



ESTRATÉGIA

STRATEGIC DECISION MAKING, ENTREPRENEURIAL ORIENTATION AND PERFORMANCE: AN ORGANIZATIONAL LIFE CYCLE APPROACH

TOMADA DE DECISÃO ESTRATÉGICA, ORIENTAÇÃO EMPREENDEDORA E PERFORMANCE: ABORDAGEM DO CICLO DE VIDA ORGANIZACIONAL

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RESUMO

Orientação Empreendedora (OE) e Tomada de Decisão Estratégica (TDE) têm sido estudadas em diferentes cenários. No entanto, não há pesquisa suficiente que combine ambos os temas e estude as maneiras como empresários tomam decisões estratégicas nas fases iniciais do ciclo de vida organizacional. O objetivo desta pesquisa foi, portanto, examinar os efeitos dos fatores associados com o tomador de decisão que influenciam OE e desempenho para duas categorias de empresas. Os resultados foram obtidos de dados empíricos a partir de duas amostras independentes de empresas em diferentes fases do ciclo de vida organizacional: fase de arranque (n = 133) e fase de crescimento (n = 173). Os resultados mostram que as variáveis de controle e SDM têm efeitos diferentes nos dois exemplos. No entanto, para ambas as amostras, não existe relação significativa entre OE e desempenho. O artigo conclui com uma discussão sobre os resultados e sugestões para futuras pesquisas.

PALAVRAS-CHAVE

Tomada de Decisão Estratégica. Orientação Empresarial. Ciclo de Vida Organizacional. Empreendedorismo. Desempenho.

ABSTRACT

Entrepreneurial Orientation (EO) and Strategic Decision Making (SDM) have been studied in a wide variety of settings. However, there is not enough research available that combines both topics and studies the ways in which entrepreneurs make strategic decisions in early stages of organizational life cycle. The purpose of this research was therefore to examine the effects of the factors associated with the decision maker influencing EO and performance for two categories of firms. The results were achieved by using empirical data from two independent samples of firms in different stages of organizational life cycle: start-up stage (n=133) and growth stage (n=173). The results show that SDM and control variables have different effects in the two samples; however, for both samples there is significant relation between EO and performance. The paper concludes with a discussion about the results and suggestions for future research.

KEYWORDS

Strategic Decision Making. Entrepreneurial Orientation. Organizational Life Cycle. Entrepreneurship. Performance.

INTRODUCTION

Research on Entrepreneurial Orientation (EO) began around 30 years ago with the original ideas of Miller (1983), although he never used the term EO in his initial study (MILLER, 2011). The EO phenomenon has become a main topic in literature about entrepreneurship during the latest decades (COVIN; WALES, 2012). EO has been conceived as a decision-making prone to favor the firm's activity. The interest in EO can be found in the results of various studies that propose EO as the predictive variable of firm performance (RAUCH; WIKLUND; LUMPKIN *et al.*, 2009).

Certainly, a wide research on EO has been produced in which analysis on EO determinant factors abounds, as well as their consequences on performance. For example, there are studies that examine the EO's precursors, some explore the direc-

tor's or founder's psychology (POON; AL-NUDDIN; JUNIT, 2006; SIMSEK; HEAVEY; VEIGA, 2010), others examine the context and organizational influences (COVIN; SLEVIN, 1990; LUMPKIN, DESS, 2001; COVIN; GREEN; SLEVIN, 2006; GREEN; COVIN; SLEVIN, 2008) and the relationship of the EO with the firm's resources and capabilities (DESS; LUMPKIN; COVIN, 1997). The great majority of studies research the implications of EO on performance, whether directly under different environments and strategies, or moderated by other conditions (RICHARD; BARNETT; DWYET *et al.*, 2004; WIKLUND; SHEPHERD, 2003, 2005).

Despite the remarkable attention that EO has received and the conceptual and empiric progress that has been achieved in several research documents, there is still major debate about its conceptualization

(BASSO; FAYOLLE; BOUCHARD, 2009), measurement (COVIN; WALES, 2012), and even about the precursors and consequences of the EO (MILLER, 2011). In the interest of making progress in the study of EO, this research incorporates a new variable, this being the Strategic Decision Making (SDM) style adopted by the entrepreneur, since by identifying the way in which the entrepreneur conceptualizes his firm and makes decisions, more knowledge on the EO's nature could be gained and, accordingly, the firm's performance. This gains greater importance if the organizational life cycle is considered as well, due to the fact that firm's main problems change during the different stages, as well as the challenges faced by the entrepreneurs (BONN; PETTIGREW, 2009).

Based on the former facts, the purpose of this research is to know to what extent specific factors of the SDM influence in the EO and how the EO influences the firm's performance, taking into account the organizational life cycle. More specifically, the research question pursued in this study is: To what extent does the SDM influence the EO and how the EO influences the firm's performance when it is found in a specific stage of the organizational life cycle? The research question is examined with empirical data from two independent samples, one for firms in a start-up stage and the other for firms in a growth stage. Thereby, this study makes three important contributions. In the first place, it proposes the SDM style as a precursory variable of the EO and the firm's performance as consequence of the EO (COVIN; LUMPKIN, 2011). Secondly, it considers the organizational life cycle as a factor that influences decision making, as well as in the EO and

in the firm's performance (BONN; PETTIGREW, 2009). Thirdly, the multitheoretic approach posed in the research (SDM, EO and organizational life cycle) offers a better explanation of the firm's performance (MILLER, 2011).

In the next section of this article a study of the literature related to this topic is presented, then, the methodology used for it is developed. After that, the results of the study are presented, and finally, an argumentation and conclusions section is presented, in which suggestions for future research are included.

