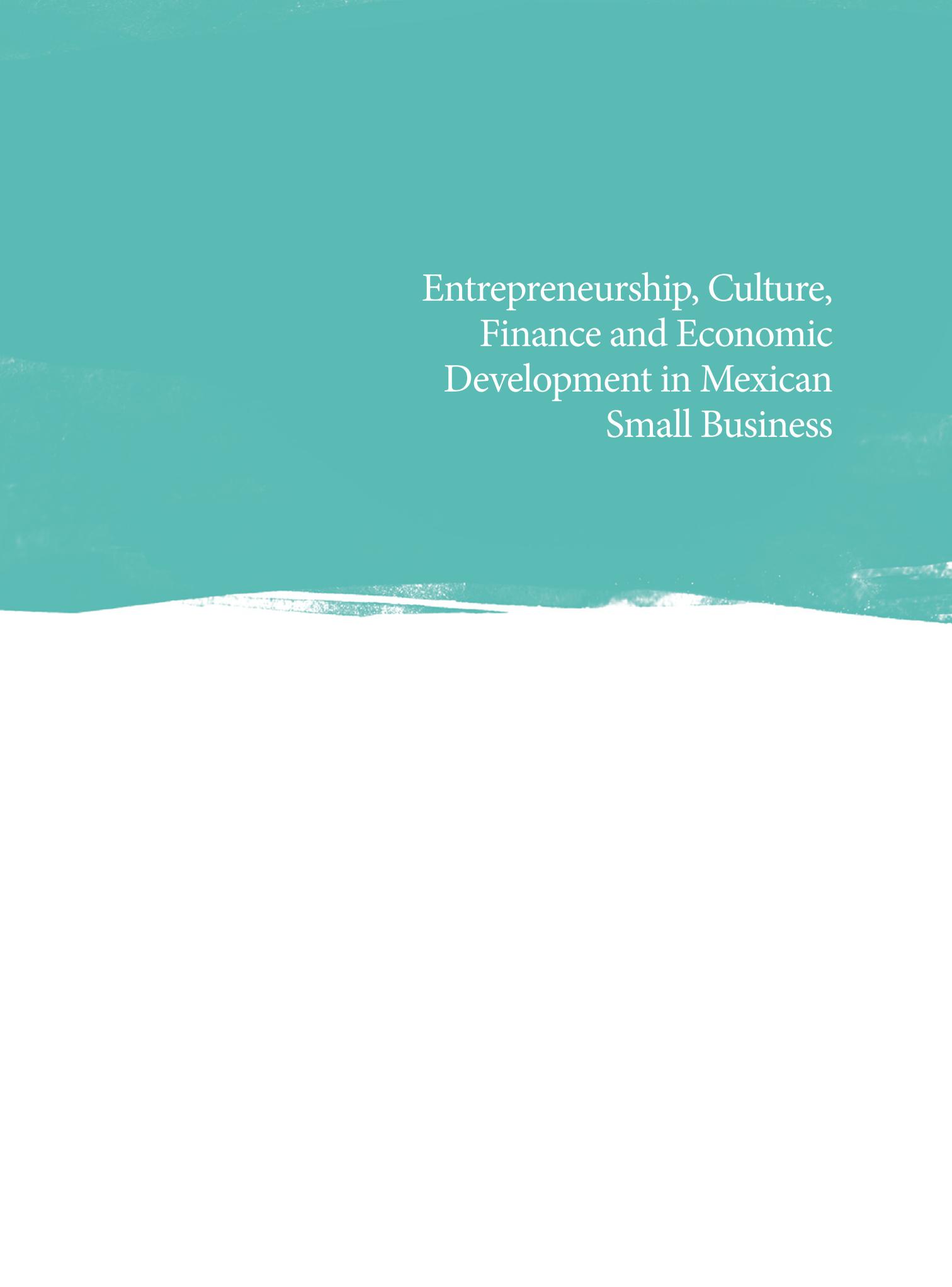


Entrepreneurship, Culture, Finance and Economic Development in Mexican Small Business

Gonzalo Maldonado Guzmán
Sandra Yesenia Pinzón Castro
José Trinidad Marín Aguilar
Jean Bonnet
Domingo García Pérez de Lema
Coordinadores





Entrepreneurship, Culture,
Finance and Economic
Development in Mexican
Small Business



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UNIVERSIDAD AUTÓNOMA
DE AGUASCALIENTES

Entrepreneurship, Culture, Finance and Economic
Development in Mexican Small Business

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Prolog

This collection of thirteen academic papers on Entrepreneurship, Culture, Finance and Economic Development in Mexican Small Business published in this book were presented at a two-day conference held at the University of Aguascalientes, October 2017. They cover, as the title suggests, a wide area within what one may call applied small business research and use a variety of data sources and statistical techniques to examine real-world issues. The chapters are almost exclusively empirical in nature and therefore offer not only interesting research findings for Mexico (and the wider developing world) but also have the potential to offer new information and advice to policy-makers.

It has been known for many years that SMEs are major job, income and innovation providers in any economy and research into SMEs is thus essential to understand how the economy functions and how its development may be enhanced. The contents of this book are thus more than 'academic' in nature. In this Prolog, I shall focus on the main discernible themes of the conference which I identify as enterprise growth and sustainability and the role of risk management, innovation and finance in aiding and abetting this process.

Enterprise Sustainability

It is well known that 'most firms die young' (see e.g. Cressy, 1996, 2006; Cressy and Bonnet, 2016, 2017). Any policy oriented towards SMEs must

therefore take into consideration the role of sustainability of enterprises, in other words their longevity. Empirical research shows that firms are at their most vulnerable in the early stages of life and that if they survive to around three years they become increasingly likely to persist into the long run (Cressy and Bonnet, 2017). The problem then, is how to get them to survive the 'Death Valley' of the early years.

Risk Management

Recent theoretical research indicates that entrepreneurs who can manage risk and can grow their businesses are less likely to fail (Cressy, 2006). Relevant risk may be conveniently divided into financial and market types and failure of the business may occur because of the failure of the entrepreneur to engage with each kind.

Financial risk of SMEs is associated on the one hand with the use of bank debt (raising leverage increases chances of meeting debt obligations when revenue is fluctuating) and on the other with the availability of collateral to mitigate credit constraints (banks may require collateral if they are to offer the entrepreneur a loan) (see Cressy and Bonnet, 2016 for recent European evidence).

Enterprise Development

Growth of sales tautologically depends on the entrepreneur's ability to develop a market for his/her products or services and therefore simultaneously to manage the second kind of risk, market risk, the threat and reality of product market competition. Product differentiation and product innovation are important strategies for developing niche and broader markets and (if the innovation is deep enough) of even changing the rules of the market game to gain market dominance.

Innovation as a Market Development Strategy

Product innovation must be geared to demand. Anticipating consumer needs and willingness to pay is thus central to its success. Familiarity with the market ('market orientation') is the first step in this process. Chapter 1 of the book therefore examines the impact of entrepreneurs' exposure to the market, of the progressive deepening of the entrepreneur's market orientation and the effects of these on the profitability and ultimately on the sustainability of the enterprise.

Four of the Chapters in the book address the important question of the determinants of innovation, specifically in the Mexican context, and its relation to facilitating factors such as government support. Chapter 1 therefore examines the fundamental question: How is innovation generated at

the micro level and what are the implications this for firm profits and firm sustainability. Does government support enhance the prospects of nascent enterprises by protecting them at an early and vulnerable stage in their lives? Chapter 5 examines the role of government support for innovation, specifically the role of business incubators in nurturing young Mexican startups. Growth enterprises facing asymmetric information in the finance markets often need equity finance rather than debt. But does equity ('entrepreneurial') finance itself stimulate innovation? Chapter 8 explores the interaction between innovation and finance to answer this question. Looking at widely used technologies in SMEs, can we say that enterprises that rely on them are more viable than those that do not? In Chapter 10 the role specifically of Information and Communication Technologies (ICT) in the sustainability of enterprises is addressed.

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Anuar 2018

Chapter 1

The Entrepreneurial and Market Orientation in the Results of Innovation and Profitability of the SME

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Abstract

The purpose of this article is to analyze the opportunities for entrepreneurship, the behavior of the entrepreneurial orientation and the orientation towards the market that is developed in the SME, and the effects which exert in the innovation and the profitability in the field of SME. The research is based on a sample of 1012 trade, services and industrial enterprises of the Northwest region of Mexico. The data collection was carried out during the period from September to December 2016, through a self-directed survey to the manager. The relations estimates have been tested through the Structural Equation System (SEM) based on the variance with the PLS technique, supported by the software SmartPLS version 3.2.6. The results demonstrate that business opportunities have a significant influence on the entrepreneurial orientation. In addition, entrepreneurial orientation and market orientation have a significant influence on innovation activities and on the profitability of SMEs. For these types of companies, it is important to continue developing business practices and take advantage of internal and external opportunities to convert them into innovative enti-

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ties. This investigation contributes to the development of the literature on entrepreneurial behavior and dynamic abilities.

Keywords: Entrepreneurial orientation, market orientation, innovation, profitability, SMES.

Introduction

Entrepreneurship has been one of the most studied subjects in recent years mainly by experts and researchers in the business administration area (Zahra & Wright, 2011). Throughout these investigations there has been a firm intention of knowing the impulses, the behavior of the entrepreneurs and the entrepreneurial spirit (Covin & Lumpkin, 2011). Being the entrepreneurial behavior a central point of the business process and of the competitiveness of the organization (Marvel, Davis, & Sproul, 2016). In general, the development and competitiveness of the companies are achieved through intentions and orientations focused on entrepreneurship (Anderson, Kreiser, Kuratko, Hornsby, & Eshima, 2015). These entrepreneurial behaviors are intimately related to proactivity, competitive aggressiveness, risk, autonomy and the ability of innovation (Matsuno, Mentzer, & Özsoy, 2002).

Entrepreneurship is considered as the fundamental axis of knowledge which supports the detection of business opportunities (Rauch, Wiklund, Lumpkin, & Frese, 2009). For this purpose, the entrepreneur utilizes all the abilities to transform the resources and to take advantage of them in the new business opportunities (Jantunen, Ellonen, & Johansson, 2012). Business opportunities with an innovative approach, which are put into practice, are generally riskier (Suddaby, Bruton, & Si, 2015). To counteract these effects, in addition to detecting opportunities, entrepreneurs must focus their resources and abilities on profitable markets (Lessard, Teece, & Leih, 2016). However, in today's highly competitive markets, entrepreneurs must develop the market orientation (MO) capability. This ability is considered as an activity that derives from the philosophy of total quality and marketing theory (Kirca, Jayachandran, & Bearden, 2005).

Therefore, the MO is considered as a marketing strategy which helps the company to detect market opportunities, satisfy customers, create superior value for customers and study the competitor (Jaworski, Kohli, & Sahay, 2000; Kaur & Gupta, 2010). These capabilities and business practices which help the company in its growth, development and consolidation are addressed by the theory of dynamic capabilities. This theory states that the superior and sustained innovation and profitability achievements are a consequence of entrepreneurial ability and the use of resources and capabilities (Teece, 2007).

Nevertheless, in enterprises named SMES (Small and medium-sized enterprises), these accomplishments are difficult to achieve. This is mainly due to difficulties in accessing financial credits, lack of technological infrastructure, lack of interest in innovation, lack of support for govern-

ment subsidies, lack of entrepreneurial skills and a focus on short-term results (Kuckertz & Wagner, 2010; McKeever, Jack, & Anderson, 2015). In the empirical revision, there is found a significant number of studies which analyze the relationship between entrepreneurial orientation and market orientation compared to innovation and efficiency in the enterprises (Miles & Arnold, 1991; Zahra, Sapienza, & Davidsson, 2006). These investigations have mostly analyzed the effect of these variables on large companies (Zahra & Wright, 2011).

Despite the growth in the analysis of these variables at the SME level, these studies are still at a development stage (Zahra, Wright, & Abdelgawad, 2014). In this investigation, the R&D and financing opportunities to the traditional model of entrepreneurship and market orientation have been added, which lead the company to achieve better innovation and profitability results. Two main objectives have been considered in the analysis. In the first place, it has been studied the effects of entrepreneurship and market orientation on innovation and profitability in SMEs. In the second, there were analyzed the effect of R&D and funding opportunities on entrepreneurship orientation (EO). The research questions elaborated for this investigation are:

1. Do R&D opportunities have an influence on entrepreneurial orientation?
2. Do financing opportunities exert influence on entrepreneurial orientation?
3. Does the EO influence market orientation and SME innovation?
4. Does the MO, have an influence on the innovation and profitability of SMEs?

This investigation article has the following structure: The first part presents the review of the literature, the empirical revision and the development of the hypotheses. Secondly, the methodology utilized, the sample and its characteristics are explained. In addition, the justifications of the variables under study are described, and at the final section, the results, discussions and conclusions of the research are presented.

Literature and Hypothesis Development

Entrepreneurship and its Opportunities

The term entrepreneur is often associated with people who take on business risks (Ardichvili, Cardozo, & Ray, 2003). These challenges can be taken for the creation of a new company or for the development of an existing one. For businesses in progress, this process is known as corporate entrepreneurship and/or intra-entrepreneurship (Aloulou & Fayolle, 2005). A potential entrepreneur could be immensely creative, but without proper detection of real opportunities this distinctive feature has no rationale to

be (Eckhardt & Shane, 2003; Short, Ketchen Jr, Shook, & Ireland, 2010). Throughout the development of entrepreneurship there appeared barriers, on the other hand, there are also opportunities which could change the course of the entrepreneur (Hansen & Shrader, 2007).

