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The Relationship Between Market Orientation, Entrepreneurial Orientation and Learning Orientation on Innovation and its Effect on Performance in Mexican SMEs

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Abstract: Innovation is important for the way the SMEs respond to the changes in the business environment. This study analyses the influence of three strategic orientations that are identified as internal capacities in the theory on the subject (market orientation, entrepreneurial orientation and learning orientation) on innovation and the impact of this capacity on organizational performance among 400 Mexican SMEs. These relations have not been studied in the context of an emerging country. Through structural equations, the results show the positive relationship of the entrepreneurial orientation and learning orientation on innovation as well as the positive influence of innovation on the performance of the SMEs, however, there is no evidence of the positive influence of market orientation on innovation.

Key words: Market orientation, entrepreneurial orientation, learning orientation, innovation, SMEs, learning orientation, changes

INTRODUCTION

The analysis of competitive advantage has in recent decades shifted to the study of internal aspects rather than market position, it is considered that the leverage resources in developing internal capabilities regains importance given the theory of resources and capabilities. As a result, it is highlighted the importance that companies direct their efforts to identify their resources and capabilities that contribute to competitive advantage that can be sustained. Consequently, we know the capabilities have been considered strategic for the performance of companies.

Resources are all assets, organizational processes, attributes of the organization, information and knowledge controlled by the organization to allow the formulation and implementation of strategies to increase their effectiveness and efficiency (Barney, 1991) while the capacity is routine (s) that determine which activities and how they interact themselves to achieve a goal (Grant, 1991).

Kraiczy (2013) states that one of these capacities has now been identifiable in organizations is the innovation, the concept of innovation was founded in 1930, it is noted that innovation is "doing new things or do things already done but a new way" (Schumpeter, 1947). Today innovation is defined as the "introduction of a new or significantly improved product (good or service) a process, a new marketing method or a new organizational method in the internal practices of the company, workplace organization or external relations" (OECD, 2005).

Innovation is an organizational capability that achieves competitive advantages in business (Camison and Villar, 2010) thus, the great current importance for companies. In the literature review on technological innovation, they have been emphasizing innovation of products and processes (Lundvall, 1992) but there are also studies that identify that innovation is an interactive process generation, dissemination and use of knowledge (Bottazzi and Peri, 2003).

In the Global Competitiveness Report 2016-2017 of the World Economic Forum, it states that in the region of Latin America and the Caribbean, although, Mexico increased six positions in the ranking of economies, ranking 51st, remain large gaps in some of the pillars to measure competitiveness in relation to other world economies within the main problems identified to do business it is found insufficient capacity to innovate, taking the pillar of innovation at the lowest level, indicating that there is much to do to support the companies in Mexico, especially, SMEs which lies more than 70% of national employment and over 50% of gross domestic product lies in the hands of the enterprises that do not exceed the 500 employees (ProMexico, 2015). In Mexico, only 0.74% of GDP is spent on investment in

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science, technology and innovation (OJF., 2014), far below most developed economies. Entrepreneurial orientation, learning orientation and market orientation, have been identified as internal capabilities to develop difficult complex routines to imitate and transfer, so, they can represent a competitive advantage for companies because they are difficult to imitate by competitors. Therefore, the aim of this study is to analyze whether these strategic orientations are necessary antecedents to positively influence the levels of innovation and in turn impacts positively on the performance of SMEs in the State of Aguascalientes in Mexico.

Literature review

Market orientation and innovation: The study of market orientation regained importance, since the 90's, the Marketing Science Institute observes that it may provide companies with skills that will help in the search for their survival and/or growth (Villanueva *et al*., 2010). A literature review on the subject of market orientation, it is found that has been addressed from the beginning with a concept that has to do with cultures or behaviors within organizations, it is related to the increase in the performance in organizations, the main interest has been empirically assess whether this culture or behaviors generate benefits in the organization. Thus, Flavian *et al*. (1999) explain the first empirical reserach; Narver and Slater (1990) carried out 371 American companies, after Slater and Narver (1994) extend the study on this subject in both a positive relationship is concluded with the performance of the organization. Greenley (1995) replicated the study in Britain with 240 large companies in which it is given evidence of the positive relationship with performance.