LITERATURE REVIEW

Strategic decision making

SDM has been a subject of study from different academic disciplines. Schwenk (1995) mentions that some research projects have focused on its contents and have identified a decision making process. Other works have focused on environmental or organizational factors that influence in the SDM process (RAJAGOPALAN; RASHEED; DATTA, 1993).

In the initial stages of a firm's development, entrepreneurs are a special group of decision makers, since they have the greatest responsibility within the organization. This increases the importance of cognitive factors that intervene in the entrepreneur's decision making. As a matter of fact, previous studies have already highlighted the cognitive differences between entrepreneurs and executives regarding the way in which they process information and take their decisions (BUSENITZ; BARNEY, 1997; TAN, 2001; FORBES, 2005).

The fundamental nature of competition in many of the world's industries is changing. Conventional sources of competitive

advantage such as economies of scale and huge advertising budgets are not as effective as they once were in terms of helping firms earn above-average returns. Moreover, the traditional managerial mind-set is unlikely to lead a firm to strategic competitiveness. Managers must adopt a new mind-set that values flexibility, speed, innovation, integration, and the challenges that evolve from constantly changing conditions (KURATKO; AUDRETSCH, 2009; MCNAMARA; VAALER; DEVERS, 2003).

In general, strategic decisions undertake the firm's resources to reach posed objectives. According to Noorderhaven (1995), strategic decisions share four essential characteristics which are interlinked and that are key in this research. The first of them is complexity. When a situation is simple, that is, it consists of a limited number of variables, the strategic decision making process becomes trivial. Campbell (1988) mentions that a decision's complexity is found in the multiple trajectories that can be followed to reach a result; or various results can be reached, considering that interdependence exists among the factors that lead to those results. The second characteristic mentioned by Noorderhaven (1995) is uncertainty. The decision-maker does not know the possible results due to the multiple existing alternatives. This means that the information asymmetry influences on decision making given the uncertainty generated by not having the necessary information at the right moment.

The third characteristic is rationality. The decision maker analyzes the advantages of all the possible trajectories that allow him to reach the specific objectives previously established. It is expected that this person has an extensive knowledge

about the relevant matters involved in the situation, as well as resources and capabilities which allow him to identify the option with the greatest value in his preference scale. The fourth and last characteristic mentioned by Noorderhaven (1995) is control. "Without control, any pattern observable in a stream of decisions or actions at the level of an organization is the involuntary outcome of an interplay of causal forces rather than the intentional result of deliberate actions of individuals" (NOORDERHAVEN, 1955, p. 22).

These four characteristics describe a general framework in which the SDM takes place and identifies cognitive factors that sustain the decision making style. The cognitive representations developed by the entrepreneur act as a trigger for the decision of acting entrepreneurially or conservatively and the outcomes of these decisions.

Entrepreneurial orientation

The concept of EO has been found in literature about strategy and entrepreneurship as a construct which helps characterize the entrepreneurial behavior in an organization (BASSO; FAYOLLE; BOUCHARD, 2009; COVIN; LUMPKIN, 2011). Miller (1983, p. 771) mentioned that "An entrepreneurial firm is one that engages in product market innovation, undertakes somewhat risky ventures, and is first to come up with proactive innovations, beating competitors to the punch". For Stevenson and Jarillo (1990), a firm has an entrepreneurial behavior if its actions and processes are oriented towards the recognition and exploitation of business opportunities. From a more general focus, EO refers to the tendencies, processes, and behaviors that lead a firm to enter new or already

established markets, with new or already existent products (LUMPKIN; DESS, 1996).

Research on EO has found evidence that leads to presume that the firms that adopt a greater EO have a better performance (RAUCH; WIKLUND; LUMPKIN *et al.*, 2009; GEORGE; MARINO, 2011). However, Covin and Lumpkin (2011) mentions that the results are not conclusive yet and, although the differences in results may be attributed to different research designs, the differences reflect the fact that sometimes EO does not contribute to improve the firm's performance. Now, the strength of this relation depends on the internal and external characteristics to the organization, wherefore the EO-firm performance relation is more complex than a simple direct relation (MILLER, 2011).

Miller (1983) conceives the EO as a three-dimensioned construct – innovativeness, risk taking, and proactiveness. Lumpkin and Dess (1996) describe the EO as a strategic process at an organizational level and add two dimensions to the ones already indicated by Miller: competitive aggressiveness and autonomy. Nonetheless, most of the studies have adopted Miller's (1983) three sub-dimensions to become acquainted a firm's entrepreneurial behavior (RAUCH; WIKLUND; LUMPKIN *et al.*, 2009; COVIN; WALES, 2012). Innovativeness is the firm's proneness to support and encourage ideas and creative processes that lead to the development of new products and services. Risk taking reflects the firm's tendency to undertake projects in which profits are uncertain and proactiveness refers to taking the initiative of pursuing new business opportunities in emerging markets.

In contrast to firms adopting an EO, there are firms that adopt a more conser-

vative orientation, which do not tolerate risks, are less innovative and passive in developing new markets and business opportunities (MILLER; FRIESEN, 1982). A firm's behavior can be classified along a continuum ranging from highly conservative to highly entrepreneurial and a firm's position in this continuum describes its EO (LUMPKIN; DESS, 1996).

Although EO favors a better performance for the firm, it is necessary for it to be directed appropriately within the organization, which implies seizing opportunities through the firm's resources and capabilities (COVIN; GREEN; SLEVIN, 2006). Hence, the managers must adopt a management style which privileges flexibility, speed, innovation, integration, as well as the constant challenges that emanate from changing conditions (KURATKO; IRELAND; COVIN *et al.*, 2005).

