The Mann-Whitney U test and Kruskal-Wallis H test were used to compare differences and determine if there are statistically significant differences between two independent groups. Also a correlations was used to analyze the association between the characteristics of owner – managers and ambidexterity behavior.

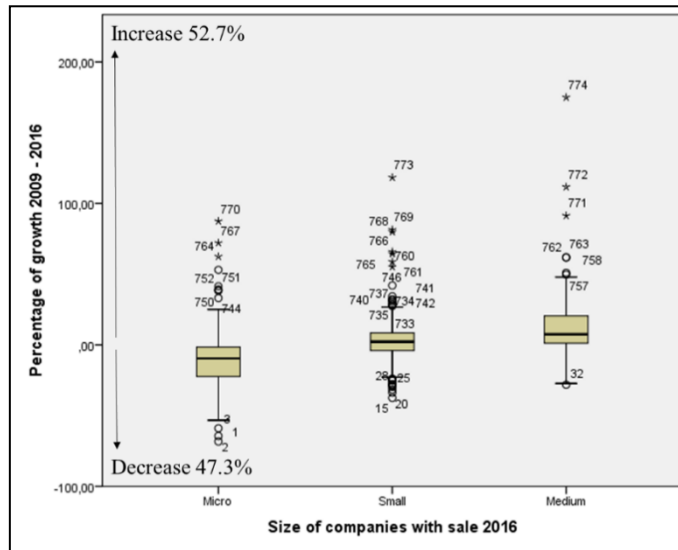
## 3. Results

We began the analysis by examining the growth trend of the SMEs involved in the study. Of the 774 SMEs surveyed, 52.7% have shown sales growth from 2009 to date, while 47.3% have a decreasing trend (Figure 5). Our concern is to find if there is a specific personal profile that characterize those owner - managers in association



with a particular behavior and if this behavior affect the behavior of the organizations as a whole. We first pay attention to the relation between owner – managers’ behavior and subsequent performance.

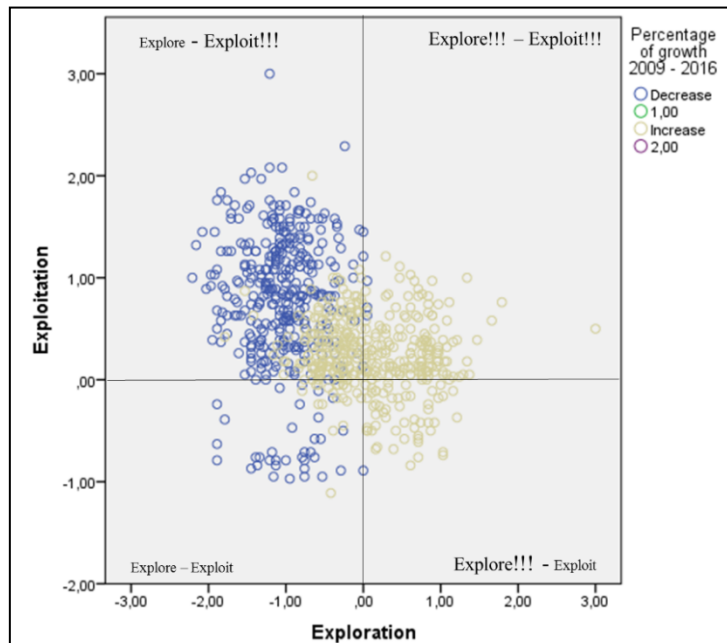
**Figure 5**  
Growth tendency



Source: Prepared by the authors on the basis of IBM SPSS Statistics 23.

Following precedent research (Mattes & Ohr, 2013), Figure 6 show the graphical relation between owner – manager behavior and growth tendency.