In studies of Market Orientation (MO) (Avlonitis and Gounaris, 1999; Serna *et al*., 2013; Lopez, 2006; Gomez, 2008) there are two largely accepted perspectives, behavioral and cultural both used in largely by researchers in market orientation. The perspective of behavioral character describes market orientation in terms of specific behaviors related to the generation and dissemination of market intelligence and response (Kohli and Jaworski, 1990), the scale used in their empirical studies named MARKOR and has three dimensions: generation of information, dissemination of information and design response. Another perspective is the cultural released by Narver and Slater (1990) which takes into account three dimensions: customer orientation, competition orientation, interfunctional coordination. The scale with which the construct is measured is the MKTOR.

The application of market orientation has shown similar positive effects on performance in various business sectors (Chang *et al*., 2014). And market success in business by adopting a proactive response to market orientation (Bodlaja *et al*., 2012), consumer loyalty with the company for its capacity to meet customer needs and be better than the competition (Ngo and O'Cass, 2012), the needs expressed and unexpressed by customers that is the sensitivity of the market it serves and its capacity to increase innovation (Hunt and Morgan, 1996).

The literature review is still inconsistent on the results when analyzing the association between market orientation and innovation, since there is evidence of several studies which conclude that there is no association between market orientation and product innovation (Renko *et al*., 2009) or that do not contribute to the success of the new processes (Appiah, 1998).

However, there are findings that indicate a positive relationship between market orientation innovation in product, process and management innovation and how being consumer-oriented increases the introduction of new products for the world and reduces the number of market similar products to those launched by a company (Lukas and Ferrell, 2000) and its positive influence on the success of new products in small businesses (Pelham and Wilson, 1995).

Market orientation positively influences the development of more innovative products (Slater and Narver, 1996), the true market orientation requires continuous innovation effort that should not always be limited to only incremental innovations (Vijande *et al*., 2000), thus, innovation capacity that shows a company influences the relationship of market orientation in the results of innovation (Hurley and Hult, 1998; Han *et al*., 1998), the number and degree of novelty of innovations marketed by the company will be higher in firms applying market orientation, being more likely to innovate and achieving greater success in innovations by what is considered a market orientation a valuable precedent for both radical and incremental innovations (Vijande *et al*., 2000).

After the literature review on the topic of market orientation and to analyze previous studies on the relationship between market orientation to innovation, it can be seen that there are studies (Han *et al*., 1998; Hurley and Hult, 1998; Vazquez *et al*., 2001; Grinstein, 2008; Lewrick *et al*., 2011; Kuster and Vila, 2011; Liu, 2013; Chang *et al*., 2014) that provide evidence of the positive and meaningful relationship. Therefore, the following hypothesis is formulated:

- H_1: market orientation has a direct and positive impact innovation of Mexican SMEs

Entrepreneurial orientation and innovation: In recent years research on entrepreneurship has regained importance in Mexican SMEs and the world but it can be seen also how this orientation in companies influences different aspects. Mintzberg classifies strategic focus on three types of strategic profiles: adaptive, planner and entrepreneur. The last profile consists in finding new business opportunities according to their degree of risk and uncertainty.

Birkinshaw (1997) argues that some of the main objectives of entrepreneurship in corporations is renovating strategies of organizations, achieving new ways of economic growth and achieving the international context based on effectiveness when configuring resources for obtaining competitive advantage (Covin and Miles, 1999), profitability in organizations (Zahra, 1991) and development of innovations (Lumpkin and Dess, 1996).

For businesses, entrepreneurship has oriented the search for new business opportunities that develops growth, technological progress and wealth creation. This activity represents one of the strongest drivers of economic growth and development of enterprises which has been proved in the literature (Lumpkin and Dess, 1996). Consequently, it has become crucial for companies to develop skills to address environmental risks, proactively identify the opportunity for technological development (Carter *et al*., 1994).

The conceptualization of entrepreneurship more widely accepted in the scientific literature that addresses this construct is generated by Miller (1983), the researcher defined the entrepreneurial activity from the interrelation of three dimensions, innovation and willingness to take high risks but controlled and proactivity, this definition created a scale to measure this orientation. Are many authors who have studied the entrepreneurial orientation and its relationship to company performance or innovation capacity (Miller, 1983; Ripolles *et al*., 2007; Gomez, 2008; Basile, 2012; Serna *et a*l., 2013).