Organizational life cycle models

A central matter in the different organizational life cycle models is that the firm's prevalent problems change throughout the different stages, just as the challenges faced by the management. Smith, Mitchell and Summer (1985) mention that technical efficiency increases during the last stages, while organizational coordination decreases. Quinn and Cameron (1983) found that in the initial stage of their model, flexibility, innovation and growth were priority, whereas in more advanced stages, control, stability and efficiency were the priority. In Kazanjian's (1988) study, it is mentioned that in organizations in the start-up stage, the priority is product or technology development and earning resources, whilst during the growth stage the priority is the internal efficiencies.

As the firm grows and broadens its range of products and services it faces a more heterogeneous and hostile environment every time, so that the task of managing the organization becomes more challenging. Decision making becomes more sophisticated and requires greater efforts to integrate the decisions from different areas to ensure is complementary (BONN; PETTIGREW, 2009).

The organizational life cycle models vary in characteristics including the number of stages. Some researchers suggest the three-stage model, this being: start-up, growth and maturity (SMITH; MITCHELL; SUMMER, 1985). Others propose a four-stage model, including a transition and/or decline stage (JAWAHAR; MCLAUGHLIN, 2001). The Bonn and Pettigrew (2009) model consists in four stages: start-up, growth, mature and decline. The start-up stage is the period in which the new firm attempts to become a viable entity. The firm is small and the owner is generally one person. The decision making is generally intuitive more than analytic with detailed analysis and methodic considerations.

The firm in the growth stage is prone to actively seek new investment opportunities and to enlarge the number of employees and clients (JAWAHAR; MCLAUGHLIN, 2001). The firm's growth makes the management more complex, harder and more crucial. Managers need to focus more on the long-term effect their decisions have on organizational process, structures and systems (SMITH; MITCHELL; SUMMER, 1985).

In the maturity stage, the growth index is slow. Firms are well established and tend to be bigger than in any other stage. The product line is stable and it is sold in tra-

ditional markets, so that the firm concerns itself with keeping its market position. The procedures are standard and decision making is less proactive and more risk averse compared to previous stages. Finally, in the decline stage, the firm's products have no sufficient market demand any longer, profitability decreases and its level of innovation is low (MILLER; FRIESEN, 1984).

Firms that are in the start-up and growth stages face the challenge of seizing opportunities. Nonetheless, in most occasions, these firms lack the necessary resources and capabilities as well as market power to allow them to respond faster to the circumstances within their competitive environment (ALLOULOU; FAYOLLE, 2005). Also, firms often aggressively challenge their competitors in the hopes of improving their competitive position and, ultimately, their performance (FERRIER, 2001). In this sense, the entrepreneur exerts a dominant effect on these stages of the firm and he is capable of promoting a strong entrepreneurial culture, which may be transformed into a firm's collective behavior (MEYER; HEPPARD, 2000). Therefore this study proposes that the SDM done by the founder-manager in a firm in the start-up and growth stages influences its EO and how the EO influences its performance. More formally, and given the previous review of literature on SDM, EO and organizational life cycle models, this study establishes the following hypothesis:

H1: The SDM style adopted by founder-manager when the firm is in the start-up and growth stages influences its EO in a different manner.

H2: The EO adopted by a firm when it is in the start-up and growth stages impacts its performance in a different manner.

METHODOLOGY

Sample and data collection

One of the challenges faced in this research was having a sample of firms in the start-up stage and another one in the growth stage as similar as possible to be able to compare them. It was not possible to delimit both samples in a particular industry, since having a sample size that would allow for a robust statistical analysis was not going to be achieved. The data collection took place during 2011 and a part of 2012 generating two independent samples.

For the firms in start-up sample, the selection criteria were the following: (1) to have initiated commercial operations between 3 to 5 years previous to the performance of this study. This timeframe is in accordance with Deakins (1999) study – a methodological approach also used by the Global Entrepreneurship Monitor (GEM) projects to define early-stage entrepreneurial activity. (2) To have up to 30 staff members – a standard for small firms defined by Mexico's *Secretaría de Economía*. (3) To be a firm in the manufacturing industry. Based on these criteria, an initial sample of 943 new firms was achieved by using the *Sistema de Información Empresarial Mexicano*.

The second sample focused on firms in the growth stage and the selection criteria were the following: (1) To have achieved between 5 to 20 years operating in the market. This time frame is considered due to fact that generally the firm has stability and is searching for growth opportunities (MILLER; LE BRETON-MILLER, 2005). (2) To have between 31 and 100 employees – a standard for the medium-size firm defined by Mexico's *Secretaría de Economía*. (3) To be a firm in the manufacturing industry. Based on these criteria, an initial sample of

1285 firms was achieved by using the *Sistema de Información Empresarial Mexicano*.

As the purpose of this research was to explore relationships between variables, the survey method was used to collect information. A questionnaire was developed whose external validity was resolved with pilot tests performed with entrepreneurs from firms in the start-up and growth stages. Doubts, confusion and writing issues in the questionnaire allowed it to be corrected. The definite questionnaires were sent electronically between May 2011 and March 2012.

Questionnaires were addressed to firms' founder managers with a letter explaining the purpose of the study. In the case of the sample of firms in the start-up stage, a total of 133 questionnaires were obtained (14.1% response rate) and for the sample of firms in the growth stage a total of 173 questionnaires were obtained (13.4% response rate). Response rates are low; nevertheless, this is common in this kind of studies. Given the samples' sizes, concern arises about the results' statistical generalization. Hence, the ANOVA test was performed to examine possible non-response bias, as suggested by Armstrong and Overton (1977). The results revealed that there was no evidence of systematic non-response bias for either sample.