There exist studies in this field that ensure that technological and innovation opportunities encourage the successful development of new companies and impulses the growth of existing ones (Zahra et al., 2006). The entrepreneurs and companies which detect a necessity of market and customers, develop new products, improve existing ones and make an effort to invest in the development of new prototypes (Avlonitis & Salavou, 2007; Wynarczyk, 2013). In addition, researches have demonstrated that entrepreneurs have visualized financing from two perspectives, as an excellent opportunity to be undertaken and another, as a barrier which could affect the development of business ideas and the company's evolution (Aparicio, Urbano, & Audretsch, 2016). Therefore, the following hypotheses have been developed:

H1. At a higher level of research and development, the level of entrepreneurial orientation in the SME is increased.

H2. At a greater financial opportunity, the level of entrepreneurship in SMEs is increased.

The Entrepreneurial and Market Orientation in Innovation

There exist different theories which address the importance of entrepreneurship orientation and market orientation in the development of innovative capacity and innovation results (Teece, 2007). One of the most recent and with greater impact is the theory of dynamic capabilities. From this perspective, there are different studies that have concluded that opportunities, skills, proactivity, risk assumption, training and orientation towards entrepreneurship are determinant for the development and consolidation of companies of different dimensions (Lessard et al., 2016). These entrepreneurial behaviors have led companies to take advantage of opportunities, introduce new products and improve the processes (Sirén, Hakala, Wincent, & Grichnik, 2017). Other studies have assumed that entrepreneurial behaviors accompanied by an excellent corporate strategy help small businesses gain competitive advantage, improve innovation, and increase their development (Lechner & Gudmundsson, 2014; Li, Zhao, Tan, & Liu, 2008).

Additionally, entrepreneurship is often related to OM and to innovation, as some researchers claim that when entrepreneurs manage to develop and execute their resources and capabilities to the maximum level towards the market, a consequence on innovation is cultivated and acceptable financial results are achieved (Lechner & Gudmundsson, 2014). In this same direction, it has become evident that SME managers who approach their resources and capabilities, on new and existing markets

in order to satisfy their necessities, analyze the competitor in depth and develop marketing strategies towards detected segments, have been able to introduce innovations in products, production processes and their distribution, thus making them more competitive, increasing their competitiveness and profitability (Zahra & Wright, 2011). From the foregoing, the following hypotheses have been developed:

H3. At greater entrepreneurial orientation, the practices and / or level of market orientation in the SME are increased.

H4. At greater market orientation practices, the level of innovation in SMES is increased.

H5. At greater market orientation practices, there exists a greater innovation in the SME.

Market Orientation, Innovation and Profitability

Market orientation and innovation have long been key factors on raising profitability in companies (Chang, Franke, Butler, Musgrove, & Ellinger, 2014). However, their measurement and impact on competitiveness and organizational performance has not been an easy task to quantify (Langerak, Hultink, & Robben, 2004). Regularly the innovation modes of the companies are based on the STI (Science, Technology and Innovation) mode and in the DUI (Doing, Using and Interacting) mode. The STI mode is supported by R&D laboratories or through cooperation with researchers in the scientific sector (González-Pernía, Parrilli, & Peña-Legazkue, 2015). On the other hand, the DUI learning mode is based on the experience and acquired knowledge of informal interactions (Jensen, Johnson, Lorenz, & Lundvall, 2007).

Some researchers have concluded that there are SMES that have successfully developed their products and processes with market orientation through empirical knowledge and which, at the same time, have been more competitive and have obtained long-term financial returns (Chang et al., 2014). Additionally, in recent studies there have been informing that market knowledge has allowed entrepreneurs to establish effective strategies with investment in R&D, thus, there have been developing innovative products, which could impulse SMES towards consolidation in a short and medium term (Hervas-Oliver, Sempere-Ripoll, & Boronat-Moll, 2014). These business practices have been having a significant impact on the profitability of SMES. In this same direction, the capacity for innovation in products and processes developed by some companies and SMES, has been improving through the incorporation of open innovation and employee experience (Popa, Soto-Acosta, & Martinez-Conesa, 2017).

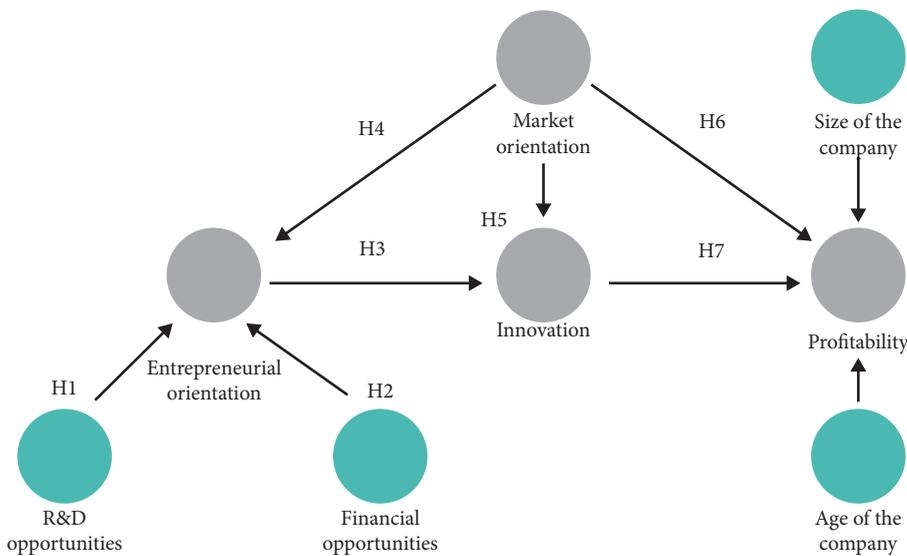
These actions have contributed substantially to the marketing processes, customer satisfaction and financial performance improvements (West & Bogers, 2014). In addition, more recent studies have corroborated

that entrepreneurs' learning in conjunction with innovation modes and capacity, impacts in a positive manner the SME's performance (Apanasovich, Heras, & Parrilli, 2016). From the above, the following hypotheses have been structured:

H6. As well the capacity of market orientation enhances, the level of profitability in the SM is increased.

H7. To greater innovation practices, the level of profitability in the SME is increased.

Figure 1. Theoretical model.



Source: Self-elaborated.

Methodology

The structure of the sample is based on the principles of stratified sampling for finite populations. The population is formed by SMEs in the services sector (telecommunications and real estate), trade and industrial sector (manufacturing and agribusiness) established in the Northwest of Mexico, which were segmented according to the activity criterion. The number of companies in each of the strata constructed has been obtained from the most recent Economic Census information prepared by the National Institute of Statistics and Geography (INEGI, 2014). The sample size was determined to make the maximum margin of error for the estimation of a proportion (relative frequency of response in a specific item of a question) less than 0.03 points with a 95% confidence level. The technique for collecting information was through a personal interview (questionnaire) addressed to the general manager of SME.

The data collection was carried out from September to December 2016. Finally, a sample of 1012 companies was obtained, 47.7% belongs to the services sector, 29.1% to the commerce sector and 23.2% % to the industry sector. The composition and characteristics of the sample can be seen in Tables 1 and 7.

Table 1. Sector and size of the companies.

Sector	No. of companies	SE	ME	% total
Services	483	349	134	47.7
Trade	294	249	45	29.1
Industrial	235	191	44	23.2
Total	1012	789	223	100.0

Source: Self-elaborated. SE=Small Enterprise (4 a 50 employees), ME=Medium-sized Enterprise (51 a 585 employees).

Measurement of variables: Reflective variables were utilized in this investigation. The main characteristic of these models is that the direction and influence go from the construct towards the indicator. The indicators and / or variables, which were observed, constitute a reflex or expression of the construct that is not observed but is related (Jarvis, MacKenzie, & Podsakoff, 2003). Reflective variables are characterized by the fact that all the indicators of a construct are highly correlated (co-vary); are interchangeable, and deleting an indicator does not alter the content of the construct (Jarvis et al., 2003; Wetzels, Odekerken-Schröder, & Van Oppen, 2009).

Opportunities for entrepreneurship. In the literature, there are some theories and empirical studies that address the opportunities of entrepreneurship as a key factor for business success. For this study, the theory of dynamic capacities in the field of microenterprise has been considered (Teece, 2007). From this theoretical and empirical review, managers of SMEs have been asked to answer the questions measured on a Likert scale of 5 points (1= total disagreement, 5=total agreement). For this purpose, there have been divided the business opportunities into: (1) R&D opportunities, measured by 4 structured questions based on the studies of Zahra et al. (2006) and Suddaby et al. (2015), and (2) Financing opportunities, measured by 6 questions which were developed based on the research of Short et al. (2010) and Naudé (2013), see Table 2.

Table 2: Internal consistency and convergent validity by construct.

Variables	FL	CR	CA
Opportunities for Entrepreneurship			
Research and Development (R&D):		0.9211	0.901
There are government support to acquire new technologies	0.820***		
Companies can afford the latest technologies	0.906***		
Companies have access to new research	0.899***		
Knowledge to innovate is acquired from universities and research centers	0.863***		
Financing:		0.883	0.843
There is financing available to businesses	0.778***		
There is a sufficient supply of risk capital	0.734***		
There is sufficient financing available from investors	0.779***		
There are enough public subsidies available for companies	0.736***		
There is sufficient financing from financial institutions	0.731***		
There is sufficient equity of the entrepreneurs	0.717***		

Source: self-elaborated. Note: FL=Factor load, CR=Composite reliability, CA=Cronbach's alpha.

Entrepreneurial orientation. For the measurement of this variable, the main theories which address with entrepreneurial behavior and entrepreneurship orientation have been studied as means to increase innovation and profitability (Lumpkin, Cogliser, & Schneider, 2009). Derived from this theoretical and empirical analysis, managers of SMEs have been asked to answer the questions measured on a Likert scale of 5 points (1=total disagreement, 5=total agreement). This variable has been divided into: (1) Innovation activities, measured by 3 structured questions taken as reference the studies of Matsuno *et al.* (2002) and Wiklund and Shepherd (2005), and (2) Proactivity activities, measured by 6 questions developed based on the research of Lumpkin and Dess (2001) and Hughes and Morgan (2007), see table 3.

Table 3: Internal consistency and convergent validity by construct.

Variables	FL	CR	CA
Entrepreneurial orientation		0.874	0.827
Innovation activities:			
We are quick to introduce new products and services	0.673***		
There is a strong emphasis on R&D, IT leadership and innovation	0.746***		
The changes of products and / or services are successful	0.733***		
Proactivity activities:			
The company has greater capacity to realize its vision	0.736***		
The company has greater capacity to identify new opportunities	0.724***		
The company initiates actions for competitors to react	0.783***		

Source: self-elaborated. Note: FL=Factor load, CR=Composite reliability, CA=Cronbach's alpha.

Innovation. This variable was measured based on the OECD (2005) and Teece (2010) models. The questionnaire gathers answers from SME managers about the degree of importance of the main practices and innovative activities which are developed in the enterprise. For this, a scale (Likert type about 5 points, where 1=not important and 5=very important) is utilized. The measurement of this variable is composed by 5 questions, which can be seen in table 4.

Table 4: Internal consistency and convergent validity by construct.

Variables	FL	CR	CA
Innovation activities:		0.881	0.830
The company actively seeks for innovative ideas	0.735***		
Innovation is easily accepted by the executives	0.829***		
Innovation is promoted in our organization	0.848***		
We are actively looking for innovative product and service ideas	0.721***		
Innovation success rate is relative to competitors	0.721***		

Source: self-elaborated. Note: FL=Factor load, CR=Composite reliability, CA=Cronbach's alpha.

Market orientation. In the analysis of the literature, a great variety of instruments and/or scales to measure market orientation in business could be found. For this study, the models developed by Kohli, Jaworski, and Kumar (1993) and Matsuno et al. (2002) have been considered. These models and scales have been the main references to measure the importance of OM in business in terms of the results of business innovation and profitability (Kirca et al., 2005). Due to the analysis elaborated, it has been requested to SME managers to answer 6 questions structured in the questionnaire

to rate the degree of importance of the effects of market orientation on competitors, customers and market in the last 2 years. For this purpose, a 5-point Likert scale was utilized where 1=not important and 5=very important, see table 5.

Table 5: Internal consistency and convergent validity by construct.

Variables	FL	CR	CA
Market Orientation		0.884	0.842
With regard to competitors, your company:			
Often analyzes SWOT of competitors	0.764***		
Responds quickly to competitive actions	0.770***		
Has investigated competitors for the last three years	0.732***		
With regard to customers and Market, your company:			
Has the best products and / or services on the market	0.709***		
Gets success by market and customer information	0.792***		
Reports and communicates customer experiences	0.717***		

Source: self-elaborated. Note: FL=Factor load, CR=Composite reliability, CA=Cronbach's alpha.

Performance. Historically this variable has been a proxy difficult to quantify accurately in the organization, due mainly to its complexity, nature and the resources that are applied in the routine processes (Garengo, Biazzo, & Bititci, 2005), this is aggravated in the SME. In this study, managers answered the questions to classify the competitiveness results of SMES based on profitability results, using a 5-point Likert scale where 1=poor performance in the previous 2 years and 5=high performance in the last 2 years. This variable was measured by 3 questions elaborated based on the studies of Quinn and Shapiro (1991) and Chenhall and Langfield-Smith (2007), see table 6.

Table 6: Internal consistency and convergent validity by construct.

Variables	FL	CR	CA
Profitability		0.932	0.891
Your company in the last 2 years:			
Has increased the percentage of its sales	0.898***		
Has increased its profits	0.911***		
Has achieved return on equity	0.907***		

Source: self-elaborated. Note: FL=Factor load, CR=Composite reliability, CA=Cronbach's alpha.

Table 7: Size and age of the company.

Characteristic	Minimum	Maximum	Mean	Typical Deviation
Age of the company	1	85	10.38	10,580
Size of the company (number of employees)	4	585	20.42	57,508

Source: self-elaborated.