In the review of literature on the subject two perspectives predominant research identified, the first is Covin and Slevin (1989) which is based on three dimensions proposed by Miller (1983) to measure entrepreneurial activity of a business model: risk taking, innovation and proactivity and the second model is proposed by Lumpkin and Dess (1996) in which two dimensions are added more to that proposed by Covin and Slevin (1989) Model, competitive aggressiveness and autonomy.

Miller (1983) and Covin and Slevin (1989) refer to the entrepreneurial orientation as a strategic position of the organization that reflects the decisions and processes of the company and the second proposal by Lumpkin and Dess (1996) consider that the essence of entrepreneurial activity in a company is a new entry in the market, so that the dimensions of innovation, proactiveness and risk taking are presented when a company makes entry into a new market but it can also achieve a successful entry into a market where only one of these dimensions is presented. Entrepreneurial orientation, defined as the set of processes, practices and decision-making activities undertaken to achieve a new company entering a new market. From the point of view by Lumpkin and Dess (1996), it is more practical to perform better business strategies that will enable the company to meet its objectives.

Lumpkin and Dess (1996) highlight the importance of two concepts that could be interpreted similarly, the entrepreneurial spirit of the company (entrepreneurship) and entrepreneurial orientation (entrepreneur orientation), Entrepreneurship refers to the entry of a company to a market, it can be a new or existing market as well as a new product or an existing product in the company (Burgelman, 1983). However, to carry out this introduction on the market sometimes is needed to develop a product which leads to incorporate innovation activities. Entrepreneurial orientation does not have to be strictly the creation of new products but also must relate to a type of innovation and only adjustments of the product or new ways of combining the product are obtained (Blesa *et al*., 2009). The key element for an innovation to be identified as a result of an entrepreneurial orientation is to look for a relationship between available resources and or existing products (Zahra *et al*., 1999; Shane, 2003).

From the theory of resources and capabilities entrepreneurial orientation is considered as a type of organizational knowledge as it is about the relationship between the knowledge generated led to the search for new business opportunities (Wiklund and Shepherd, 2003), therefore, a high degree of entrepreneurial orientation in the organization will help to recognize and create opportunities through the activities and behavior of firms (Shane, 2003) as it permits to know the current environment and acquire knowledge of the market trends and actions of competitors and consumers, allowing not only the satisfaction of needs of the market if not also succeed. In the implemented innovations (Maatoofi and Tajeddini, 2011).

Companies that have an entrepreneurial orientation tend to reduce barriers to innovation which can be reflected in the introduction of new products with unique features in the market (Avlonitis and Salavou, 2007). Empirical evidence permits to suggest the following hypothesis:

- H_2: the entrepreneurial orientation has a direct and positive innovation impact of Mexican SMEs

Learning orientation and innovation: The importance of a company to acquire, disseminate knowledge and be open to new ideas to increase their chances of survival and growth (Van de Ven, 1993) is currently acknowledged. Learning has become essential in organizations due to increased competition and increasingly diverse markets. Since it is necessary to know the customers and their needs, learning is the process in which knowledge and action interacts to generate changes (Popper and Lipshitz, 2000). Learning is the bridge for companies to move from thoughts to actions, so, it is defined as "the process by which entities acquire, build and transfer knowledge (Lopez *et al*., 2012).

In the literature review, it is noted that if the mechanisms of learning are applied in the organization, it exists organizational learning. When it is developed as a business strategy in order to obtain a competitive advantage, then the company will have a strategic orientation towards learning. Learning is identified as a single loop where not significantly alter the activities of the organization, the double loop where significant values are made to the values which rule the organization.

The orientation to learning is "the basic attitude that is taken into the company to learning that leads to having organizational learning processes" (Sinkula *et al*., 1997), for managers is a key factor than other members understand the consequences that brings to the company. It is important to identify how an organization is that learns or uses knowledge, explains Lopez (2006), so it will need to create, acquire and transfer knowledge in order to achieve organizational learning, the members of the institution should detect errors and correct them through actions previously established by the same organization.

There is empirical evidence of the positive influence of learning orientation on business innovation because innovation reflects the desire to assimilate new ideas, learning orientation will be beneficial for companies that wish to be highlighted with good market performance through a new product (Calantone *et al*., 2002). Various strategic orientations as entrepreneurial orientation and market orientation need to be promoted within the organization to make the learning orientation impacts on innovation within the company (Huang and Wang, 2011), it was also evidenced the relationship of learning orientation with innovation as a global construct such as the three types of innovation in product, process and management (Palacios *et al*., 2013).