Measurements

Strategic decision making. The first variable in this study was the SDM style adopted by the founder-manager. This study followed the Noorderhaven (1995) proposal with the four cognitive factors which define the decision making style: complexity, uncertainty, rationality, and control. Eight items were generated to measure the degree of

influence the cognitive factors hold in the decision making style, so the 7-point Likert scale was used to evaluate the 4 constructs. The Cronbach's α for the SDM scale was found to be above the 0.80 threshold for both samples (start-ups sample, $\alpha = 0.81$ and growth firms sample, $\alpha = 0.84$).

Entrepreneurial orientation. The second variable in this study was the EO. The Miller/Covin & Slevin (1989) scale was used, which contains the constructs that measure the 7-point Likert scale, a firm's tendency towards innovativeness, risk taking and proactiveness. The average of the nine items evaluated the intensity of the EO, so that bigger the average was, it indicated that the firm had a more entrepreneurial strategic stance. Cronbach's α for the EO scale was found to be above 0.80 for both samples (start-ups simple, $\alpha = 0.82$ and growth firms sample, $\alpha = 0.85$).

Firm performance. A frequent problem the research faces when evaluating firms' performances in their initial development stages is the lack of financial information. In the face of the absence of this information, some researchers (BRUSH; VANDERWERF, 1992; CHANDLER; HANKS, 1993; WIKLUND; SHEPHERD, 2005) suggest evaluating the firm's performance in comparison with its main competitors' performance. Based on this proposal, the 5-item development evaluation scale was used, in which an internal efficiency and a sales' performance is considered (LICHTENTHALER, 2009; PARIDA; WESTERBERG; YLINENPÄÄ *et al.*, 2010). The 5 items were measured in a 7-point Likert scale where 4 points indicated a performance similar to its competitors'. The Cronbach's α for the firm performance scale was also here found to be above

0.80 for both samples (start-ups sample, $\alpha = 0.82$ and growth firms sample, $\alpha = 0.83$).

Control variables. Literature shows that the environmental conditions such as hostility and dynamism influence in the firms' performance (LUMPKIN; DESS, 2001; MILES; COVIN; HEELEY, 2000; WIKLUND; SHEPHERD, 2003), therefore, these factors were controlled during the analysis. In order to measure the hostility, an average of the three items was used in a 7-point semantic differential scale developed by Covin and Slevin (1990). The bigger the index, the more hostile the firm's environment was. The coefficient alpha was acceptable in both samples (start-ups sample, $\alpha = 0.83$ and growth firms sample, $\alpha = 0.86$). The environmental dynamism was measured by the three items that integrate the 7-point semantic differential scale by Miller and Friesen (1982). The bigger the average of the three items, the greater the firm's environmental dynamism was. The coefficient alpha was acceptable in both samples as well (start-ups sample, $\alpha = 0.80$ and growth firms sample, $\alpha = 0.82$).

Data analysis

The information analysis followed two stages. During the first stage a confirmatory factorial analysis was performed to determine if the EO's dimensions, SDM's dimensions, and the performance represented different constructs. Initial results suggested that it was not necessary to remove any item from the scale to improve the model fit in both samples. The model fit was assessed using χ^2/df , Goodness-of-Fit Index (GFI) (JÖRESKOG; SÖRBOM, 1996), and the Comparative Fit Index (CFI) (BENTLER, 1992). The threshold for χ^2/df should be less than three or less than two

in a more restrictive sense (PREMKUMAR; KING, 1994). The values of GFI and CFI should be above 0.90 (JÖRESKOG; SÖRBOM, 1996).

The measurement of the model resulted in a good fit for start-ups sample ($c^2/df = 2.53$, GFI = .920, CFI = 0.941) and growth firms sample ($c^2/df = 2.88$, GFI = .890, CFI = 0.911). All the factor loadings are in acceptable ranges and significant at $p = 0.001$, ranging from 0.62 to 0.82 indicating convergent validity in both samples (ANDERSON; GERBIN, 1988). The average variance obtained for the measurement of EO was 0.63 in start-ups sample and 0.70 in growth firms' sample, which is slightly higher than the threshold suggested by Bagozzi and Yi (1988).

In relation to strategic making decision, the model resulted in a good fit for both samples too (start-ups sample, $c^2/df = 2.94$, GFI = 0.95, CFI = 0.97 and growth firms sample, $c^2/df = 2.78$, GFI = 0.90, CFI = 0.92). All the factor loadings were significant at $p = 0.001$ with a range between 0.62 and 0.81 in both samples. Regarding the measurement of firm's performance, the model resulted in a good fit for start-ups sample ($c^2/df = 2.93$, GFI = .901, CFI = 0.920) and growth firms' sample ($c^2/df = 2.77$, GFI = .940, CFI = 0.921). All the factor loadings

are in acceptable ranges and significant at $p = 0.001$, ranging from 0.69 to 0.84 indicating convergent validity in both samples (ANDERSON; GERBIN, 1988).

The second stage in the analysis of information was to test the hypotheses using the correlation analysis and multiple regression analysis for each sample to determine how specific factors in SDM influence EO and how the EO influences the firm's performance. The multiple regression analysis had two models. The first one was processed with the EO as a dependent variable and the second one was processed with firm's performance as a dependent variable.

RESULTS

In the place, Pearson's correlations among complexity, uncertainty, rationality, control, EO, firm performance and the control variables were calculated (see TABLE 1). Correlations in the sample of firms in the start-up stage were positive and statistically significant among EO, complexity and uncertainty. Furthermore, a dynamic environment was linked to a greater EO, which has been discussed in previous studies (WIKLUND; SHEPHERD, 2003, 2005). Regarding firm performance, complexity and EO were related to start-ups' performance.