**Figure 6**  
Relationship behavior of owner-managers and the growth trend.



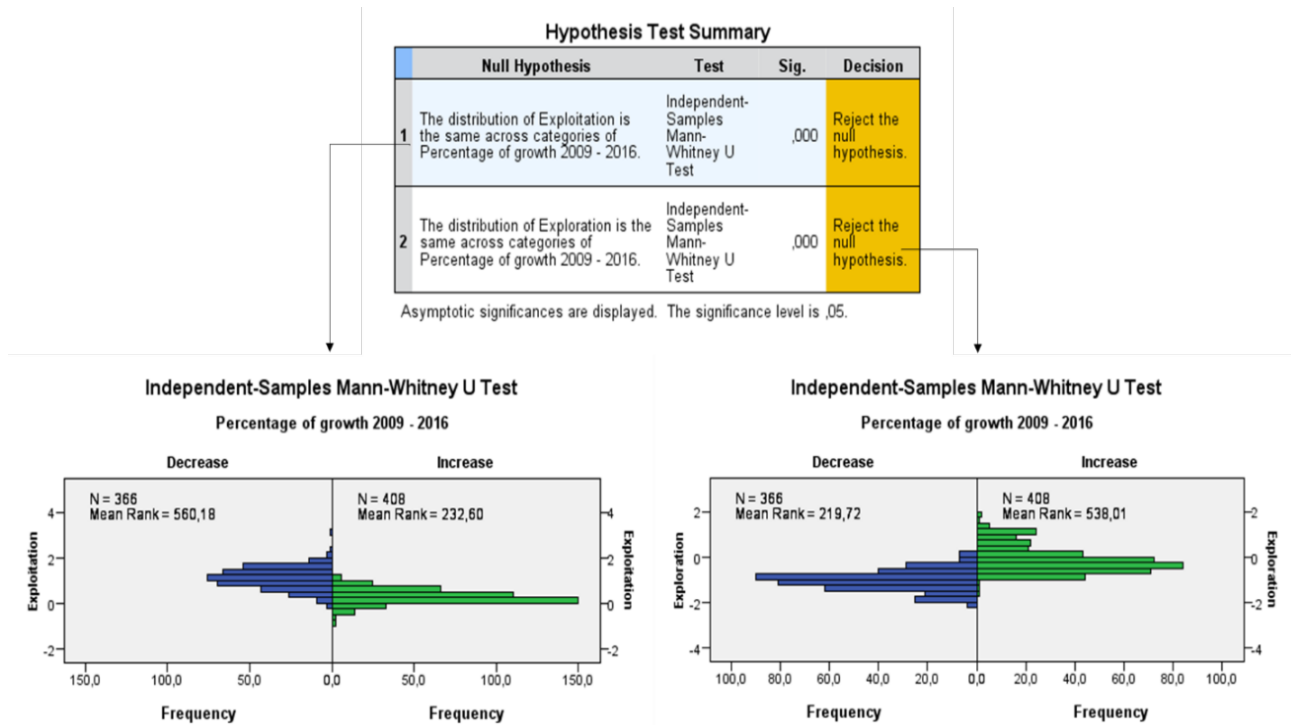
Source: Prepared by the authors on the basis of IBM SPSS Statistics 23.

Taking into consideration the aforementioned authors is possible to say that there is an apparent relationship between owner-managers’ behavior of and the growth trend:

- The SMEs which owner – manager scores High exploration and High exploitation shows a growth pattern as well as those which owner – manager scores High exploration and Low exploitation.
- On the other hand, the SMEs which owner – manager scores High exploitation and Low exploration shows a decreasing pattern as well as those which owner – manager scores Low exploration and Low exploitation. Is also true that some SMEs which owner – manager scores High exploitation and Low exploration shows a growth pattern.

In order to be sure about the previous result, a nonparametric statistics test is developed (See Figure 7).

**Figure 7**  
Results of the Mann-Whitney U test



Source: Prepared by the authors on the basis of IBM SPSS Statistics 23

The research also wants to find an association between a specific owner – managers’ personal profile with a particular behavior. Table 4 shows the results.