It has also been found that the commitment to learning in companies, openness, experimentation and unlearning help managers of SMEs to generate new ways of manage, marketing or purchase (Palacios *et al*., 2012). Therefore, there is evidence to formulate the third hypothesis:

- H_3: learning orientation has a direct and positive impact on innovation of Mexican SMEs

Innovation and performance: Managers require information of the results of the actions to be integrated, dynamic, accessible and visible to support rapid decision-making that promotes proactive management being flexible and responsible (Nudurupati *et al*., 2011).

According to Huerta *et al*. (2015) "results are the performance presented by the company over a period of time which can be measured through quantitative and qualitative indicators which measure the effectiveness of organization's. In addition, Dyer and Reeves (1995) defined results/performance and refers to the measurement and evaluation of the achievement of the objectives of the organization. Combs *et al*. (2005) define business performance as the economic results that emerge from the interaction between behaviors, attributes and environment of the organization. This definition does not resume financial indicators and is positioned in strategic management (Hamann *et al*., 2013).

On the other hand, the construct of innovation has been studied in different researches both theoretical and empirical, many of these conclude that innovation can be seen as a key to gain competitive advantage in business (Burgelman *et al*., 2004; Maldonado *et al*., 2009; Madrid *et al*., 2009, 2013). These competitive advantages may bring them to increase their market share to have better production or 11 increase their productivity and ultimately can help to improve performance (Madrid *et al*., 2009). Innovation allows the company to create value through the development and use of new knowledge, first recognizing the need, the generation of an idea and the implementation of that idea in the organization in the case that this idea is in order to meet a need in a market, then should be marketed. These ideas produced from a need founded will be reflected in new products, services or business models and new management techniques.

Some research has demonstrated that innovations help to create new market opportunities and improve macroeconomic (Lynn *et al*., 1996; Dermott and Handfield, 2000; Connor and Veryzer, 2001, McDermott and O'Connor, 2002) in some cases it is identified that innovation entails for organizations a high risk, since, in

several occasions high resource investments are required, however innovations in enterprises have been necessary given the competitive environment constantly evolving as well as changes in the needs and demands of markets and the need to improve the technological capabilities of organizations.

Some researchers argue that SMEs have the ability to develop more effective innovation, allowing them to develop products faster than large firms (Storey, 2000; Vossen, 1998). However, other authors doubt the latter argument, considering that SMEs don't have more skill than large enterprises in developing innovations, other authors enter the discussion, noting that the fact that SMEs can have a greater degree of flexibility to design products according to specific consumer needs, it can help SMEs to have this competitive advantage (Regan *et al*., 2006).

In the scientific literature is noted that to be called innovation there must be a change in product, process, marketing or organizational method, the concept is very broad and includes most of the departments of an organization. On the other hand, it is also stated that includes innovation to new products on the market, production processes and innovation management processes which relates to new schemes of organizational system and marketing systems, financial systems, etc.

There is empirical evidence that suggests that innovation is an important antecedent for enhancing business performance (Dess *et al*., 1997) as well it is found a positive and significant relationship between product innovation (radical or incremental) and business performance, along with a positive and significant relationship between the number of product innovations conducting organizations and company performance (Robinson and Pearce, 1988; Keller, 2004) on the other hand, innovation supports maintaining and improving the level of growth in business as long as changes are developed both internal and external (Freel, 2000).

There are studies that argue that innovation contributes to economic growth of the company (Keizer *et al*., 2002) others agree that innovation will be the key piece for the organizations to acquire competitive advantages that will enable better market performance (Mone *et al*., 1998). In addition to the literature review, there is evidence from studies in which it is argued that innovation has a positive impact on business performance (Grant, 1991; Peteraf, 1993; Barney, 1997; Shoham and Fiegenbaum, 2002; Larsen and Lewis, 2007; Regan *et al*., 2006; Romer, 1994; Grossman and Helpman, 1994; Barro and Sala-I-Martin, 1995; Reading *et al*., 1995; Moore, 1995; Shefer and Frenkel, 2005). In respect of evidence in other contexts is the study of Hsueh and Tu (2004) in which it was demostrated that innovation positively influences the performance of SMEs in Taiwan as well as the study of Olav and Leppalahti in companies of Norway obtained the same result, higher performance in companies that were innovative to those that were not. Finally, the study of Yamin *et al*. (1999) evaluated the impact of business innovation performance of SMEs in Australia reaching the same result, the most innovative organizations have a positive impact on the performance of Australian SMEs. So, the fourth and final hypothesis of this research is formulated.