TABLE 1 – Correlation matrix and descriptives of the start-up sample

	Variables	Mean	SD	1	2	3	4	5	6	7	8
1	Hostility	3,57	1,93	1							
2	Dynamism	4,11	1,18	0,05**	1						
3	Complexity	4,23	0,88	-0,01	-0,05	1					
4	Uncertainty	3,93	0,41	0,10**	0,14**	0,06	1				
5	Rationality	3,10	1,55	0,14**	0,09**	-0,10	-0,01	1			
6	Control	3,58	1,25	0,03	0,01	-0,03	0,07**	0,05	1		
7	Entrepreneurial orientation	4,11	1,15	0,04	0,18**	0,21**	0,25***	-0,03	-0,02	1	
8	Firm performance	4,88	0,93	0,03	0,02	0,24**	0,05	0,03	-0,01	0,22***	1

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

For the growth firm sample, the correlation matrix reveals more significant correlation results. For EO there are positive and significant correlations to complexity, uncertainty and rationality. The control dynamism is also positive and significant. For firm performance, uncertainty and rationality had a positive and significant relation to firm performance. Additionally, there is a strong link with EO and dynamism (see TABLE 2).

The following analysis was the multiple regression analysis to prove the hypothesis. We primarily wanted to investigate the effects of SDM on start-ups and growth firms' EO, and the effects of EO on start-ups and growth firm's performance. The results for the start-ups sample, shown in Table 3, shows that the control factor has a negative effect on the firm's EO ($b = 0.18, p < 0.10$). On the other hand, the only factor that exerts a light positive influence on the EO is uncertainty ($b = 0.11, p < 0.05$). Regarding the control variables, dynamism exerts a positive influence on the EO ($b = 0.25, p < 0.05$), which may indicate that a dynamic environment triggers a more entrepreneurial behavior in the firm. The explained variance for the first regression (EO as independent variable) is appropriate (about 21%).

In regards to firm performance, EO was

the most influential variable on the performance ($b = 0.25, p < 0.01$), which may indicate that innovation, proactiveness and risk-taking are important features in a start-up firm. Secondly, the hostility variable was found as posing a negative influence ($b = 0.17, p < 0.05$), which indicates that a competitive and aggressive environment affects the firm's performance. The explained variance for the second regression (firm performance as independent variable) explains only about 18% of the variation in performance.

Regarding the sample made up of firms in the growth stage, the results can be noted in Table 4. Within the factors intervening in decision making, rationality was the one exerting the greatest influence on the firm's EO ($b = 0.24, p < 0.10$) and in second place, complexity was found ($b = 0.19, p < 0.05$). On the other hand, the two control variables exert a positive influence on the EO (Hostility, $b = 0.17, p < 0.10$; Dynamism, $b = 0.15, p < 0.10$). The explained variance for the first regression (EO as independent variable) is appropriate (about 17%).

Regarding the firm's performance, EO was the variable with the greatest influence on performance ($b = 0.26, p < 0.01$). In regards to control variables, hostility and dynamism variables, they exerted a negative influence on the firm's performance

TABLE 2 – Correlation matrix and descriptives of the growth firms sample

	Variables	Mean	SD	1	2	3	4	5	6	7	8
1	Hostility	3,88	2,01	1							
2	Dynamism	4,45	0,98	-0,04	1						
3	Complexity	4,57	1,01	-0,05	0,01	1					
4	Uncertainty	4,02	0,77	0,07***	-0,10**	0,11**	1				
5	Rationality	3,55	1,16	0,01	-0,12**	0,05	0,02	1			
6	Control	3,11	1,76	0,03**	0,03	0,07	0,04	0,01	1		
7	Entrepreneurial orientation	4,36	0,88	0,03	0,21**	0,23***	0,27**	0,21***	0,07**	1	
8	Firm performance	4,73	0,95	0,01	0,22**	0,10**	0,23**	0,28***	0,03**	0,24**	1

* $p < 0,10$; ** $p < 0,05$; *** $p < 0,01$

TABLE 3 – Regression analysis of start-ups sample

Control and independent variables	Dependent variables	
	Entrepreneurial orientation	Firm performance
Hostility	0,080	-0,173**
Dynamism	0,247**	-0,115
Complexity	0,055	
Uncertainty	0,113**	
Rationality	0,045	
Control	-0,179*	
Entrepreneurial orientation		0,248***
Model summary		
<i>F</i> -ratio	5,377	3,221
<i>R</i> ²	0,249	0,193
<i>R</i> ² adjusted	0,213	0,184
Standart error of the estimate	1,031	0,601
Significance	< 0,001	< 0,05

p* < 0,10; *p* < 0,05; ****p* < 0,01**TABLE 4 – Regression analysis of growth firms sample**

Control and independent variables	Dependent variables	
	Entrepreneurial orientation	Firm performance
Hostility	0,169*	-0,224*
Dynamism	0,147*	-0,203*
Complexity	0,193**	
Uncertainty	-0,09*	
Rationality	0,244*	
Control	-0,02*	
Entrepreneurial orientation		0,258***
Model summary		
<i>F</i> -ratio	6,023	7,441
<i>R</i> ²	0,198	0,235
<i>R</i> ² adjusted	0,173	0,221
Standart error of the estimate	1,011	0,455
Significance	< 0,001	< 0,001

p* < 0,10; *p* < 0,05; ****p* < 0,01

(Hostility, $b = 0.22$, $p < 0.10$; Dynamism, $b = 0.20$, $p < 0.10$). The explained variance for the second regression (firm performance as independent variable) explains about 22% of the variation in performance.

The former results highlight that the factors intervening in decision making are different when the firm is in the start-up and the growth stage. The firms in the start-up stage are slightly more entrepreneurial than firms in the growth stage. With this,

the hypothesis 1 (H1) posed in this research is proved. Regarding hypothesis 2, EO has a better impact on firm's performance when it is in the growth stage. With this, hypothesis 2 (H2) is proved.