Results

To evaluate the measurement model with variables of reflective type, the composite reliability of each item, the internal consistency of the scale and the convergent validity are analyzed. To measure the individual relation and reliability of each item, a standardized load of the factor higher than 0.707 is recommended (Chin & Dibbern, 2010; Vinzi, Chin, Henseler, & Wang, 2010). The results obtained in the present investigation are in the range of 0.673 to 0.911, close to and above 0.707. In our model, we have decided to include the value with a load of 0.673 for the following reasons: 1. It is significant at a level of 0.001; 2. It is very close to the acceptable threshold of 0.707; 3. This item is important for maintaining construct validity (Wang, Chen, & Benitez-Amado, 2015). The composite reliability indicates values ranging from 0.881 to 0.932, thus the requirement that the indicator should be above 0.80 for basic research, according to Nunnally (1978) and Vandenberg and Lance (2000) is accomplished. Cronbach's alpha is considered satisfactory over 0.700 (Hair, Black, Babin, Anderson, & Tatham, 2006). The results obtained indicate values between 0.827 and 0.896, demonstrating a high reliability of the construct.

The mean extracted variance (AVE) indicates the mean amount of variance explained by the construct indicators. In this investigation, the AVE values range from 0.53 to 0.82. These results are above the threshold of 0.5, as proposed by Hair, Black, Babin, Anderson, and Tatham (2010). Finally, the discriminant validity of the constructs in the model was verified by the analysis of the square root of the AVE. The results (diagonal) of the vertical and horizontal AVE are below the correlation between the constructs. This test does not detect any anomalies (see Table 8). The results provide adequate validity and reliability (convergent and discriminant).

Table 8: Discriminant validity of the theoretical model.

Variables	AVE	R&DO	FINAO	EO	INNO	MO	PROF
R&DO	0.762	0.873					
FINAO	0.597	0.310	0.746				
EO	0.538	0.327	0.237	0.733			
INNO	0.597	0.208	0.206	0.621	0.773		
MO	0.560	0.333	0.154	0.590	0.542	0.748	
PROF	0.820	-0.262	0.211	0.205	0.211	0.039	0.905

Source: self-elaborated. Note: AVE: average variance extracted, R&D Opportunities, FINAO: Financial Opportunities, EO: Entrepreneurial Orientation, INNO: Innovation, MO: Market Orientation, PROF: Profitability.

Table 9: Hypothesis test results.

Hypothesis	Value of Beta	T Score	P Value	F2	Confirmed / Rejected
H1. R&DO -> EO	0.281***	7.644	0.000	0.081	Confirmed
H2. FINAO-> EO	0.150***	6.400	0.000	0.023	Confirmed
H3. EO-> INN	0.462***	11.838	0.000	0.245	Confirmed
H4. EO-> MO	0.590***	17.811	0.000	0.534	Confirmed
H5. MO -> INNO	0.269***	6.421	0.000	0.083	Confirmed
H6. MO-> PROF	-0.068*	1.837	0.065	0.004	Confirmed
H7. INN -> PROF	0.259***	6.400	0.000	0.054	Confirmed

Source: self-elaborated. Note: *, $p < 0.1$, **, $p < 0.05$, ***, $p < 0.01$.

Table 9 indicates the results of the estimation with PLS. There is empirical support for all hypotheses structured in the model. The results of the hypotheses: H1 and H2, have significant and positive effects. This indicates that the R&D and financing opportunities have a strong relation to the entrepreneurial orientation in the SME, according to the beta value of 0.281*** and 0.150***. H3 and H4 are the ones which specify a greater intensity, indicating how much the entrepreneurial orientation exerts a significant and positive influence on innovation and market orientation in the SME, according to the beta values of 0.462*** and 0.590*** respectively. There are also found that H6 has significant but negative effects indicating that lower market-oriented practices make entrepreneurs less profitable, according to beta values -0.068*.

In addition, there is found that H7 has significant and positive effects. This indicates that companies that develop greater innovative activities achieve higher profitability, according to the value of beta 0.0259***. From the previous analysis, it is reported that all the structural relations of the model (hypothesis) have been confirmed. Finally, there were examined

the effect of control variables: age and company size in contrast with performance. The results indicate that these variables have a significant and positive influence on the profitability in the SME according to the values of: ($\beta = 0.206^{***}$) and ($\beta = 0.131^{***}$).

To evaluate the adjustment of the model in the SEM techniques are based on the covariance, in PLS it is not possible to estimate these measures. However, on PLS there are analyzed the value of trajectory coefficients, the analysis of (R^2) and the values of (F^2) which are significant individual measures to explain the predictive capacity of the structural model (Chin, 2010). The trajectory coefficients around 0.2 are considered economically significant. For the analysis of the explained variance and the prediction quality of the model through (R^2), the value (F^2) measures and provides the effect size included in the model. The Q^2 statistic test (cross-validated redundancy index) is utilized to evaluate and prove the predictive relevance of endogenous constructs in a structured model with reflective variables.

The model was evaluated through the blindfolding technique (Hair, Ringle, & Sarstedt, 2013). The values higher than (0), indicate a remarkable predictive quality (Hair et al., 2006). The data can be observed in the tables 9 and 10. In summary, it can be confirmed that this analysis provides an excellent predictive and explanatory capacity of the model. To further explanation about the predictive effect of our model, it has been added a goodness adjustment test performed by PLS. Thus, it has been taken the standardized residual mean square indicator (SRMR) when this value is in a range of (<0.08-0.1), there is an acceptable adjustment (Hair Jr & Hult, 2016). The result of 0.079, confirms that the proposed model has an acceptable predictive quality and demonstrates that the empirical results are aligned with the theory.

Table 10: Predictive quality and model adjustment.

Variable	R^2	Q^2
Innovation	0.431	0.241
Market Orientation	0.347	0.179
Orientation Entrepreneur	0.125	0.063
Profitability	0.117	0.039

Source: self-elaborated.

Discussion and Conclusion

Within the framework of the literature on the entrepreneurial orientation and the efforts focused on the demands of the market, SMEs have been considering these business practices to consolidate themselves in high competitiveness environments. In this section, there are discussed our findings in

the context of the theory of entrepreneurial behavior and dynamic capacities, theoretical currents that encompass business practices related to opportunities for entrepreneurship, market orientation, innovation and business profitability (Teece, 2012; Zahra et al., 2014). In the first place, we have discovered that opportunities for entrepreneurship (R&D and financing) are decisive for the development of new innovative ideas and the growth of SMEs (Zahra et al., 2006). These results are in line with the theory, emphasizing that the utilization of external opportunities for entrepreneurship increases the probability of success in innovative businesses (Teece, 2007).

In this same direction, our results have affirmed that the entrepreneurial orientation is positively related to the market orientation and to innovation, in accordance with that, it is verified that the companies that exploit to the maximum their resources and capacities towards the analysis of Markets, supervising the competitor and meeting the latent demands of consumers, may develop more innovative activity (Lessard et al., 2016). These results are in line with the theory and several empirical studies, affirming the close connection between these two variables which generate competitiveness and innovative activity for companies (Matsuno et al., 2002; Zahra et al., 2014). Additionally, we have discovered that the combination of entrepreneurship orientation and innovation activities substantially increase profitability results in SMEs.

Therefore, when companies are able to discover their capabilities and focus their resources on the market, there is a higher tendency towards customer satisfaction, increments on sales and increments on business profits (Engelen, Gupta, Strenger, & Brettel, 2015). These assertions are based on the theory of dynamic capacities (Teece, 2007). Finally, it was found that the age and size of the company have a positive and significant influence on profitability results. Results that follow those which are established by evolutionary economic theory explaining that as the company is growing its results express the same trend (Nelson & Winter, 2009).

In the research, it has been analyzed as focal points the entrepreneurial orientation and the market orientation that SMEs develop in order to exploit their capacities to innovate and achieve greater profitability results. In order to comply with the objective and research questions, the results indicate that: 1) SMEs are taking advantage of R&D and funding opportunities to obtain greater success in their entrepreneurial ideas and in the development of entrepreneurship; 2) entrepreneurial orientation and market orientation, are decisive for increasing the innovation activities which take place in SMEs; and (3) companies that focus on their dynamic capabilities in market orientation and innovation activities, are able to increase profitability results.

The results of the research have generated important implications for the development and consolidation of SMEs. 1. It is fundamental that SME managers continue to take advantage of internal and external opportunities for the development of entrepreneurship (Jantunen et al., 2012; Rodrigo-Alarcón, García-Villaverde, Ruiz-Ortega, & Parra-Requena, 2017). In addition to investing in R&D and financing to undertake, it would be desirable to establish collaborative networks with research centers and univer-

sities for the development of new products (Leydesdorff, 2013). It is also convenient that SMEs focus their resources and capacities on global markets, and 3. SMEs through their managers must exploit their dynamic capabilities, in order to visualize themselves as constantly moving and innovating companies that adapts themselves to highly competitive global environments.

The research indicates some limitations and on the other hand, it opens a significant opportunity for the development of future lines of investigation. The first limitation is the use of a single source of information. This, because the data were collected from self-reports and subjective perceptions expressed by managers of SMEs, which may bias the results. Secondly, the sample has been focused on various sectors of industry (services, trade and industry), in the future it could be focused on a particular sector to analyze their behavior during a certain time. The last limitation refers to the measurement scales utilized, since only reflective variables with scaling adaptations of other studies were considered.

In the future, in order to face certain limitations, it could be convenient to improve on the conceptual model, by including a greater number of constructs. Finally, due to the importance given to EO and MO as platforms for business development and growth, it is expected to develop research that will complement this study by incorporating variables such as leadership, human capital and open innovation. In addition, it might be convenient to continue evaluating the development, growth and competitiveness of SMEs over time with longitudinal and causal studies.

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The Growth of Small Businesses in Aguascalientes Resulting from Export Activities and Local Public Policies

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Abstract

The paper analyzes the impact created by the manufacturing industry on employment in Aguascalientes since the manufacturing sector is the most important one in this state. It is necessary to evaluate this relation because international trade is inserted in the Global Value Chains (GVC) which perform the division of tasks in response to the spatial fragmentation of the production process in order to reduce costs and benefit from the trade liberalization policies. In the document, the multiplier of the employment of the manufacturing sector was calculated regarding other non-exporting local economic sectors, the Model of the Export Base was used by adding information on employment and employment statistics from 2014, 2015, 2016 and 2017 in Aguascalientes and Mexico. The results show that the increase in export activities has a positive impact on non-export activities (including small business). The multipliers recorded 14.94, 14.02, 13.95 and 13.12 in the study years, presenting the number of additional jobs in the state that were generated by hiring an additional worker in the export sector. It also shows the relevance of the

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relation between public policies that promote exports and the attraction of investment to generate economic growth, entrepreneurship and regional development.

Keywords: *Economic growth, employment, exports, entrepreneurship.*

Introduction

International trade is considered a transcendental factor for development because it creates interconnections among the productive sectors of the countries that exchange merchandise. International trade promotes the internationalization of capital by establishing companies producing goods and services in other countries through foreign direct investment. This situation generates surpluses in local incomes through wages which increase the income of the people and consequently the social welfare. For that reason, citizens increase their consumption that in turn increases the demand and the level of local production of non-exporting activities.

In the last decades, international trade has been articulated in the Global Value Chains (GVC) that carry out the geographical fragmentation of production processes, fostering the international division of labor in order to reduce international transport costs by taking advantage of the advances of Information and Communication Technologies as well as trade liberalization policies. Global value chains are regional and are concentrated in three groups of countries: North America (with the United States as leader and with participation of Mexico), the European Union and Asia. These are considered the three large factories that link the different countries mainly by providing intermediate goods in these large value chains and generally the benefits of their commercial interrelationship are subject to the link of the value chain in which they are inserted.

Latin American countries are commonly inserted in the initial links of the value chain as suppliers of inputs. Aguascalientes and several regions of Mexico are in the assembly of final goods with little added value. For these reasons, the Global Value Chain is important in the economic analysis because it means to know the public policies that can foster the international trade of a country taking advantage of the strengths of its regions. From a conceptual and methodological perspective, this research uses the model of the export base because it may help to know the impact of the economic growth derived from the export activities through the calculation of the employment multiplier and its relation with the public policies oriented to promote the employment by export support and foreign investment. Employment in the state of Aguascalientes increased significantly as a result of the growth of the manufacturing sector that is the trigger for local economic growth. Its leadership stems from the automobile industry of the company NISSAN and its subsidiaries which are installed and are benefited by public policies to attract investment in this state.

The model of the export base calculates the employment multiplier created in the local economy that presents the increase in employment

in the non-export sector derived from the increase in employment in the export sector. The variable of the investigation is the employment produced in the automotive industry at state and national levels which are Aguascalientes and Mexico, respectively. The hypothesis of the research is the effectiveness of public policies that promote local economic growth, increase the employment of the export sector and create a multiplier effect of employment in the non-export sector. The dependent variable is the increase in employment in the export sector and the multiplier effect in the non-export sector; the independent variable is the effectiveness of public policies that promote local economic growth.

The paper shows the fundamentals of public policies contextualized with the public policies implemented in Aguascalientes that are presented in the Sexennial Plan of the State Government (SPSG) 2010-2016. The problems and alternatives of action of the automotive sector are highlighted. The results show that the automotive industry has generated multiplier effects in the non-exporting local economic activity of the state of Aguascalientes, generating a significant impact on the creation of jobs. It is suggested that further research should analyze aspects of the quality of jobs generated in the manufacturing industry and the limitations of participation in a link in the value chain with a final goods assembly function that generates low added value in the local economy.

Theoretical Framework

The background of international trade shows a raise in trade relations between nations which are derived from their local needs. It is necessary to supply the basic goods and services that satisfy the internal demand and the consumption of the localities because sometimes the production of these goods and services is little or non-existent. Therefore, globalization becomes important in the countries because it is oriented to favor the flow of goods, services and capital that the economies need to strengthen their countries. The perspectives of nations are to increase the welfare of the citizen because they have possibilities to increase the consumption of better quality and lower price products. Globalization has meant liberalizing and universalizing commodities and this situation has changed the local reference patterns (Valdés, 2015).