- H_4: innovation has a direct and positive impact to the performance of Mexican SMEs

MATERIALS AND METHODS

Data: It was developed a questionnaire which was personally delivery to managers or owners of companies surveyed, for the calculation of the sample the National Statistical Directory of Economic Units (DENUE) of the National Institute of Statistics and Geography was used, resulting in a universe of 3,586 manufacturing, trade and service firms; when applying a simple sampling, 400 SMEs were interviewed with +/- 5% maximum error and a confidence level of 95%.

Measures: All variables were tested and measured using multiple items scales based on previous studies by Churchill Jr. (1979). The scale MARKOR of Kohli and Jaworski (1990) was used for the development of the instrument to measure the construct of market orientation which is considered as the generation of market intelligence for current and future needs of the consumer, the dissemination of information to departments of the company and the response to this information, consisting of three dimensions: information generation, dissemination of information and responsiveness.

The construct of entrepreneurial orientation is defined as the ability of a company to address the environmental risks, identify opportunities for technological development, obtaining the resources necessary for the growth of the company (Lumpkin and Dess, 1996). This construct was measured by five dimensions with an adaptation of the scale of these researchers: autonomy, innovation, risk-taking, proactivity and competitive aggressiveness. Learning orientation "is the basic attitude a company has toward learning that leads to having organizational learning processes (Sinkula *et al*., 1997). Learning orientation was measured with an adaptation of the scale (Sinkula *et al*., 1997) using the dimensions of commitment to learning, shared vision and open-mindedness.

Innovation was measured by the scale that has been used in different empirical studies (Auken *et al*., 2008) and measured with three-dimensiona), product innovation, innovation process and innovation system management.

The scale to measure the construct of "performance" was an adaptation of scales used in different empirical studies (Narver and Slater, 1990; Kohli and Jaworski, 1990; Gomez, 2008). Achievement of goals, increase in sales, customer satisfaction, employee satisfaction and overall business performance were aspects evaluated in this construct.

RESULTS AND DISCUSSION

In accordance with accepted practice (Churchill Jr., 1979; Anderson and Gerbing, 1988) we assessed the properties of scales of unidimensionality, discriminant validity and reliability. All analysis where made through the software EQS (Bentler, 1989; Brown, 2006; Byrne, 2006). In first term by examining the reliability of the constructs through Cronbach alpha (Nunnally and Bernstein, 1994). Cronbach alpha values oscillate between 0.703 and 0.920 (Table 1) all exceed the value of 0.7 (Cronbach, 1951) and complex feasibility index which are established by Bagozzi and Yi (1988), the values of this index oscillate between 0.659 y 0.974. Next, the entire group of items was subjected to Confirmatory Factor Analysis (CFA). The standardized factorial charges and the goodness of adjustment indexes are also described in Table 1. The adjustment indexes used were The Normed Fit Index (NFI), Non-Normed Fit Index (NNFI), Incremental Fit Index (IFI), Comparative Fit Index (CFI) and the Root Mean Square Error of Approximation (RMSEA) (Byrne, 1989; Bentler, 1990; Hair *et al*., 1995). It is also noted that the values of these indexes oscillate between 0 and 1.00 and that the values close to one would indicate a good adjustment (Byrne, 1998). Additionally, the error measurements should ideally be between 0.05 and 0.08 (Joreskog and Sorbom, 1986; Hair *et al*., 1995).

The results obtained from the Confirmatory Factor Analysis (CFA), Table 1 described the standardized factorial charges and the adjustment indexes which indicate that has a good fit (SB = 1365.25; df = 795; NFI = 0.875; NNFI = 0.935; CFI = 0.943; RMSEA = 0.042). This is how we obtain that, all items from the related factors are significant ($p<0.001$) (Anderson and Gerbing, 1988) and the size of all standardized factor loads in average exceed 0.70. Cronbach's and IFC have a greater value of 0.70 and Extracted Variance Index (EVI) has a value greater than 0.50 (Fornell and Larcker, 1981). Hence, it is confirmed that each variable contributes in a significant manner to the definition of the concept and therefore such convergent validity exist and that the adjustment indicators suggest that the constructs are unidimensional and are adjusted to the data (Table 1).