DISCUSSION AND CONCLUSIONS

The general objective of this research was to examine the influence the SDM style may have on the firms' EO and how

the EO influences the firm's performance in different stages of the organizational life cycle, specifically in the start-up and growth stages. We want to talk around four subjects that emerge from the results: (1) the influence dynamism and control exert on EO during the start-up stage, (2) the negative influence hostility wields on the performance of a start-up firm, (3) the influence of rationality, complexity and hostility on a firm's EO during its growth stage, and (4) the link between EO and firm's performance found in both samples.

Regarding the first subject, control exerts a negative influence on the firm's EO during the start-up stage. The result may lead the suppose that when a firm is in the start-up stage of its organizational life cycle, exerting control over internal and external conditions decreases its EO. In other words, the entrepreneur wants his decisions or actions to lead to concrete results. However, the entrepreneur may be exerting excessive control, which may decrease the possibility of seizing other opportunities. The control variable (dynamism) has a positive influence on the EO, which means that the changing conditions of the environment promote the firm to be more sensitive to an entrepreneurial behavior. These results may suggest that the entrepreneur's decision making style will be of greater control when the conditions of the environment are more dynamic. In addition to this, it can be noted that the variable uncertainty exerts a light influence on the firm's EO, as shown in the results. This decision making may be characteristic in a firm in the start-up stage, since it is still more intuitive than analytical (MILLER; FRIESEN, 1984).

About the second subject, it is important to mention the negative influence a hostile environment wields on the performance of a start-up. The results do not identify a characteristic element of decision making as influential on a firm's performance, the same way it shows on a hostile environment. This result may indicate that under certain circumstances of competitiveness, the environment's hostility can be more representative than any variable in the decision making style. The only variable in decision making that displays traits of negative influence is uncertainty. This result shows the external reliance a new firm has, which is probably due to a lack of sufficient resources that allow it to lower the environment's uncertainty and achieve acceptance of its products and services (JAWAHAR; MCLAUGHLIN, 2001).

The third subject addresses firms that are in the growth stage. Regarding the elements that distinguish the decision making in this stage, both, rationality and complexity affect the firm's EO positively. It is important to highlight that rationality is the element with the biggest influence on the EO and the performance. This indicates that firms, when in a more advanced development stage, become more analytical in their decision making. Managers need to think about the long-term effects of their decisions on organisational processes, structures and systems because the organization is moving for a greater level of scrutiny. On the other hand, when the entrepreneur faces a complex decision making, that is, when the possible outcome or consequence is not as evident, then he may be more rational. The results show that this combination does not inhibit the

firm's EO or its performance, but, on the contrary, it promotes them. This means that we are facing a type of firm that is actively seeking new investment opportunities and to increase its staff, clients and geographical contacts (JAWAHAR; MCLAUGHLIN, 2001).

Finally, the relationship between EO and performance in both samples highlights once more that a firm that adopts an entrepreneurial stance achieves a better performance (RAUCH; WIKLUND; LUMPKIN *et al.*, 2009). This may indicate that firms, either in start-up or growth stage, that adopt an entrepreneurial strategy are able to differentiate themselves from other firms through risk-taking and proactive actions, and by developing innovative products leading to a competitive advantage. Thus, having an entrepreneurial posture represents a path for start-ups and growth firm's competitiveness.

The results shown in this study generate possibilities for future research. One of them may generate a more homogeneous sample. For this study only manufacturing firms were considered, but it would be interesting to find out how these variables behave in a particular industry, among them, the high-tech industry. This characteristic may show a different behavior of the variables in decision making. Moreover, a future research could consider a control variable on the number of staff members, in such way that whether this element influences in the EO or not, may be known. The firm's agility can be distressed by the number of staff members, thus subtracting the ability to adapt to a more changing environment; in other words, it can be a negative influence in its dynamic capabilities (EISENHARDT; MARTIN, 2000). It could

be assumed that this behavior would remain the more advanced the firm is in its development stages, but for this, it would be worth to compare at least two stages of firms' development.

While the results of this paper help to better understand the SDM and its impact in the firm's EO and subsequent performance, it is important to consider the results under certain limitations. The first one is that the samples of firms did not belong to the same firm. It would be interesting to know the evolution in strategic thinking of the same firm, although this would demand a long-term research. On the other hand, the acquired information on the firm's development was obtained through qualitative and comparative assessments on the entrepreneur's side. Although this way of obtaining information on the firm's performance has proven to be reliable, it is important to count on other type of information.

The results shown in this study demonstrate the importance of the entrepreneur's decision making and how it influences in the firm's fate from the development stage the firm is in. The combination of several elements leads the entrepreneur to make decisions under conditions of uncertainty and incomplete information. This makes the heuristic a useful tool for decision making, since it can be conceived as a simplification strategy or rule that helps to deal with complex decisions (BAZERMAN; MOORE, 2009). Ultimately, decision making is different in every stage of the firm's development and influences on its EO and performance, so it demands the use of resources and different capacities to deal with the challenges it faces.