Other authors consider the reasons why the exporting companies have to develop their activity (Blyde, 2014). Crick, Bradshaw and Chaundhry (2002) take into consideration the relation of the exporting tendency of the companies with the international changes. CEPAL (2015) considers essential the knowledge of the elements by which companies contemplate the necessity to internationalize and export. The results obtained by these authors show that globalization is the accumulation of wealth generated by monetary flows via wages and foreign direct investment which are received from other countries of the world by commercializing goods abroad. Thus, production is raised by generating an increase in the local aggregate de-

mand, which allows creating sources of employment and all the industries expand in their labor sector.

Researches on the participation of Latin American countries in the value chains in world trade establish that international trade is being articulated around the Global Value Chains (GVC) which are a geographical fragmentation of the productive processes. This has led to the international division of labor between developed and developing countries, implying the search for new forms of integration and cooperation (SELA, 2012). According to these authors, value chains are grouped in three large blocks: North America (influenced by the United States), Europe (with Germany as its leader) and Asia (highlighting Japan and China). The participation of Latin America and the Caribbean in the international value chains is located in the initial links, participating as supplier of inputs that are used to produce other export goods and services or participating as assemblers of final goods with little incorporation of added value. An example that can illustrate this would be the automotive industry in Mexico.

The value chain includes activities of production of goods and services from the conception of goods to the final delivery, integrating productive plants in many countries (Stezano, 2013) and considering the geographical spaces in many nations (Sydor, 2011). Therefore, the GVC term is defined as the cross-border production chains between two countries, a region or a global network which is called GVC (UNIDO, 2013). The term GVC was proposed in the 1970s in the paper research "Commodity Chains and Global Capitalism" which was published in 1994 by Gary Gereffi and Miguel Korzeniewicz who define the organization as a set of networks intrinsically related to the production of goods and services (OECD, 2014). The GVC considers a large number of activities related to the design, production and commercialization of goods and services (Gereffi, 2005).

According to Gereffi (2001), the objectives of the GVC include industrial reorganization, coordination, governance and power in the chain, and governance is proposed in considering the benefits of governance theory in value chains to create effective policy instruments that increase industry sectors, economic development, job creation and poverty reduction. According to Porter (1986), the global value chain is organized in the ownership of assets that perform the most profitable activities in the industry. These integrate new capital to perform their complementary productive activities that increase efficiency and reduce costs. However, it is essential to establish strategies for the integration and business development.

Sydor (2011) mentions that GVC are part of globalization because goods and services are produced in several countries so that they have direct implications among GVC countries, that is, they have direct foreign direct investment. Elms and Low (2013) consider that governments identify the benefits of being in the GVC, such as employment and economic growth increase, so that friendly public policies are established to attract foreign investment. In addition, foreign direct investment links the economic activities of the nations by studying the elements that benefit the

GVC production in several countries. According to the IP (2013), the relation of production, foreign trade and investments generates a connection among the GVC of the economic activities of the companies.

Therefore, production in several countries is considered as part of the GVC. The value chain considers the division of production in several plants in different countries to consolidate its production process which starts with raw materials and ends with the finished product. Thus, the economic relation among the resources of the regions is encouraged by importing intermediate inputs from other countries to produce the final product and impact the global economy. The interdependence of the countries to contribute with activities of the productive process creates the specialization of the localities strengthening the productive activities that they carry out (IP, 2013). Trade treaties and agreements between countries are important because they allow their economic integration and promote productive integration. The Global Manufacturing Export Value Added (GMEVA) is the value added to the manufacturing activities that relate to the GVC (IP, 2013). According to INEGI (2015), it is the value of the domestic content that is exported in the GVD by the manufacturing activity. As a result of this, there is an increase in the local production of goods that will be part of the final product, these will create new sources of employment in the community and increase wealth via wages improving the welfare of citizens.

Then, non-basic activities in the local economy are important because they foster economic development, according to LEVEN (1985: 572):

“The theory of the economic base holds that production for the local market can only increase if local income increases, and it can grow only if total demand for production increases, so that exogenous change can only occur necessarily in the export sector.”

It is important to analyze the macroeconomic objectives that promote social welfare through economic growth since economic growth allows creating sources of employment. However, the inflationary analysis must be integrated because the increase in consumption increases inflation and it is necessary to analyze the effect in society. Gereffi (2015) considered the conflicts between the inflation model and the export growth. Then, it is necessary to consider the objectives of employment and economic growth in national public policies, their relationship with national monetary policy (Wallerstein, 1988), nations need to review their monetary policy, their employment objectives and economic growth. It is necessary to know the actions of the government in favor of adequate conditions that allow producing social welfare and this takes place when analyzing the effect of the public resources in the government projects.

Considering the background, the conceptual framework proposed to address the relation between the export activity of a country and the generation of employment is centered on the theory of the export base developed by Weiss and Gooding (1968). The exploratory base theory was initially focused on determining regional multipliers for employment in a

model that allows the integration and calculation of the coefficients of this activity by measuring the dimension of the impact on employment.

The model was applied in a study of a small regional economy (Portsmouth, New Hampshire) that had a military shipyard and a non-manufacturing military base. Adding the assumptions that the export sectors show an independence between them and it also shows that the services sector produces direct or indirect support of jobs in the export sectors resulting in the total industrial composition. In addition to this, employment in the export sector is divided into private employment, employment in the shipyard, and total employment (military and civil) at the military base.

The theory considers the following assumptions:

- A. Income needs to be proportional to employment because non-basic income as a proportion of income results in non-basic employment as a proportion of total employment.
- B. It is possible to retain employment and increase incomes in the short term considering the increase in per capita income. Therefore, the increase in income will be a factor of attraction of employees to the region, promoting labor migration by the employment-income relation.
- C. The proportion of exporting employment - total employment is constant. Export employment creates the same proportion of non-core employees so the increase in the number of employees in the export sector raises (jobs and incomes) by the same proportion of non-basic workers.

The limitations of the model were defined as being useful to understand in the short term the impact of exports on the employment and income levels of the studied region (Nourse, 1969). Only one region is considered an exporter; applying the multiplier to an export activity has a large margin of error because it is a median; an industry can import all its intermediate products and buy to local industries so the multiplier applied to an increase of industry “b” can be very large relative to the industry. The model considers only employment information, that is why the analysis of the difference of wages is omitted according to the industry or activity performed (Isard, 1971). Public policies must be linked to the activities of governments that are focused on increasing social welfare (Aguilar, 1992).

According to Dye (2013), the actions carried out by the government and the actions it does not carry out (public policies) are being made from a multidisciplinary orientation (Lasswell, 1971). Its approach begins with the interaction of several disciplinary fields (De León, 1988) by giving a response to interdisciplinary articulation of science as well as creating a division of the social sciences (Aguilar, 2000). The term public policy originates with the proposal made by Harold Lasswell in 1951 and it is named Policy Sciences which means that public policies are actions aimed at solving situations of public interest for a target population (Meny & Thoenig, 1992) creating social control in addressing issues of general interest related to the application

of public resources (De León, 1997). It is the design of an agenda that addresses to the planned and the contemporary contingencies (Subirats, 1989).

In the article “The connection between theory and public policies” by Tamayo (1998), the understanding of economic theories is discussed as a key factor to know the objectives and relevant instruments to establish a development policy. In the theory of the economic base, policy objectives are “(1) the expansion of markets for basic production (exports); and (2) the attraction of new fixed investments in basic sectors” (Tamayo, 1998: 20). Local governments achieve these objectives through direct subsidies to the investor such as tax cuts, free land, and construction of industrial parks, among others. The federal governments add to these direct subsidies other operating subsidies such as wage subsidies and loans below the market interest rate. The Laggard regions are the ones being favored primarily by those federal incentives. The theory of the export base must be aligned with the policies mentioned because they consider the same assumptions for local economic growth (Boschma, 2004).

The effect of public policies on society is decisive in the promotion of social welfare. This is generated through the articulation of government development programs and projects with the integration of citizens. It is necessary to design public policies that promote citizen participation as well as its integration with design and management (Molina & Delgado, 1998). Therefore, the government should encourage actions to promote the growth of local industries that increase employment because by producing employment the situation of workers may improve or worsen over time if the elements considered cannot be controlled by employees such as technological changes, general economic aspects of the sector, and political and social stability (Iglesias, Llorente & Dueñas, 2011).

Materials and Methods

The model of the export base assumes that the regions survive by external demand so that economic growth in each territory is derived from regional export activity. The model represents the interrelations of the regional export sector with the other sectors of the economy and measures this interrelationship through multipliers. The model of the export base states that the generation of economic growth is done by increasing exports which in turn increase production levels by raising the level of employment and local income. In the model, the multipliers measure the growth of other sectors when the export sector grows and quantitative data is generated regarding the interregional input-output technique (Isard, 1971).

The model considers the division between the basic industries and the complementary industries. In this model, the location coefficient is calculated and this location coefficient compares the number of jobs of the same activity in the region with the number of jobs of that activity at the national level. When calculating the coefficient, the regional multiplier is obtained. The regional multiplier shows the capacity to increase jobs in the

region (Polèse, 1998). According to the model, the local economy needs to increase the money flow to grow. The alternative is to increase exports. The growth of a region is presented by increasing the volume of exports outside the country (Isard, 1971).

The Model of the Export Base in the Estimation of Regional Economic Growth

The Model of the Export Base, focused on evaluating regional economic growth, considers similar economic structures. The assumptions for determining export employment are:

1. Equal capital-product ratio in all regions.
2. Equal consumption patterns throughout the country.
3. Product per industry equal in each region.

According to what is mentioned above, export employment is defined when calculating the location coefficient as the base (Bess & Ambargis, 2011):

$$Q_i = (e_i / e_t) / (E_i / E_t) \quad (1)$$

Where:

Q_i = Industry location quotient i

e_i = Local industry employment i

e_t = Total industry employment i

E_i = National industry employment i

E_t = Total national employment i

Therefore, a variant of the location coefficient is proposed by means of the assumption (Rosales, 2006):

$$Q_i = s_i = 1 \quad (2)$$

When analyzing the equation it is known that the sector has enough employment to satisfy domestic demand. Integrating the above equation, the exporting employment through is known:

$$s_i / 1 = s_i = E_i / (E_t * e_t) \quad (3)$$

Taking into account x_i as the employment of the export sector in industry i , then:

$$x_i = e_i - s_i \quad (4)$$

$$x_i = e_i - e_t (E_i / E_t) \quad (5)$$

Thus, total employment is the sum of all individual sectors:

$$x_t = \sum x_i \quad (6)$$

By determining the total employment and the exporting employment, the local multiplier k is obtained. The local multiplier k shows the number of new jobs derived from the increase in employment in the export sector. Thus, it can be known the ratio of total employment to exporter employment obtained in calculating the multiplier. Considering the assumptions of the theory of the export base, $b - i = -(-b + i)$ is defined as the increase in the proportion of local expense (Weiss & Gooding, 1968). Thus, the proportion of export employment to local employment is established. Being the multiplier of the export base (Rosales, 2006):

$$K=1/(1-(b-i)) \quad (7)$$

Simplifying:

$$K=T/B \quad (8)$$

Where:

T= Total employment

B= Export or basic employment

NB= Non-basic employment (serves the local market, small business)

The equation can be expressed as it follows (Moncayo, 2001):

$$\Delta T=(T/B) (\Delta B) \quad (9)$$

The export employment multiplier is defined as it follows (Andrews, 1987):

$$M=(T/B) \quad (10)$$

The information produced by INEGI's National Survey of Occupation and Employment (ENOE) was used as a reliable source at a national level that concentrates the characteristics of the Mexican labor market (INEGI, 2017). The present research used information at state and national levels of total employment and employment in subsector 31-33 (Manufactures).

Results and Discussion

Results

The first result presents that the Aggregate Value of Exports of Global Manufactures in Mexico had a growth of 34% in 2009 and 43% in 2014 (Table 1). According to the data, the most representative branches of this sector are those belonging to the automotive industry because they represented 84.95% of the total manufacturing sector, a situation that shows the relevance of the dynamism of this industry in the generation of jobs,

economic growth and entrepreneurship with the creation and expansion of new enterprises.

Table 1. Export value of global manufacturing by main branches of activity at the national level (in millions of dollars).

Concept	2004		2009		2014	
		%		%		%
Total	571,605.7	100%	585,837.3	100%	996,959.6	100%
Sector 31-33 Manufacture Industries	486,455.0	85.10%	500,629.7	85.46%	846,958.1	84.95%
Sub-sector 336 Manufacture of transport equipment	186,333.2	38.30%	217,989.8	43.54%	528,355.1	62.38%
Branch 3361 Manufacture of cars and trucks	98,319.1	52.77%	135,521.5	62.17%	340,432.2	64.43%
Branch 3362 Manufacture of car bodies and trailers	1,224.8	0.66%	1,406.9	0.65%	1,054.3	0.20%
Branch 3363 Manufacture of car parts	84,358.8	45.27%	79,384.6	36.42%	182,865.5	34.61%
Branch 3364 Manufacture of aerospace equipment	1,029.1	0.552%	1,085.4	0.498%	3,747.5	0.709%
Branch 3365 Manufacture of railway equipment	1,246.5	0.669%	12.6	0.006%	46.4	0.009%
Branch 3366 Manufacture of ships	143.2	0.077%	576.5	0.264%	205.7	0.039%
Branch 3369 Manufacture of other transport equipment	11.8	0.006%	2.3	0.001%	3.4	0.001%

Source: INEGI (2015).