In order to measure the discriminant validity of the scales used, the analysis was performed in two different ways: the first is the test confidence interval is proposed by Anderson and Gerbing (1988) has establishes confidence interval of 95% none of the individual elements from the latent factors correlation matrix has value of 1.0; the second method used was described by Fornell and Larcker (1981) in which the extracted variance of each pair of constructs is higher than their corresponding Extracted Variance (EVI). The two methods used having positive results, confirming the discriminant validity of the scales used, the results of those test are displayed in Table 2.

After verifying the validity and reliability of the scales used in the model, the model fit was proved through the following adjustment indexes NFI and CFI which were greater than 0.9 confirming that they are acceptable and NNFI is very close to 0.9, the value of RMSEA is 0.054 which is a value lower than 0.08 as recommended limit. The chi square between the degrees of freedom is equal to 1.98. Therefore, it is considered to have an acceptable fit according to the theory.

After verifying the adjustment of the model, the hypotheses were compared. Regarding the hypothesis one in which is formulated a direct and positive impact between market orientation on innovation of SMEs in the state of Aguascalientes was rejected with a t value of 1.810 which did not reach significance level of 0.05. As for the second hypothesis where a direct and positive impact on entrepreneurial orientation on innovation of SMEs in the state of Aguascalientes is formulated, we can observe in Table 3 having a standardized coefficient of 0.302 and a t-value of 4.530 which permit us to accept the hypothesis with a significance of 0.001*** (Table 3).

The third hypothesis indicates a direct and positive impact of learning orientation on innovation of SME's in the State of Aguascalientes. In Table 3, this relationship has a standardized coefficient of 0.165 and t-value of 2.640, thus, allowing accepting the hypothesis with a significance of 0.01**. Finally, the latter hypothesis in which is formulated a direct and positive impact between innovation and the results of SMEs in the State of Aguascalientes has a standardized 0.261 coefficient and t-value of 2.740 with a **0.01 significance, consequently the hypothesis is accepted.

Table 1: Reliability and convergent validity of the measurement scale

Variables[1]	Index	Factorial load	Robust t-values	Cronbach α	IFC	IVE
Generation of	1	0.860***	1.000	0.920	0.750	0.696
Information (GI)	2	0.914***	25.434			
	3	0.718***	20.123			
Dissemination of	1	0.811***	1.000	0.870	0.685	0.515
Information (DI)	3	0.668***	16.288			
	I7	0.666***	15.774			
Design Response (DR)	1	0.886***	1.000	0.873	0.784	0.598
	2	0.791***	18.447			
	6	0.621***	13.302			
Innovation (IN)	1	0.832***	1.000	0.833	0.802	0.634
	2	0.868***	18.585			
	3	0.676***	15.823			
Risk-taking (RT)	1	0.929***	1.000	0.915	0.939	0.776
	2	0.927***	33.763			
	R	0.779***	25.399			
Proactivity (PR)	1	0.831***	1.000	0.847	0.811	0.623
	2	0.890***	20.427			
	3	0.623***	15.382			
Competitive	1	0.911***	1.000	0.772	0.974	0.528
Aggressiveness (CA)	2	0.698***	14.553			
	6	0.518***	9.892			
Autonomy (AU)	1	0.828***	1.000	0.761	0.666	0.503
	2	0.700***	14.124			
	6	0.579***	10.791			
Shared Vision (SV)	1	0.874***	1.000	0.881	0.895	0.713
	2	0.918***	28.339			
	3	0.731***	21.160			
Commitment to	COA1	0.917***	1.000	0.899	0.928	0.759
Learning (CL)	COA2	0.945***	27.952			
	COA3	0.737***	20.183			
Open-mindedness (Omi)	1	0.794***	1.000	0.867	0.659	0.501
	3	0.714***	16.250			
	5	0.584***	11.777			
Product Innovation (PI)	2801B	0.869***	1.000	0.703	0.905	0.725
	2802B	0.834***	20.849			
Innovation Process (IP)	2803B	0.866***	1.000	0.704	0.934	0.767
	2804B	0.886***	31.085			
Management Innovation (MI)	2805B	0.876***	1.000	0.706	0.947	0.790
	2806B	0.884***	31.088			
	2807B	0.907***	34.626			
Performance (PER)	1	0.532***	1.000	0.855	0.806	0.621
	4	0.739***	10.963			
	5	0.953***	10.849			
	6	0.865***	11.603			