REFERÊNCIAS

- ALOULOU, W.; FAYOLLE, A. A. Conceptual approach of entrepreneurial orientation with small business context. **Journal of Entrepreneurship Culture**, [S. l.], v. 13, n. 1, p. 21-45, 2005.
- ANDERSON, J. C.; GERBING, D. W. Structural equation modeling in practice: A review and recommended two-step approach. **Psychological Bulletin**, [S. l.], v. 103, n. 3, p. 411-423, 1988.
- ARMSTRONG, J. S.; OVERTON, T. S. Estimating nonresponder bias in mail surveys. **Journal of Marketing Research**, [S. l.], v. 14, n. 3, p. 396-402, 1977.
- BAGOZZI, R. P.; Yi, Y. On the evaluation of structural equation models. **Journal of the Academy of Marketing Science**, [S. l.], v. 16, n. 1, p. 74-94, 1988.
- BASSO, O.; FAYOLLE, A.; BOUCHARD, V. Entrepreneurial orientation: The making of a concept. **Entrepreneurship and Innovation**, [S. l.], v. 10, n. 4, p. 313-321, 2009.
- BAZERMAN, M. H.; MOORE, D. A. **Judgment in managerial decision making**. Hoboken, NJ: John Wiley & Sons, 2009.
- BENTLER, P. M. **EQS Structural Equations Program Manual**. Los Angeles: BMDP Statistical Software, 1992.
- BONN, I.; PETTIGREW, A. Towards a dynamic theory of boards: An organizational life cycle approach. **Journal of Management and Organization**, [S. l.], v. 15, n. 1, p. 2-16, 2009.
- BRUSH, C. G.; VANDERWERF, P. A. A comparison of methods and sources for obtaining estimates of new venture performance. **Journal of Business Venturing**, [S. l.], v. 7, n. 2, p. 157-170, 1992.
- BUSENITZ, L. W.; BARNEY, J. B. Differences between entrepreneurs and managers in large organizations: Biases and heuristics in strategic decision-making. **Journal of Business Venturing**, [S. l.], v. 12, n. 1, p. 9-30, 1997.
- CAMPBELL, D. J. Task complexity. A review and analysis. **Academy of Management Review**, [S. l.], v. 13, n. 1, p. 40-52, 1988.
- CHANDLER, G. N.; HANKS, S. H. Founder competence, the environment, and venture performance. **Entrepreneurship Theory and Practice**, [S. l.], v. 18, n. 3, p. 77-89, 1993.
- COVIN, J. G.; SLEVIN, D. P. Strategic management of small firms in hostile and benign environments. **Strategic Management Journal**, [S. l.], v. 10, n. 1, p. 75-87, 1989.
- COVIN, J. G.; SLEVIN, D. P. New venture strategic posture, structure, and performance: an industry life cycle analysis. **Journal of Business Venturing**, [S. l.], v. 5, n. 2, p. 123-135, 1990.
- COVIN, J. G.; LUMPKIN, G. T. Entrepreneurial orientation theory and research: Reflections on a needed construct. **Entrepreneurship Theory and Practice**, [S. l.], v. 35, n. 5, p. 855-872, 2011.
- COVIN, J. G.; GREEN, K. M.; SLEVIN, D. P. Strategic process effects on the entrepreneurial orientation-sales growth rate relationship. **Entrepreneurship Theory and Practice**, [S. l.], v. 30, n. 1, p. 57-81, 2006.
- COVIN, J. G.; WALES, W. J. The measurement of entrepreneurial orientation. **Entrepreneurship Theory and Practice**, [S. l.], v. 36, n. 4, p. 677-702, 2012.
- DEAKINS, D. **Entrepreneurship and small firms**. Berkshire: McGraw-Hill, 1999.
- DESS, G.; LUMPKIN, G.; COVIN, J. G. Entrepreneurial strategy making and firm performance: Test of contingency and configurational models. **Strategic Management Journal**, [S. l.], v. 18, n. 9, p. 677-695, 1997.
- EISENHARDT, K. M.; MARTIN, J. A. Dynamic capabilities: what are they? **Strategic Management Journal**, [S. l.], v. 21, n. 10/11, p. 1105-1121, 2000.
- FERRIER, W. J. Navigating the competitive landscape: The drivers and consequences of competitive aggressiveness. **Academy of Management Journal**, [S. l.], v. 44, n. 4, p. 858-877, 2001.
- FORBES, D. P. The effects of strategic decision making on entrepreneurial self-efficacy. **Entrepreneurship Theory and Practice**, [S. l.], v. 29, n. 5, p. 599-626, 2005.
- GEORGE, B. A.; MARINO, L. The epistemology of entrepreneurial orientation: Conceptual formation, modeling, and operationalization. **Entrepreneurship Theory and Practice**, [S. l.], v. 35, n. 5, p. 989-1024, 2011.
- GREEN, K. M.; COVIN, J. G.; SLEVIN, D. P. Exploring the relationship between strategic reactivity and entrepreneurial orientation: The role of structure-style fit. **Journal of Business Venturing**, [S. l.], v. 23, n. 3, p. 356-383, 2008.
- HART, S. L. An integrative framework for strategy-making process. **Academy of Management Review**, [S. l.], v. 17, n. 2, p. 327-351, 1992.
- JAWAHAR, I. M.; MCLAUGHLIN, G. L. Toward a descriptive stakeholder theory: An organizational life cycle approach. **Academy of Management Review**, [S. l.], v.