The second result is shown in Table 2, the growth of the gross domestic product from 2004 to 2015 shows that the production of final goods has increased and manufactures represent an important part in their value. They shared in the same period 17% of the total production at national level. Additionally, in Aguascalientes, the sector is even more relevant because in 2004 they represented 26% of state production and in 2015 they had a share of 37%. This shows the importance of the manufacturing sector in the state of Aguascalientes showing that it is an industry with a great dynamism and with great prospects of growth. This industry is highly important in this state because the growth in production creates economic growth which means more jobs, entrepreneurship in the opening of new companies and regional development with the exchange of products and workers from neighboring states to Aguascalientes.

Table 2. Gross domestic product, at market prices (Millions of pesos at current prices, base 2008).

Period	National			Aguascalientes		
	Total	3133	%	Total	3133	%
2004	8690254.32	1514525.05	17%	87453.284	22341.434	26%
2005	9424601.95	1559631.31	17%	94368.618	24118.098	26%
2006	10520792.8	1832578.65	17%	107450.144	29194.766	27%
2007	11399472.2	1905965.39	17%	121725.907	35711.141	29%
2008	12256863.6	2027254.86	17%	127431.784	34784.765	27%
2009	12072541.6	1928311.75	16%	128096.818	33649.763	26%
2010	13266857.9	2199444.88	17%	140853.101	42243.111	30%
2011	14527336.9	2393797.85	16%	150983.802	44696.082	30%
2012	15599270.7	2703787.23	17%	163246.82	48293.717	30%
2013	16078959.8	2715436.31	17%	173226.908	54954.403	32%
2014	17217236.7	2888877.5	17%	198267.131	70324.547	35%
2015	18215756.5	3235822.31	18%	217760.68	81540.015	37%

Source: INEGI (2016).

The third result in the analysis of the importance of the manufacturing industry refers to its contribution to economic growth in the state of Aguascalientes, a fact that promotes dynamism of the sector in this state and is the engine of local growth. The location coefficient presents values greater than one in all the years of study showing that there is a growth in the local industry and in the economic units in the state of Aguascalientes. The values obtained are 1.42 in 2014, 1.45 in 2015, 1.45 in 2016 and 1.46 in 2017 (Table 3), showing that the growth of the manufacturing sector turns into growth in other economic sectors, the creation of new businesses and the expansion of existing ones to meet local needs by fostering entrepreneurship.

The final result refers to the size of the manufacturing sector multiplier in the creation of jobs in the rest of the local industry. The result of the Exports Base Theory Model in the multiplier of export employment in the manufacturing sector in Aguascalientes had 14.94 in 2014, 14.02 in 2015, 13.95 in 2016 and 13.12 in 2017 (Table 3).

This can show that for every employment created in the manufacturing sector the other economic sectors are expanding which increases the number of people employed in other activities of the state of Aguascalientes and the creation of new local companies. The result of 2017 shows that for each new job in the manufacturing sector 13 new jobs were created in the company. Based on this result, the high impact of the manufacturing sector in Aguascalientes on job creation and economic growth is decisive. On the other hand, it is necessary to analyze the quality of jobs promoted in this sector.

Table 3. Multiplier of export employment of Aguascalientes.

Concept		2014		2015		2016		2017	
		%	Jobs	%	Jobs	%	Jobs	%	Jobs
Total	National	49415411	100	7979865	100	50171419	100	51859895	100
	State	502772	100	507468	100	511613	100	541302.00	100
Manufactures	National	7888378	16	1276778	16	8041369	16	8534828	16
	State	113892	23	117419	23	118665	23	130333.00	24
	Qi	1.42		1.45		1.45		1.46	
	Multiplier (T/B)	14.94		14.02		13.95		13.12	

Source: own elaboration with information of INEGI (2017).

Where: $M = T/B$. Where: Q_i = location quotient.

Foreign direct investment in the company shows an increase of 900% from 2003 to 2014 showing the effect of the company NISSAN and its suppliers in the local economy, a situation that generates economic growth, resulting in new companies (INEGI, 2014). In Mexico, there are several automotive companies and this type of companies have a production of 250,000 units per year in Aguascalientes. For this reason, the automotive industry is a leader in Aguascalientes since it promotes the creation of jobs and the creation of new local companies. NISSAN Aguascalientes ranks second out of the five main automotive plants in North America established in Mexico (International Trade, 2014). The company NISSAN Aguascalientes announced the construction of its third plant in which it will invest 2 trillion dollars in the state of Aguascalientes and it will promote its economic growth (International Trade, 2015). The automotive sector is very important in the country because Mexico moved up in the ranking of exports to the fourth place from 2012 to 2014. In the ranking of world production, Mexico moved up a position in 2014 to become the seventh most important manufacturers of vehicles (International Trade, 2014).

Discussion

Job creation has been a permanent aspect in the national agenda as well as in Aguascalientes. The state has shown this interest in the three issues of the Sexennial Plan of Government of the State 2010-2016 that considers the production of jobs as one of its main axes because they are insufficient and the existing ones have low wages.

Considering these plans and actions of government, it is inferred that the state of Aguascalientes has a projection of a great growth in the local employment originated from the opening of the automotive plants and the companies that work in the same chain of added value like suppliers of pieces of the large companies. This chain of value generates an increase in the monetary flows of the local economy because more sources of em-

ployment are opened, new companies are created and the existing ones are expanded, this is generated by the export activity since the cars assembled by NISSAN are sent mainly to the export market. Therefore, it is important to measure employment growth in other sectors that are not related to the automotive sector as the growth of this sector generates employment to supply workers in the sector in addition to the creation of new companies.

By using the export base model, the multiplier effect of employment for a period of time and the impact of the export activity, the Global Added Value Chain of the Automotive Sector in Aguascalientes can be determined. This can support the improvement in the standard of living of society by reducing poverty through the application of government resources in programs that insert more people in the labor field as well as in the detection of business opportunities so that self-employment can be created by fostering entrepreneurship with the opening of new companies. In addition, the state has large amounts of foreign direct investment originating from the automotive industry and because of this situation there is an expansion of the other sectors that supply this industry with goods and services for the production process and for the consumption of its workers.

This situation widens the local revenue base by expanding the domestic market so that new companies are inserted and more workers are integrated into them. The automotive sector and its foreign direct investment generate export products that are traded in other countries and produce an economic income via salaries in the state which shows the effect of export activities. The state has created an infrastructure for companies by highlighting the creation of industrial parks that attract foreign direct investment and installing companies in them. It is relevant to reflect on the diversification of productive activities in other economic sectors in the state because the rest of the economic activities are neglected to support government resources only to one sector which creates a dependence on it.

Conclusions

According to the results of the research, the employment multiplier effect of the manufacturing sector in Aguascalientes has a positive impact on the rest of the local economy, while the location coefficient of this sector shows its capacity for growth. There is a relation between the Global Value Chains with the public policies established in Aguascalientes to promote local exports through foreign investment in the automotive industry. State economic growth and foreign direct investment in the automotive industry promote the creation of new local businesses and their expansion by creating suitable conditions for entrepreneurship in the state of non-exporting companies. It is important to note that the automotive industry in Mexico is a link in the Global Value Chain that produces low added value as final goods assemblers. This situation can block the integration with local industries and reduce the quality of employment. Therefore, it can create few benefits in the entrepreneurship of national manufacturing companies.

This implies a redesign of public policies that promote employment in the state, considering the need to promote other sectors that can be linked to the international value chains and have a greater potential to generate added value in order to have a greater impact in the well-being of the local population and the fact that the manufacturing companies can be integrated with foreign companies promoting entrepreneurship projects.

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Chapter 3

Motivation for Hospitality Entrepreneurship: Hostels in San Luis Potosí

Gabriela Álvarez Alemán¹

Abstract

Entrepreneurship is considered as a legitimate option of income. The study of this tendency has become more important in the last decades due to the amount of people involved and its impact in global economy. This phenomenon is studied from diverse approaches. Among them, the reason for getting involved in such activity, that is to say, the motivation, is one of the most studied topics. This paper explores the motivation of becoming an entrepreneur in the hospitality sector of owners of establishments in San Luis Potosí City. This study uses qualitative methods to explore and describe the reasons of creating an accommodation enterprise of seven owners with different backgrounds and characteristics. Interview data was collected, and the findings were grouped based in the model proposed by Chen and Elston (2013): Macro-environmental mix (regarding national and regional conditions), Personal characteristics (regarding the culture or social factors involved) and Major entrepreneurial outcomes (such like job creation or destination development). According to this research, the main reasons for being an entrepreneur in the field of hospitality were the love for the community and the local culture, the possibility of being economically

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independent and the opportunity to serve an unattended market segment.
 Keywords: Entrepreneurship, hostel, motivation

Introduction

Nowadays, entrepreneurship is considered as a legitimate option of income, as well as getting traditional jobs as employees in large companies or in governmental institutions. The uncertainty in corporate careers (Venkataraman, 1997), among other reasons, have created a large number of people willing to learn more about this topic. The study of this tendency has become more important in the last decades due to the amount of people involved and therefore, its impact in global economy. According to Shane and Venkataraman (2007) the reasons for studying this topic are: entrepreneurship is a mechanism to convert technical information into products and services; it helps to mitigate the inefficiencies in an economy; and it drives the change process within a society. Therefore, it is not surprising that the number of published articles regarding this topic has increased in the last years: in 2011, around 1k articles were published, but in 2016 the number exceeded 3k (Web of Science, 2017). In addition, the OCDE has monitored since 2006 the entrepreneurial activity from official government statistical sources, since entrepreneurship is conceived as “important determinant for achieving sustainable and inclusive growth, and has significant potential for creating further jobs beyond self-employment” (OECD, 2016:24).

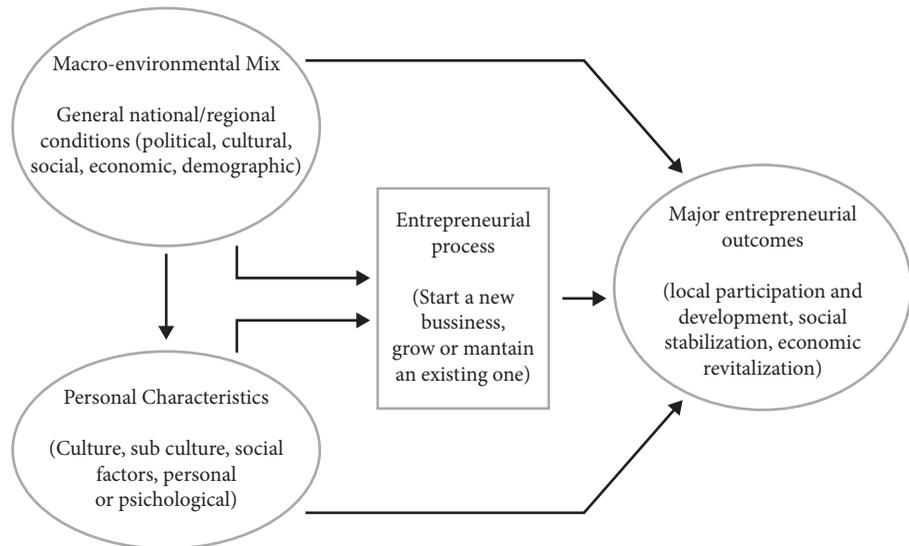
In the other hand, the tourism is a sector that attracts the attention of many people, researchers and public servers, due to its economic impact. According to the Mexico Ministry of Tourism, tourism involves those activities carried out by persons during their travels and stays in places other than their daily environment, for a consecutive period of less than one year, with reasons not related to the exercise of a remunerated activity, in the place visited (Secretaría de Turismo, 2015). It is an important source of income for global economy: The World Tourism Organization international tourism revenues from destinations around the world have risen “from 2 billion USD in 1950 to 104 billion in 1980, 495 billion in 2000 and 1.260 billion in 2015” (2016:2). Many researchers have wrote about entrepreneurship in the tourist sector. Ball (2005) explores the importance of entrepreneurship to the tourism and hospitality industries, Chell (1985) writes about the entrepreneurial personality; Zhou, Chan and Song (2017) explore the entrepreneurial mobility in tourism development; others focuses on the usage of on-line platforms and the challenges and benefits they represent for small hotels (Raguseo, Neirotti, & Paolucci, 2017).

Regarding the motivation for engage to a new business, Benzing, Chu and Kara (2009) discovered that the principal reasons for starting an enterprise are to increase income, to secure independence, and to obtain a job security. Other studies try to show how theoretical body of entrepreneurs’ motivation has developed (Marulanda Valencia, Montoya Restrepo, & Vélez

Restrepo, 2014), while others like Shane et al. (2003) suggest motivations that are less frequently studied, like independence, drive and egoistic passion. In Chen and Elston's model (2013), the findings were grouped as: Macro-environmental mix (regarding national and regional conditions), Personal characteristics (regarding the culture or social factors involved) and Major entrepreneurial outcomes (like job creation or destination development).

This paper explores the motivation of becoming an entrepreneur in the hospitality sector of owners of establishments in San Luis Potosí City. This study uses qualitative research methods to explore and describe the reasons of funding an accommodation enterprise of seven owners with different backgrounds and characteristics. Interview data was collected, and the findings were grouped based in the model proposed by Chen and Elston (2013): The classification of the Critical factors influencing entrepreneurial behavior, can be seen in Illustration 1.1.

Illustration 1. Critical factors influencing entrepreneurial behavior (simplified).



Source: Chen and Elston (2013).

Macro-environmental Mix. In principle, a person decides to undertake a project, company or business, to meet a need. Some can pursue financial gain, or autonomy. Others are lifestyle-oriented owners, and their main goal is to achieve a good lifestyle. Many of these factors depends of the demographic mix and the social environment.

Personal Characteristics. The personality of the entrepreneur, his sub-cultures like regional or familiar. The education and previous experiences can influence a person and his reasons for undertake.

Entrepreneurial concept. The previous experience in the field of business, as well as the status of the enterprise: new, growing, in recovery.

Major entrepreneurial outcomes. The core goal of the enterprise like empowerment of a minority, social and economic stabilization, job creation.