[1]Model fit measures for the general model χ^2 = 1365.251 GL = 795; p = 0.000; NFI = 0.875; NNFI = 0.935; CFI = 0.943; RMSEA = 0.042. Significance level: ***p<0.01

The model was developed according to the theory of the four hypotheses formulated as a result, one of them was rejected and three accepted. The first hypothesis stating market orientation positively direct affects innovation of SMEs in the State of Aguascalientes was rejected with no significant t-value of 0.05. These results do not correspond with other findings (Lukas and Ferrell, 2000; Pelham and Wilson, 1995; Vijande *et al*., 2000) which argue the same relationship. It should be noted although it is 0.1 of significance and is very close to 0.05, the interpretation by no showing no significance to the proposed level indicates that the processes of generating, disseminating and responding to market information are not a precedent that positively impact product innovation, process and management significantly. This discrepancy with previous research may be due to the impact on innovation does not happen immediately, especially, it depends on whether innovation is incremental or radical if the study is about innovation of product or refers to process innovation or management. It would be advisable to inquire more about it, deepening in the characteristics of the sample and results in different types of innovation.

Concerning the following three hypotheses on the model, they were accepted with significant values at 0.001 and 0.01, the result of the second hypothesis is the same as the findings of most similar studies that analyze this relationship such as the study of Huang and Wang (2011) in which concluded that the entrepreneurial orientation

Table 2: Discriminant validity

Variables[2]	GI	DI	DR	IN	RT	PR	CA	AU	SV	CL	Omi	PI	IP	MI	PER
GI	**0.696**	0,391	0.148	0.101	0.098	0.116	0.131	0.171	0.198	0.132	0.451	0.160	0.145	0.053	0.018
	0.476														
DI		**0.515**	0.284	0.147	0.277	0.141	0.424	0.288	0.163	0.123	0.391	0.244	0.190	0.119	0.038
	0.776														
	0.240	0.386													
DR			**0.598**	0.133	0.197	0.207	0.230	0.322	0.162	0.173	0.215	0.230	0.232	0.097	0.042
	0.385	0.681													
	0.199	0.264	0.237												
IN				**0.634**	0.239	0.094	0.169	0.160	0.077	0.172	0.130	0.168	0.140	0.134	0.021
	0.439	0.504	0.493												
	0.174	0.383	0.294	0.359											
RT					**0.776**	0.131	0.209	0.172	0.164	0.185	0.136	0.380	0.358	0.195	0.023
	0.454	0.671	0.594	0.619											
	0.217	0.256	0.322	0.199	0.236										
PR						**0.623**	0.256	0.141	0.131	0.123	0.144	0.184	0.198	0.124	0.022
	0.465	0.496	0.590	0.415	0.488										
	0.228	0.358	0.336	0.292	0.320	0.378									
CA							**0.528**	0.215	0.090	0.082	0.187	0.125	0.133	0.126	0.054
	0.776	0.626	0.624	0.532	0.596	0.634									
	0.282	0.401	0.422	0.285	0.281	0.258	0.336								
AU								**0.503**	0.09	0.110	0.208	0.112	0.118	0.092	0.028
	0.546	0.673	0.714	0.517	0.549	0.494	0.592								
	0.307	0.274	0.263	0.164	0.270	0.243	0.173	0.178							
SV									**0.713**	0.213	0.272	0.123	0.098	0.089	0.004
	0.583	0.534	0.543	0.392	0.542	0.483	0.429	0.422							
	0.228	0.223	0.274	0.293	0.291	0.231	0.162	0.208	0.328						
CL										**0.759**	0.142	0.386	0.412	0.249	0.024
	0.500	0.479	0.558	0.537	0.571	0.471	0.414	0.456	0.596						
	0.392	0.484	0.324	0.247	0.237	0.262	0.305	0.331	0.388	0.253					
Omi											**0.490**	0.150	0.110	0.130	0.051
	0.672	0.768	0.604	0.475	0.501	0.498	0.561	0.583	0.656	0.501					
	0.196	0.296	0.624	0.233	0.403	0.249	0.160	0.149	0.160	0.416	0.202				
PI												**0.725**	0.245	0.501	0.051
	0.604	0.692	0.696	0.589	0.831	0.609	0.548	0.521	0.096	0.828	0.574				
	0.172	0.235	0.260	0.195	0.379	0.259	0.165	0.152	0.314	0.430	0.142	0.395			
IP													**0.767**	0.419	0.035
	0.592	0.639	0.704	0.555	0.819	0.631	0.565	0.536	0.099	0.854	0.522	0.595			
	0.028	0.147	0.097	0.187	0.230	0.171	0.157	0.114	0.103	0.295	0.171	0.616	0.584		
MI														**0.790**	0.050
	0.436	0.543	0.529	0.547	0.654	0.535	0.553	0.494	0.495	0.703	0.551	0.800	0.712		
	0.065	0.123	0.125	0.084	0.078	0.087	0.155	0.100	0.002	0.088	0.151	0.119	0.081	0.114	
PER															**0.621**
	0.205	0.271	0.285	0.212	0.226	0.215	0.311	0.240	0.13	0.228	0.303	0.335	0.297	0.334	