- 26, n. 3, p. 397-414, 2001.
- JÖRESKOG, K. G.; SÖRBOM, D. **LISREL 8: The Simple Command Language**. Chicago: Scientific Software International, 1996.
- KAZANJIAN, R. K. Relation of dominant problems to stages of growth in technology-based new ventures. **Academy of Management Journal**, [S. l.], v. 31, n. 2, p. 257-279, 1988.
- KURATKO, D. F.; IRELAND, R. D.; COVIN, J. G.; HORNSBY, J. S. A model of middle-level managers' entrepreneurial behavior. **Entrepreneurship Theory and Practice**, [S. l.], v. 29, n. 5, p. 699-716, 2005.
- KURATKO, D. F.; AUDRETSCH, D. B. Strategic entrepreneurship: Exploring different perspectives of an emerging concept. **Entrepreneurship Theory and Practice**, [S. l.], v. 33, n. 1, p. 1-17, 2009.
- LICHTENTHALER, U. Absorptive capacity, environmental turbulence and the complementarity of organizational learning process. **Academy of Management Journal**, [S. l.], v. 52, n. 4, p. 822-846, 2009.
- LUMPKIN, G. T.; DESS, G. Clarifying the entrepreneurial orientation construct and linking it to performance. **Academy of Management Review**, [S. l.], v. 21, n. 1, p. 135-173, 1996.
- LUMPKIN, G. T.; DESS, G. Linking two dimensions of entrepreneurial orientation to firm performance: The moderating role of environment and industry life cycle. **Journal of Business Venturing**, [S. l.], v. 16, n. 5, p. 429-451, 2001.
- MCNAMARA, P.; VAALER, M.; DEVERS, C. Same as it ever was: The search for evidence of increasing hypercompetition. **Strategic Management Journal**, [S. l.], v. 24, n. 3, p. 261-278, 2003.
- MEYER, G. D.; HEPPARD, K. A. Entrepreneurial strategies: The dominant logic of entrepreneurship. In: MEYER, G. D.; HEPPARD, K. A. (Ed.). **Entrepreneurship as strategy**. Thousand Oaks, CA: Sage, 2000.
- MILES, M. P.; COVIN, J. G.; HEELEY, M. B. The relationship between environmental dynamism and small firm structure, strategy, and performance. **Journal of Marketing Theory and Practice**, [S. l.], v. 8, n. 2, p. 63-74, 2000.
- MILLER, D.; FRIESEN, P. H. Innovation in conservative and entrepreneurial firms: Two models of strategic momentum. **Strategic Management Journal**, [S. l.], v. 3, n. 1, p. 1-25, 1982.
- MILLER, D. The correlates of entrepreneurship in three types of firms. **Management Science**, [S. l.], v. 29, n. 7, p. 770-791, 1983.
- MILLER, D.; FRIESEN, P. H. A longitudinal study of the corporate life cycle. **Management Science**, [S. l.], v. 30, n. 10, p. 1161-1183, 1984.
- MILLER, D.; LE BRETON-MILLER, I. **Managing for the long run**. Boston: Harvard Business School Press, 2005.
- MILLER, D. Miller (1983) revisited: A reflection on EO research and some suggestions for the future. **Entrepreneurship Theory and Practice**, [S. l.], v. 35, n. 5, p. 837-894, 2011.
- NOORDERHAVEN, N. G. **Strategic Decision Making**. Wokingham: Addison-Wesley, 1995.
- PARIDA, V.; WESTERBERG, M.; YLINENPÄÄ, H.; ROININEN, S. Exploring the effects of network configurations on entrepreneurial orientation and firm performance: An empirical study of new ventures and small firms. **Annals of Innovation and Entrepreneurship**, [S. l.], v. 1, n. 1, p. 1-13, 2010.
- POON, J. M. L.; AINUDDIN, R. H.; JUNIT, S. A. Effects of self-concept traits and entrepreneurial orientation on firm performance. **International Small Business Journal**, [S. l.], v. 24, n. 1, p. 61-82, 2006.
- PREMKUMAR, G.; KING, W. R. Organizational characteristics and information systems planning: An empirical study. **Information Systems Research**, [S. l.], v. 5, n. 2, p. 75-109, 1994.
- QUINN, R. E.; CAMERON, K. Organizational life cycles and shifting criteria of effectiveness: some preliminary evidence. **Management Science**, [S. l.], v. 29, n. 3, p. 33-51, 1983.
- RAJAGOPALAN, N.; RASHEED, A. M. A.; DATTA, D. D. Strategic decision processes: critical review and future processes. **Journal of Management**, [S. l.], v. 19, n. 2, p. 349-384, 1993.
- RAUCH, A.; WIKLUND, J.; LUMPKIN, G. T.; FRESE, M. Entrepreneurial orientation and business performance: Cumulative empirical evidence. **Entrepreneurship Theory and Practice**, [S. l.], v. 33, n. 3, p. 761-788, 2009.
- RICHARD, O. C.; BARNETT, T.; DWYET, S.; CHADWICK, K. Cultural diversity in management, firm performance and the moderating role of entrepreneurial orientation dimensions. **Academy of Management Journal**, [S. l.], v. 47, n. 2, p. 255-266, 2004.
- SCHWENK, C. R. Strategic decision making. **Journal of Management**, [S. l.], v. 21, n. 3, p. 471-493, 1995.
- SIMSEK, Z.; HEAVEY, C.; VEIGA, J. F. The impact of CEO core self-evaluation on the firm's entrepreneurial orientation. **Strategic Management Journal**, [S. l.], v. 31, n. 1, p. 110-119, 2010.
- SMITH, K. G.; MITCHELL, T. R.; SUMMER, C. E. Top level management priorities in different stages of the

- organizational life cycle. **Academy of Management Journal**, [S. l.], v. 28, n. 4, p. 799-820, 1985.
- STEVENSON, H. H.; JARILLO, J. C. A paradigm of entrepreneurship: Entrepreneurial management. **Strategic Management Journal**, [S. l.], v. 11, n. 5, p. 17-27, 1990.
- TAN, J. Innovation and risk taking in a transitional economy: A comparative study of Chinese managers and entrepreneurs. **Journal of Business Venturing**, [S. l.], v. 16, n. 4, p. 359-376, 2001.
- WIKLUND, J.; SHEPHERD, D. Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized business. **Strategic Management Journal**, [S. l.], v. 24, n. 13, p. 1307-1314, 2003.
- WIKLUND, J.; SHEPHERD, D. Entrepreneurial orientation and small business performance: A configurational approach. **Journal of Business Venturing**, [S. l.], v. 20, n. 1, p. 71-91, 2005.