These factors will help to understand the influence on the entrepreneurial behavior of the hostel owners.

Methodology

From May 2017 to July 2017, seven hostels and Bed and Breakfast were visited. These are the only business in San Luis Potosí City that can be considered as hostels or Bed and Breakfast. The principal characteristic pursued was that it had to be a Micro or Small Enterprise (It means, with no more than 50 employees, (INEGI, 2014)), and that they should depart from the concept of a traditional hotel or an assistance home. Nursing homes and day care centers were not included either. Semi-structured interviews were conducted in their installations, with an approximate duration of 50 minutes each. Each owner or employee was asked for their authorization to include the name of the establishment and their own in this research. Those interviews were transcribed and analyzed using the software NVivo. Hostels basic information is presented in Table 1.

Table 1. Hostels and Bend and Breakfasts in San Luis Potosí City.

Name	Concept	Clients	Owner Profession	Operation time
Hostel Montalvo	Hostel	Backpackers	Lawyer	2 years
Casa Catalina	Bed and Breakfast	Business men	Finance	1 year
Casa Goo B&B	Bed and Breakfast	Business men	Administration of Tourism Enterprises	10 months
Buenas Vibras House	Hostel y house of assistance	Backpackers	Anthropologist	8 months
Eco Hostel Hikuri	Hostel	Backpackers	Traveler	3 years
Hostel del Carmen	Hostel	Tourists, Families	Communicologist	4 months

Source: Information compiled by the author.

All the interviews were conducted in Spanish, but the transcription were translate them as faithfully as possible, in order to provide a real testimony. Based on Chen and Elston's model (2013) a chain of tables were created in which the responses of the interviewees are concentrated.

Results

The results will be displayed as follows: A brief description of each enterprise will be shared. Then, all the reasons provided by the interviewed will be organized using four different tables, corresponding to each of 4 critical factors influenced entrepreneurial behavior (used and created before by Chen & Elston, 2013).

Enterprises

Hostel Montalvo

His owner, Mr. Montalvo, is a lawyer that possess a vast knowledge of San Luis Potosí, its main tourist attractions and its history. Together with his brothers, he created the Tour Operator “Montalvo”, six years ago. They create and operate tours within San Luis Potosí territory, and close Mexican states. On 2015, they opened the hostel Montalvo, in order to offer a full service to their clients, who are usually foreigners.

Casa Catalina

This enterprise was born on 2016, and since then, a large amount of business men, couples and tourist (and their pets) have spent nights in there. The owner’s family has a large business tradition and owns a very popular Mexican restaurant. The manager focuses on customer service and personal attention. Nowadays, it is expanding.

Casa Goo B&B

This Bed and Breakfast was the only one whose owner has studies in administration of tourist enterprises. The owner attracts all her customers through online platform, such as business men, teachers, students or conference attendants. This B&B opened on October 2016.

Buenas Vibras House

Their owners are interested not only in providing temporary accommodation, but in spreading local culture. One of them is a painter and the other is archeologist. They also have tenants staying in their own mini apartments, apart from the guests of the hostel. They support single mothers with different dynamics, since one of them is a single mother herself. It opened on January 2017.

Eco Hostel Hikuri

Its owner is Italian, and she comes from a business family that shares her love for traveling. This hostel provides cheap accommodation, bicycle rental and lockers. All the furniture is made with recycled materials and is pet friendly. This hostel opened on 2014.

Hostel del Carmen

This hostel is the newest, and is one of the biggest. This is also a family business, administered by the son-in-law and the owner’s daughter. It is located at the heart of the historic center and therefore, many people passing by can see their advertisement. This is how they attract most of their customers. The manager studied communication sciences, and has experience working at TV stations. This hostel opened on April 2017.

Corazón de Xoconostle

This hostel is the most popular of them all. All the other owners know Corazón and have a very good impression of their service. Recently, they have incorporated tours to their services: they go to Altiplano zone almost every month. The owners are constantly creating new alliances and serve as a role model for their competence.

Motivation

The first dimension is the Macro-environmental Mix, divided in three categories: Government, economic environment and technology. We present the testimonies in Table 2.

Table 2. Macro-environmental Mix.

Macro-environmental Mix	
<p>Government: The relationship between the hostel and the government. Some are good experiences, but others are not.</p>	<p>Casa Goo B&B: “No one, no institution has ever supported this project. I have achieved everything by my own means. Being honest, the less I can get involved with the government, the better, since I do not like informal people”.</p>
	<p>Eco Hostel Hikuri: “we get along very well with cultural institutions. We like to support and promote culture. We have alliances with institutions that promote culture as the center of the arts, the secretary of culture, the mask museum, the Rino theater company. They gradually have been approaching us”.</p>
	<p>Hostel del Carmen: “We work hand in hand with the State Government. We invite our guests to approach to the Tourism Secretariat. We want our guests to explore San Luis Potosí, which is why we have brochures and photos. We also work with the municipal government of Santa María del Río and Soledad de Graciano Sánchez. They also provided us with information about events such as the Enchilada fair, and so we kept people informed and entertained”.</p>
<p>Economic environment: Reasons motivated by economic situation</p>	<p>Eco Hostel Hikuri: “In a country like Mexico, where the minimum wage is very low, if you go to work for someone else you do not have enough money. It’s very little what you get, so doing your own business can give you economic independence”.</p>
	<p>Hostel Montalvo: “When I returned to Mexico, I saw that the economic issue. Looking for work, I realized that there were not many options with good salary. I came from the United States and the difference in wages is very marked. For that reason, my brother and I decided to open the tour operator”.</p>
<p>Technology: The uses of technology that improve the management of the hostels</p>	<p>Buenas Vibras House: “We have wanted to register in more networks such as Air B & B, but we have not had the opportunity. Booking has worked quite well, we have the application and it let us know who is coming, when they will come, at what time, how many people. They only charge us a commission”.</p>
	<p>Casa Catalina: “We have an account on Expedia and Booking; by these means the clients contact us a lot. We also have our own website.”</p> <p>Eco Hostel Hikuri: “Our customers can book directly online at booking.com or hostel world. We have good comments. They can also find us by Facebook, trip advisor and google. We are also creating a system that controls the availability of hostels. This system will improve the management of the bedrooms: how many beds the room has and how many are occupied, how many have just vacated, which ones are free and who is in each room”.</p>

Source: Own Elaboration from the data collected by the author.

The second dimension is Personal Characteristics, divided in three categories: Previous experience, personality, and desired life style. We present the testimonies in Table 3.

Table 3. Personal Characteristics.

Personal Characteristics	
<p>Previous experience: Some had experiences that aroused the desire of opening a hostel, while others had no prior experience to guide them.</p>	<p>Casa Goo B&B: “I studied hotel management in tourism business. I lived in Playa del Carmen, where I met the concept. First, they offered me a job at a hostel, and then they offered me a job at a B&B. I really liked the dynamics, and the treatment that is given to the guests.”</p>
	<p>Corazón de Xoconostle: “All the experiences we have had in our former jobs help us shape the project. We have different profiles, so we complement each other. My experience as a professional project manager and quality manager in a hospital has helped us a lot.”</p>
	<p>Hostel del Carmen: “I do not know the tourism sector, since I studied communication sciences. I worked 10 years in television and I bring a lot of the roll of social networks. I have created Facebook and Twitter accounts to attract more customers”.</p>
<p>Personality: Some personality traits and personal values that encourages them to make decisions and take action.</p>	<p>Buenas Vibras House: “I love sharing and I have always been very sociable. I have good public relations, which are all contacts I have made. We have invited friends who are DJs, others are painters, and others give salsa classes”.</p>
	<p>Casa Goo B&B: “I am very organized. I have written down all my fixed expenses: There are payments that I make every two months, there are payments that I make every month as the rent. First I pay the rent, and then I can focus on other expenses”.</p>
<p>Desired life style: Things the owners want to incorporate into their daily life to increase their quality of life</p>	<p>Buenas Vibras House: “I love that people come from other places to share their experiences. That inspires and motivates me and makes me think “if they can, why not me?” We made this project for our children, to give them time. They can interact with all the cultural diversity that we offer, too”.</p>
	<p>Eco Hostel Hikuri: “At the hostel you do have to work, but the activities are not so difficult. As long as each one carries out their activities, it can become very calm. (...) I really like the atmosphere of my hostel. I wake up in the morning and gladly come to work. I think it’s one of the best sensations”.</p>

Source: Own Elaboration from the data collected by the author.

The third dimension is Entrepreneurial Process, divided in three categories: Starting a New Enterprise, Grow an existing enterprise, and Continuous Learning. We present the testimonies in Table 4.

Table 4. Entrepreneurial Process.

Entrepreneurial Process	
<p>Continuous Learning: Learning opportunities that arise in everyday life</p>	<p>Hostal del Carmen: “Sometimes a single person must stay to attend the hostel. Therefore, you have to learn to deal with the difficulties that you find. They themselves must learn to solve the limitations that arise. We all make mistakes, and that’s how we learn”.</p> <p>Hostal Montalvo: “We are always learning something new. For example, when we participate in Tianguis Turístico, we travel to the event, but we also try to learn from the companies in which we are staying. We make ourselves known, and also learn good practices from other sites, to incorporate them into our company.”</p>
<p>Starting a new enterprise: Difficulties and learning when starting a new business</p>	<p>Buenas Vibras House: “The building that we rented to install the hostel was for 10 years an office. It has been a challenge to adapt it to work for residential use. We had to remove thick layers of earth, since two years was uninhabited. But I would not change it, I like the way it looks”.</p> <p>Casa Goo B&B: “I love having my own B & B, I worked one time at one and I liked it. I can work at my own pace and follow my own schedule. Although I have to be here most of the day, it is not difficult for me. For me the most important thing has been customer service. I do not know why, but opening the business seemed very simple: I knew what I had to do, and I did. The transactions with Hacienda were the slowest. I hired an accountant and I had no problems of any kind.”</p> <p>Eco Hostal Hikuri: “I personally do my job very happily because it is something that I really like. It is much better than going to work in a company that pays you very little, where you have to meet the established schedules and follow their rules. At first we did not do well because the investment was very high and there was no profit, but it is something that you also have to consider when you open a business.”</p>
<p>Growing an existing Business: Difficulties and learning when growing an existing business</p>	<p>Corazón de Xoconostle: “When you start to formalize your enterprise and you start to organize it, you are in a process of growth. Every day you must control all processes; this is something vital to be able to offer a quality service. As there are positive comments, there are also negative ones. These are the best, because they represent the direct information with the client that urges you, under your needs and expectations, to improve your service. These observations we put into the process of quality improvement and try to improve step by step”.</p> <p>Hostel Montalvo: “Our tour operator has six years in the market. We have transportation services and travel agency to serve the people who want to know the Huasteca or the magic villages, Xilitla and Real de Catorce. Creating the hostel, we have tourists to whom we can offer all our tours. With the hostel, we completed the service, since it was the only thing we lacked to give a full service.”</p>

Source: Own Elaboration from the data collected by the author.

The fourth dimension is Major entrepreneurial outcomes, divided in four categories: Alliances between hostels, Serving an unattended market segment, Job Creation, and Tourist destination development. We present the testimonies in Table 5.

Table 5. Major entrepreneurial outcomes.

Major entrepreneurial outcomes	
	Eco Hostel Hikuri: “We are in contact with the other hostels. When we are full, we send people to them or if they are full, they send us people. This has happened before with Xoconostle and with Montalvo. I gladly give them other hostel references. Of course, the person should be informed about the prices and location, so that he decides where he wants to go”.
Alliances between hostels: The communication between them as a market strategy	Hostel del Carmen: “We like to work hand in hand with the other hostels. When they are full or if their clients look for something different, they send me people. In the same way, if you come with people who ask us for a tour, or look for something different, we invite you to go with some other hostel. It all depends on people’s needs. It is about working hand in hand and encouraging tourists to stay and see the other side of San Luis Potosí”.
	Hostel Montalvo: “We know the competition well. In fact, we support each other. When they talk to us and ask, “Do you have a place?” Although there is no communication or generalized support, we do know each other and we try to help as much as possible.”
Serving an unattended market segment: There are not many options for accommodation with personalized, warm and affordable service	Casa Catalina: It is all about the guest feeling at home. When the guest arrives, we give him the key to his room and the key to the house. He can come in and out whenever you like. We give them a lot of confidence. Here you have the freedom to visit the garden, go to the pool or go to the bar. At the bar, we placed a blackboard to record their consumption, and at the end of their stay, they pay me. Normal hotels do not do that.”
	Corazón de Xoconostle: “We saw a need, since there was not as much offer of lodging spaces as this one. From the reception, the customer can feel the warmth of the recipient. He is not a cold person, but a friend. Our deal with the guest is always like this. We want to inspire them with confidence; we want to get along with them. We do not want to be like hotels where the guest receive a cold treat: you check in and you go straight to your room. There is no contact between staff and guests”.
Job Creation: Not only for self-employment, but to create jobs for others	Casa Catalina: “Here work five people: the cook, who does the toilet, the gardener, the manager and the owner. Breakfast is served here, paying for your room, but not lunch or dinner”.
	Casa Goo B&B: “I am the owner, and I have two employees who perform the cleaning from Thursday to Sunday”.
	Eco Hostel Hikuri: “We are 2 members and as support we have a boy who did his social service with us and stayed to work. There’s another guy who volunteers and lives here for work. And two other guys working on the night shift”.