[2]The diagonal (in bold) represents the Extracted Variance Index (EVI) while above diagonal the variance part is shown. Below diagonal is the correlation estimation of factors with a confidence interval of 95%

Table 3: Results of hypothesis testing

Hypothesis	Structural relationship	Standardized coefficient	Robust t-values	Hypothesis testing
H_1: there is a direct and positive relationship between market orientation and innovation in SMEs in Aguascalientes	MO→IN	0.100	1.810	Hypothesis rejected
H_2: there is a direct and positive relationship between entrepreneurial orientation and innovation in SMEs in Aguascalientes	EO→IN	0.302***	4.530	Accepted hypothesis
H_3: there is a direct and positive relationship between learning orientation and innovation in SMEs in Aguascalientes	LO→IN	0.165*	2.640	Accepted hypothesis
H_4: there is a direct and positive relationship between innovation and results in aguascalientes SMEs	IN→RES	0.261**	2.740	Accepted hypothesis

SBX2 = 1880.57; df = 946; NFI = 0.904; NNFI = 0.894; CFI = 0.907; RMSEA = 0.054; p-value: ***p<0.001 extremely significant; **p<0.01 very significant; *p<0.05 significant

with market orientation positively affect innovation of companies or the study of Khan and Manopichetwattana (1989) who claim that innovative firms demonstrate more application to the dimensions that compose the entrepreneurial orientation. The studies of Avlonitis and Salavou (2007) have the same conclusion, there are also authors that point out that the entrepreneurial orientation will reduce barriers for businesses to innovate which can confirm the obtained results in this study, indicating that SMEs of Aguascalientes are willing to take risks be proactive, generate aggressive actions against competition and have a culture of autonomy (entrepreneurial orientation) will also lead to the development of a capacity innovation.

The third hypothesis was accepted, the result is consistent with the findings of various studies discussed above (Eshlaghy and Maatofi, 2011); one of them is the Huang and Wang (2011) study which emphasizes the importance of learning orientation for companies to innovate but it is recommended to have correct market orientation and entrepreneurial orientation to potentiate the positive effect (Calantone *et al*., 2002; Huang and Wang, 2011).

The acceptance of this hypothesis concerns that SMEs State of Aguascalientes besides having to develop the necessary actions to increase market orientation and entrepreneurial orientation must have a greater commitment to learning, shared vision and open mind (learning orientation) to positively impact innovation companies. These results are consistent with several studies discussed in the section on literature review (Dess *et al*., 1997; Vossen, 1998; Robinson and Pearce, 1988; Storey, 2000; Freel, 2000; Keller, 2004).

With the last accepted hypothesis can be stated that innovation is an important antecedent in companies to improve performance of small and medium enterprises in Aguascalientes.

CONCLUSION

We can affirm that a company should develop two of the three strategic orientations (market orientation, entrepreneurial orientation and learning orientation) posed in the model to generate innovation in products, processes and management, thereby achieving better results in SMEs.

On the other hand, it is important to note that although, the study refers to small and medium enterprises in an emerging country such as Mexico, the results cannot be generalized to the whole country. It should be contrasted with a sample of companies from the North and Southeast of the country.

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