**Table 4**  
Correlation between exploration, exploitation and characteristics of owner – managers

		Correlations			
		Owner -manager’s sex	Education	Age grouped	Personality Type A/B
<b>Exploration</b>	Pearson Correlation	0.003	0.852**	0.036	0.632**
	Sig. (2-tailed)	0.931	0.003	0.319	0.003
	N	774	774	774	774
<b>Exploitation</b>	Pearson Correlation	0.041	-0.707**	-0.063	-0.604**
	Sig. (2-tailed)	0.253	0.003	0.08	0.003
	N	774	774	774	774

\*\* Correlation is significant at the 0.01 level (2-tailed).

Source: Prepared by the authors

We found a high correlation between both behaviors and level of education and personality of owner – managers. A high level of education is associated with exploration and low levels with exploitation. Concerning personality: a Type B personality is associated with exploration, while Type A is correlated with exploitation.

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#### 4. Discussion and conclusions

The owner - managers resolve in a different way the conflicts generated between the exploration and the exploitation, giving rise to different positions in the level and in the balance of ambidexterity. Thus, owner - managers choose how to allocate their personal and organizational resources between exploitation orientation and exploration, to develop the level they want to obtain in each of them and the balance to maintain between them (Dolz *et al.*, 2014; Koryak *et al.*, 2018).

Both, exploration and exploitation are essential behavior for the survival of companies both in the long term and in the short term (Chen, 2017; He & Wong, 2004). The findings indicate that exploration and exploitation coexist in the behavior of owner – managers. The results are consistent with literature that suggests that the businesses of owner – managers that incline to be ambidextrous tend to grow (Koryak *et al.*, 2018; Dai *et al.*, 2017; Volery *et al.*, 2015). Most of the business that grow definitively adopt an ambidextrous behavior or favored exploration over exploitation. However, in many cases even when exploration predominate the activities related to exploitation has a great presence in the behavior. A very large amount of businesses that show a decreasing trend favored the exploitation over exploration or show low levels in both behaviors. On the other hand there are few businesses that have a grow tendency with a predominant exploitation behavior. With this results we try to fulfill the lack of studies that pay attention to explain how ambidexterity affect organizational performance through what people actually do (Alpkan & Gemici, 2016; Zhang *et al.*, 2016; Huang *et al.*, 2014; Bonesso *et al.*, 2014; Cao *et al.*, 2009; Gupta *et al.*, 2006; He & Wong, 2004).

Investigating the individual side of ambidexterity (personal ambidexterity) we found that owner – managers with high education and Type B personality traits tend to explore more than the one with low education and Type A personality traits. Following our findings, there is evidence that the owner - managers control their stress, which tend to reflect before acting and enhance their creative, imaginative and friendly side to others (Kirschner *et al.*, 1989; James & Sidin, 2017; Watson Warren *et al.*, 2006; Robbins & Judge, 2013), tend to be more explorer that exploiters. We think these results help to understanding the forms of behaviors entrepreneurs actually perform concerning ambidexterity (Bonesso *et al.*, 2014; Laplume & Dass, 2015). In general, we found the findings of the interesting research for entrepreneurs since it could serve as basis for self - reflection about what type of behavior it assumes in their performance as owner - managers and the impact that it has on the performance of their businesses.

There are a number of limitations in this research. One limitation is the impossibility of generalization to interpret the performance of SMEs since the sample is ascribed to a socio - economic context that differs relatively from the rest of the country. In the same way, the characteristics of the sample do not have to be the same as those of other Ecuadorian entrepreneurs. Moreover, the heterogeneity of the sample in various sectors of the economy makes it impossible to know if any in any particular sector is more convenient, depending on the context, to explore rather than exploit or vice versa. This gap can be used in later studies.

Furthermore, some researchers sustain that the theory of Personality type A / B isn't enough to study personality (James & Sidin, 2017; Robbins & Judge, 2013). Other ways to study personality could be used in further investigation. Finally, it was not possible to know if the behavior was constant over time, if in case of having changed, how and at what specific moment did it. This is very important since the authors argue that the use of

one behavior or another can be totally contingent beyond the personal inclinations or preferences of the owner-managers.

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