Continuation of table 5

Major entrepreneurial outcomes	
<p>Tourist destination development: Creating better conditions for tourist to come and sharing the wealth of their land</p>	<p>Buenas Vibras House: “We have come to hear that people say that in San Luis Potosí there is nothing to do. However, if you download the Inform or the Guiarte, you will realize that there is always something. If there is no exhibition of cinema, theater or opera, there is a dance festival, among others. The plan is to attract national and international tourism”.</p> <p>Eco Hostal Hikuri: “I especially like the city center, and as I realized that there were not many hostels here, I thought there was a chance that it would thrive. For example, if you go to Tulu there are more than 50 hostels. Since here we are 3 or 4, there is not much competition. San Luis Potosí is not yet a tourist city, but it is growing. When I started the business there were not many people, because many backpackers do not get here, they stay in the southern part of the country or in Mexico City. If we can grow tourism in this city, more people will come and there will be more work”.</p>

Source: Own Elaboration from the data collected by the author.

Those were the main reasons for opening a hostel in San Luis Potosí City, in their owners’ word.

Conclusion and discussion

At the beginning of the research, in order to know how many hostels operated at San Luis Potosí City, a review of the data provided by the DENUE (National Statistical Directory of Economic Units, a database that gathers all the registered economic units in Mexico), was conducted. Nevertheless, there was no results for hostels: all the information given was from local hotels and large hotel chains. Thus, the way to proceed was online searching. The hostels were found in different ways: some of them were found on Facebook, others on Booking, Trip Advisor, or (though in lower proportion) on their own webpages.

As we could read from their testimonies, the economic environment has been a detonator for their business concerns. They decided to create they own jobs, instead of looking for one, like the traditional mode. The owners pointed out they did not receive any assistance from the government or any banking institution, and their sponsors were mostly their family or friends. In the other hand, they had to figure out how to survive and grow in the market by themselves, sometimes supported only by other hostel owners. As we could read by their testimonies, their love for San Luis Potosí city, the desire to increase the number of tourists and to share with them, are other reasons for creating a hospitality enterprise.

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Chapter 4

Ethical and Legal Effects of Corporate Social Responsibility in Mexican Small Business

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Abstract

The ethical-legal responsibility of enterprise executives and managers is a topic that is becoming increasingly important among researchers and scholars of business and management sciences as well as there are more published investigations in the current literature that discuss and analyze this variable along with social corporate responsibility but from a big-enterprise perspective. There are relatively few published investigations in journals that link both constructs from a perspective related to small and medium-size enterprises. Therefore, the main goal of this empirical research is to analyze and discuss the effects of ethical-legal responsibility in the social corporate responsibility of small and medium-size enterprises by using a sample of 397 enterprises. The results obtained show that the ethical-legal responsibility has positive and significant effects in the level of social corporate responsibility.

Keywords: *Ethical-legal responsibility, corporate social responsibility, SMES.*

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Introduction

For the last decades, the business and management sciences literature has considered that the existing link between ethics and social corporate responsibility is not only widely accepted in the business community or region where the organizations are located but it is also considered as a needed and essential activity (Stodder, 1998). As a result, the ethical behavior of the activities of the social corporate responsibility that enterprises can have is considered as a fundamental action for the development of the society in general since the ethical development and behavior carried out by enterprises, especially small and medium-size enterprises (SMEs), will depend on a high percentage on both decision making and the results of the enterprise itself (Joyner *et al.*, 2002).

Similarly, there is in the literature an extensive debate among researchers and scholars about the conceptualization of the variables of ethics and social responsibility and even more so when these two constructs are focused in SMEs. Thus, in order to be clear in this empirical research, ethics will be defined as what it is correct or incorrect in terms of the conduct and behavior of business (Freeman & Gilbert, 1988; Carroll, 1991). Moreover, DeGeorge (1999) concluded that ethics in business is an area that has not been widely analyzed and discussed in the literature and more specifically in the context of the enterprise's dilemma of what to do and what not to do with its clients in ethical terms concerning, for example, medical, legal and engineering enterprises (Joyner *et al.*, 2002).

In this regard, from the ethical point of view, the uncertainty in the business environment that characterizes this century demands from enterprises the implementation of a higher social responsibility with their community which would imply that the bigger the enterprise influence the higher the social responsibility should be (Long-Zeng *et al.*, 2015). In this trend, Olcese *et al.* (2008) referred to the research carried out by Environments International in twelve European countries in 2000 about corporate social responsibility (CSR). The investigation found that 49% of the people interviewed stated that CSR is the most influential variable in the perception and image of an enterprise; 58% of Europeans considered that a significant group of enterprises do not pay enough attention to CSR; and 25% of them considered that CSR is very important at the moment of getting a product or service.

Additionally, CSR will also be considered as a category of economic, environmental, social, legal, and ethical activities carried out by enterprises and adapted to the standards and expectations of the society (Sethi, 1975; Carroll, 1979; Andrews, 1987). Furthermore, Costin (1999) concluded that CSR can also be considered as part of the basic expectations that the enterprise will carry out in terms of environmental protection, public health and safety which are often closely linked to the leadership produced by the manager and/or owner of SMEs which is why it could be expected that the enterprise that carries out more activities of resource preservation of the existing supplies in the communities where it establishes, the more

community services and significant improvement of its business ethical practices in order to have a higher CSR (Joyner *et al.*, 2002).

Nonetheless, even when there is theoretical and empirical evidence of the close link between ethics in business and CSR as well as the importance of SMES in the economy and society of any country in the world, there are relatively few theoretical and empirical studies that are published in the literature that are focused in the analysis of these two variables at the core of SMES since most investigations have been carried out in big enterprises. Therefore, by following the recommendations of Joyner *et al.* (2002) as well as Long-Zeng *et al.* (2015) of focusing the research paper that relate these two constructs in SMES, the main contribution of this investigation paper is to analyze the effects of ethics on the CSR of SMES in a country with an emerging economy as it is the case of Mexico.

Literature review

CSR became popular among researchers, scholars and professionals of business and management sciences some decades ago. They considered this construct as essential (Margolis & Walsh, 2003; Orlitzky *et al.*, 2003; Porter & Kramer, 2006) and increased the production of theoretical and empirical investigations that analyzed and discussed the importance of CSR at the core of organizations, mostly due to the unreliability and skepticism of enterprises to achieve growth (Porter & Kramer, 2011). A clear example of this are the results obtained from the last survey carried out by the enterprise Gallup which found that only 21% of the people interviewed believe in the honesty and ethics of managers and chief executives of the main enterprises around the world (Gallup Poll, 2014).

In this regard, the recent accusations of sugarcoating numbers and data from highly important enterprises as well as the publication of multiple corruption cases from enterprises in different media have caused that a large amount of clients and consumers mistrust the ethics of business and their CSR (Peattie & Crane, 2005; Delmas & Cuerel-Burbano, 2011). As a result of this, there are several examples of Mexican and foreign enterprises in which different organizations had taken actions on behalf of their employees and society in general; organizations that had a strong CSR placement among their client and consumers but did some business activities that were too suspicious and they could not explain convincingly which made the society lose the reliability in general from ethical and socially responsible enterprises (Mazutis & Slawinski, 2015).

Despite this irony that is present in the current literature, there has been an important increase in the interest among researchers and scholars about CSR in the last decade which consider it as a strategy that enables organizations, especially SMES, to improve their relations with their suppliers and achieve better results (Mazutis & Slawinski, 2015). Similarly, an important amount of CSR investigations in the current literature have been focused in proving not only the different benefits that it provides to

society in general but also that it can be considered as an essential tool so enterprises can support the improvement of the lifestyle quality of employees and workers. In other words, CSR may improve the social environment (Delmas & Cuerel-Burbano, 2011).

On the other hand, researchers, scholars and professionals of business and management sciences have shown relatively little interest in the analysis and discussion of ethics in business and its influence in the CSR of SMES (Payne & Duhon, 1990; Humphreys *et al.*, 1993). Moreover, other investigations have analyzed the attitudes and behavior between corporate enterprises and SMES in terms of CSR. One of these studies is the one by Wilson (1980) who was one of the pioneers in analysis and discussion of CSR between corporate enterprises and SMES. His research analyzed 541 elements but only 17 referred specifically to ethical aspects of enterprises which were related somehow with different CSR activities carried out by organization.

In a similar trend, Chrisman and Fry (1982) compared the CSR activities between SMES and corporate enterprises. They found that SMES have higher probabilities of adopting and implementing activities that lead to a better CSR. Accordingly, Brown and King (1982) identified the main external and internal factors that create a bigger level of contrast in the ethical behavior of CSR of SMES and corporate enterprises. Furthermore, the research carried out by Longenecker, McKinney and Moore (1989) compared the ethical practices that are usually performed by managers of SMES with the ones from managers of corporate enterprises by using a totally subjective scale in which managers answered a series of questions. They found that the ethical practices are very similar between SMES and corporate enterprises managers.

In addition to this, Case (cited by Joyner *et al.*, 2002) performed a survey to the subscribers of *Magazine Inc.* in 1990 in which several business ethical aspects were analyzed. He found several difficulties and dilemmas to measure and interpret correctly the different ethical aspects developed by the managers. Also, Smith and Oakley (1994) analyzed in a detailed way the ethical aspects of SMES managers and found that the size of the community or region where SMES work is an influential factor that determines in a high degree their ethical behavior and the process of decision making of managers as well as other factors such as their age, level of education and the prevailing business environment. Similarly, it was found that the ethical aspects of managers of SMES located in rural areas are more than the ones of managers of enterprises in urban areas.

Moreover, Welsh and Birch (1997) analyzed different tests to determine the existing differences in the ethical orientation between managers of SMES and managers of corporate enterprises. They found that, in general, the perception of decision making from SMES managers is much better than the one from corporate managers in the way that the first ones think they can achieve a higher level of ethical behavior among their workers and employees not only to reach the organization's objectives and goals but also to obtain a higher level in all the activities related to CSR.

As a result of this, an increasing number of researchers and scholars consider that it is necessary to analyze the ethical values of SMEs managers and their relationship with CSR activities (Joyner *et al.*, 2002). Thus, researchers, scholars and professionals of business and management sciences will have to focus their investigations in analyzing the effects of ethics in CSR in order to provide a guide that can obtain the biggest potential of the existing relation between both variables (Joyner *et al.*, 2002). Consequently, such guide will have to consider the link between these two constructs and analyze it historically (Brokaw & Cook, 1992; Haney, 1996; Seglin, 1998a, 1998b). Also, the guide will have to consider a behavior that is appropriate for managers of SMEs and a strong implementation of the ethical aspects in business (Shostack, 1990; Murphy, 1994).

In this regard, the investigations recently published in the literature indicate a high level of importance about the ethical aspects in managers and business from Asia, Europe and the United States (Resick *et al.*, 2011), especially when they are related to CSR activities (Long-Zeng *et al.*, 2015). Therefore, the ethical aspects of managers of enterprises have had positive results in the behavior of managers (Walumbwa & Schaubroeck, 2009), in the autonomy of workers (Piccolo *et al.*, 2010) in their safety (Loi *et al.*, 2012), in the effectiveness of the supervision, in the international justice and in the satisfaction of the supervision (Brown *et al.*, 2005), in the behavior of citizens (Mayer *et al.*, 2009; Liu *et al.*, 2013), and, obviously, with the CSR activities (Joyner *et al.*, 2002; Long-Zeng *et al.*, 2015; Mazutis & Slawinski, 2015).

Despite the fact that the literature has proved the existing link between the ethical aspects of managers and CSR activities, there are few investigations that have provided theoretical and empirical evidence of the positive effects of ethics and CSR, especially when CSR activities are considered as a series of actions and policies that consider the providers' expectations; they are also directed to affect the economic, social and environmental aspects (Aguinis, 2011). Therefore, when SMEs develop high levels of CSR activities, they can create several benefits for enterprises, clients, suppliers and employees, among them and better competitive advantages, higher attractiveness for investors and a higher image and reputation for the organization (Aguinis & Glavas 2012).

Thus, researchers and scholars must prioritize the development of future investigations that link the ethics of managers and CSR activities in order to provide more theoretical and empirical evidence that allows a higher level of analysis and discussion (Waldman *et al.*, 2006) since the ethical aspects of managers of enterprises are directly associated to both the ethics of business and the CSR activities (Brown *et al.*, 2005). In addition to this, some qualitative studies published in the current literature have found that the ethical aspects of executives and managers of organizations are an important indicator of the CSR activities (Yin & Zhang, 2012). This is why the effects of ethics of managers about CSR activities are so positive and significant even when qualitative methods are used for their measurement and analysis (Long-Zeng *et al.*, 2015).

Similarly, there is an increasing amount of enterprises nowadays that are formulating and implementing CSR activities as a business strategy and their ethical values and beliefs definitely have positive and significant effects regarding image and all those activities related to social responsibility (Waldman *et al.*, 2006). Thus, CSR activities will have to be considered as a business strategy that involves all their daily activities so organizations can increase significantly their level of social responsibility in a way that it improves not only the enterprise image but also the level of ethical leadership of executives and managers so they can be considered as honest businessmen by society (Resick *et al.*, 2011).

In this trend of ideas, the ethical aspects of executives and managers of enterprises facilitate the adoption and implementation of social responsibility activities as well as in their ethical values. This argument can be used as an essential element in which the ethical aspects of managers can create positive and significant effects in CSR activities (Long-Zeng *et al.*, 2015). Consequently, if the enterprises that are in the position of increasing significantly their CSR level, especially SMES, then executives and managers will have to create inside their business an organizational culture that promotes ethical values for both employees and workers (Puffer & McCarthy, 2008) since the ethical values of managers and CSR activities of SMES can be considered as a reflection of the companies' cultural organization (Gilberson *et al.*, 2009).

Finally, the issuing of some theoretical and empirical investigations in the current literature can establish that the ethics of executives and managers of enterprises has become an essential function, not only of the ethical values of the organization but also of the CSR culture (Long-Zeng *et al.*, 2015). As a result of this, the literature suggests different ways and variables that have an influence in CSR activities and the ethical aspects are a clear example of it (Grojean *et al.*, 2004) since the ethical responsibility cannot be considered only as an essential value of the organization that mostly determines the success of the results obtained by itself (Brown *et al.*, 2005) and the culture of the creation of CSR activities (Schaubroeck *et al.*, 2012) but mainly a determiner of the level of CSR activities. Therefore, considering the information presented above, at this moment it is possible to establish the following research hypothesis:

H1: The higher implementation of the ethical-legal responsibility of managers, the higher level of CSR of SMES.

Methodology

In order to validate the stated hypothesis proposed, an empirical research was made by taking into consideration small and medium size enterprises in Aguascalientes State (Mexico). Moreover, the procedure used the 2009 directory of the Sistema de Información Empresarial Mexicano (System of Mexican Business Information, or SIEM) as a reference framework. The di-

rectory had a total of 6,662 registered enterprises and the ones considered were only the SMES that had between 5 and 250 workers which produced a final version of the business directory with 1,342 enterprises. Similarly, a questionnaire was applied as a personal interview to managers of a sample of 400 SMES which were selected randomly with a maximum error of $\pm 4.5\%$ and a reliability level of 95%. 397 enterprises sent validated questionnaires with an answer rate of 99%. The interviews with the managers were made from April to June 2010.

Similarly, the CSR was measured through three dimensions: social, environmental and economic which were defined by one-dimensional scales. The social dimension was measured by means of a fifteen-point Likert scale; the environmental dimension was measured by means of a seven-point Likert scale, and the economic dimension was measured by means of a nine-point Likert scale. The three dimensions were adapted from the European Union (2001), Bloom and Gundlach (2001), Bigné *et al.* (2005) as well as Alvarado and Schlesinger (2008). Accordingly, the scale to measure the ethical-legal aspects of enterprises was adapted from Alvarado and Schlesinger (2008) and it was measured by means of a four-item scale. All the items of the three dimensions of CSR and the ethical-legal aspects are built based on a Likert-type scale of five positions from “1 = completely disagree to 5 = completely agree” as limits.

Furthermore, for the evaluation of the reliability and validity of the measurement scales used in this research was evaluated with a Factorial Correspondence Analysis of second order (FCA) by using the method of maximum likelihood with the software EQS 6.1 (Bentler, 2005; Brown, 2006; Byrne, 2006). Thus, the reliability of the scales considered in this empirical research was evaluated with two essential indices: Cronbach's alpha and the Composite Reliability Index (CRI) proposed by Bagozzi and Yi (1988). Additionally, the recommendations made by Chou, Bentler and Satorra (1991) as well as by Hu, Bentler and Kano (1992) were taken into consideration regarding the correction of statistics of the theoretical model when it is considered that the normalcy of data is present as well as the robust statistics proposed by Satorra and Bentler (1988) in order to provide a better statistical adjustment of the data.

The results obtained of the implementation of the FCA of second order are presented in Table 1 and they indicate that the theoretical model of the relation between CSR activities and firm reputation has a good adjustment of data ($S-BX^2 = 358.813$; $df = 184$; $p = 0.000$; $NFI = 0.778$; $NNFI = 0.858$; $CFI = 0.876$; $RMSEA = 0.049$). All the items of the factors related are significant ($p < 0.001$). The size of all the standardized factorial loads are higher than 0.60 (Bagozzi & Yi, 1988), Cronbach's alpha and the CFI have a value higher than 0.70 and the Average Variance Extracted (AVE) has a value higher than 0.50 as it is established by Fornell and Larcker (1981). Therefore, these values indicate that there is enough evidence of reliability and convergent validity which justifies the internal reliability of the two scales used (Nunally & Bernstein, 1994; Hair *et al.*, 1995).

Table 1. Internal consistency and Convergent validity of the theoretical model.

Variable	Indicator	Factorial Loading	Robust t-Value	Cronbach's Alpha	CRI	AVE
Social Responsibility (F1)	RSS11	0.674***	1.000 ^a	0.892	0.893	0.627
	RSS12	0.751***	13.875			
	RSS13	0.824***	11.982			
	RSS14	0.889***	12.692			
	RSS15	0.805***	10.256			
Environmental Responsibility (F2)	RSA3	0.703***	1.000 ^a	0.890	0.891	0.621
	RSA4	0.755***	9.980			
	RSA5	0.819***	10.971			
	RSA6	0.858***	9.108			
	RSA7	0.796***	11.531			
Economic Responsibility (F3)	RSE6	0.659***	1.000 ^a	0.823	0.0824	0.542
	RSE7	0.656***	7.019			
	RSE8	0.776***	10.727			
	RSE9	0.832***	9.007			
Corporate Social Responsibility	F1	0.799***	7.654	0.781	0.782	0.546
	F2	0.757***	7.664			
	F3	0.654***	6.257			
Ethical-Legal Responsibility	REL1	0.687***	1.000 ^a	0.881	0.882	0.519
	REL2	0.804***	8.903			
	REL3	0.794***	9.562			
	REL4	0.659***	10.646			
	REL5	0.762***	8.361			
	REL6	0.640***	9.019			
	REL7	0.677***	6.709			

S-BX² (df = 184) = 358.813; p < 0.000; NFI = 0.778; NNFI = 0.858; CFI = 0.876; RMSEA = 0.049

a = Constrained parameters to such value in the identification process.

*** = p < 0.01.

Regarding the discriminant validity of the theoretical model of the ethical-legal in the social responsibility of SMES, the evidence is provided in two basic ways that can be seen in Table 2. Firstly, there is the *reliability interval test* proposed by Anderson and Gerbing (1988) which establishes

that with an interval of 95% of reliability none of the individual latent elements of the matrix of correlation must have a value of 1.0. Secondly, the *extracted variance test* proposed by Fornell and Larcker (1981) which establishes that the extracted variance between each pair of constructs must be lower than their corresponding IVE. Therefore, based on the results obtained from both tests, it can be concluded that that both measurements provide enough evidence of discriminant validity of the theoretical framework.

Table 2. Discriminant validity of the theoretical model.

Variables	Ethical-Legal Responsibility	Corporate Social Responsibility
Ethical-Legal Responsibility	0.519	0.013
Corporate Social Responsibility	0.081 – 0.149	0.546

Extracted Variance Index (EVI), whereas above the diagonal the variance is presented (squared correlation). Below diagonal, the estimated correlation of factors is presented with 95% confidence interval.

Results

In order to prove the research hypothesis presented in the theoretical model of the ethical-legal effects in the social responsibility of SMES, a model of structural equations was applied with the software EQS 6.1 (Bentler, 2005; Byrne, 2006; Brown, 2006) in which the nomological validity of the theoretical model was examined through the square Chi test which compared the results obtained between the theoretical model and the measurement model. Such results indicate that the differences between both models are not significant which can offer an explanation of the relationships observed among the latent constructs (Anderson & Gerbing, 1988; Hatcher, 1994). Table 3 shows these results in a more detailed way.

Table 3. Structural equation modelling results.

Hypothesis	Structural Relationship	Standardized Coefficient	Robust t-Value
H1: Higher level of Ethical-Legal responsibility, higher level of Corporate Social Responsibility.	Ethical-Legal → C.S.R.	0.629***	6.102

$S-BX^2$ (df = 178) = 251.328; $p < 0.000$; NFI = 0.844; NNFI = 0.938; CFI = 0.948; RMSEA = 0.032

*** = $P < 0.01$.

Table 3 shows the results obtained from the implementation of the structural equations model of second order. Regarding the hypothesis **H1**, the results obtained, $\beta = 0.629$, $p < 0.01$, indicate that the ethical-legal responsibility has significant, positive effects in the social responsibility of SMES. Therefore, it is possible to conclude that the ethical-legal actions carried out by managers and SMES are good indicators of their own corporate social responsibility.

Conclusions and Discussion

Considering the information obtained in this empirical investigation, it is possible to conclude about two fundamental aspects. Firstly, the ethical-legal responsibility of managers of enterprises, especially SMES, can be considered nowadays not only as a business strategy but rather as an unavoidable condition of executives because from this ethical-legal responsibility it is possible to create an image for clients, suppliers and consumers (both current and future) of the organization as well as the products and/or services that are offered which could increase or decrease in a significant way the purchase of products and/or services that enterprises offer and creating with this the attainment or reduction of the income of business.

Secondly, it is also possible to conclude that to the extent that executives and managers of enterprises implement the ethical-legal responsibility in their daily routine (not only as employees and workers but also as individual in the society in general) they will be able to improve significantly their corporate social responsibility activities. On the other hand, if SMES work hard to adopt and implement activities related to corporate social responsibility but the executives and managers do not have an ethical-legal responsibility or the required attitude regarding the actions that they do inside and outside the organization then all the accomplishments to improve their corporate social responsibility will not have the expected results as the enterprise image can be seriously affected by this kind of actions.

Furthermore, these conclusions have a series of implications for managers and executives of SMES as well as the organizations themselves. Thus, managers will have to improve significantly their ethical-legal responsibility before thinking on the adoption and implementation of activities that

lead to improve convincingly the level of corporate social responsibility in SMES. Otherwise, if executives do not improve their attitude and decisions with more ethical-legal responsibility then it will be too complicated for clients, suppliers, consumers and society in general to believe that those enterprises are really committed to the society and because of that they are implementing corporate social responsibility activities which can produce several economic and social benefits for SMES.

Accordingly, all the SMES personnel will have to adopt the ethical-legal value as part of their own organizational culture so all the activities they carry out both inside and outside the organization will have to have a high level of ethical-legal responsibility. Consequently, the organizational culture of SMES will have to undergo the required modifications or adjustments so the ethical-legal responsibility and attitude of managers, executives, employees and workers regard it as an essential value of belonging to the enterprise itself. If SMES make all the personnel to adopt the ethical-legal value as part of their daily activities then they will increase exponentially the possibilities that organizations have to increase their level of social responsibility.

However, if the ethical-legal value is not adopted as a substantial value in the development of the daily activities of the SMES staff, then the corporate social responsibility activities will be seriously damaged because it is possible that the society in general may not identify the SMES that claim to be socially responsible but have executives or managers that do dishonest practices or business that can be considered as unethical. Therefore, executives and managers of SMES have to avoid making business that may be regarded by society in general as unethical or that creates many suspicions of the moral character and reputation of the other enterprise that is making business with, considering that the enterprise wants to improve its level of corporate social responsibility.

In this regard, the ethical-legal responsibility or actions are becoming nowadays in an essential value for those enterprises that are interested in attaining or improving significantly their level of corporate social responsibility as there are several cases in the media of any country, mostly in developing ones or with an emerging country like Mexico, in which enterprises that claim to be socially responsible and have had their image damaged because of the business and actions made by their executives that were not ethical which created doubts with their clients, suppliers, consumers and the society in general if those enterprises are in fact socially responsible.

Additionally, it is necessary to show the main limitations of this empirical research. The first one is related to the use of the scales to measure both the ethical-legal responsibility and the corporate social responsibility of SMES since only one factor was consider for the measurement of the ethical-legal responsibility and three factors (social, environmental and economic) for the measurement of the corporate social responsibility. Further investigations will need to consider other factors to verify the results obtained in this research paper. A second limitation could be the

attainment of information since only qualitative variables were considered for the measurement of the ethical-legal responsibility and the corporate social responsibility. Further researches will need to incorporate quantitative variables in order to verify if similar results are obtained.

A third limitation is that the questionnaire used to obtain the information was applied only to managers and/or owners of SMEs in Aguascalientes State. Consequently, future investigations will have to apply this type of questionnaire to SMEs from other states of Mexico as well as clients and consumers of SMEs to verify the results obtained. A fourth limitation is that the only enterprises used for this research had from 5 to 250 workers. Further investigations will need to consider enterprises with less than five workers which represent slightly over 60% of all the enterprises that exist in Mexico in order to verify the results obtained.

In addition to this, a fifth limitation is that it was assumed that all managers and/or owners of SMEs that were interviewed had a clear idea and knowledge about the ethical-legal responsibility and the corporate social responsibility which is not necessarily true. Similarly, a final limitation may be that a considerable amount of SMEs in Aguascalientes State considered that the information requested was classified as confidential so the data provided by enterprises may not necessarily reflect the reality of the corporate social responsibility that this type of organizations have. Further investigations will have to consider the participation of business committees or associations to avoid as much as possible the falsehood of the information requested

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Impact of Policies to Foster Entrepreneurship Based on Innovation in an Emerging Country: A Study on Business Incubators in Mexico

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Abstract

Through business incubators (BIS) and other intermediates, many countries have implemented policies to foster entrepreneurship based on innovation (PEBI) as one of the keys for economic growth. However, in emerging economies the successful adoption of PEBI is still a challenge. Above public policies, the incentives in these countries mainly promote entrepreneurs whose first goal is self-employment. In Mexico, the National Institute of the Entrepreneur (INADEM) coordinates the public policies to promote entrepreneurship, innovation and creation of competitive micro, small and medium enterprises. Based on the analysis of support channeled through BIS during 2016, the objective of this work is to assess the budget program of INADEM which, in principle, should result in the creation of enterprises and expansion of the entrepreneurial ecosystem. Three hypotheses guided this research: i) the budget line to strengthen the entrepreneurial culture, is not generating a change that leads to the emergence of startups; ii) the budget line to foster innovative projects is effectively encouraging the creation of startups; iii) most of the Mexican BIS favor

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the emergence of traditional businesses, compared to a much smaller proportion of innovative enterprises. To test the hypotheses, 201 assessments were applied to the same number of Mexican BIS. The results reveal that in Mexico the government budget to promote entrepreneurship has not succeeded in generating significant impact on the creation of businesses based on innovation, tending instead only to reinforce the emergence of traditional businesses.

Keywords: *Business incubators, entrepreneurship policies, innovation.*

Introduction

The role of entrepreneurship has recently been the subject of a growing literature. It is broadly recognized that entrepreneurs can make important contribution to economic development by facilitating the relocation of resources from less to more productive uses, by bringing new goods and technologies to markets, opening up new processes and ideas, and commercializing new knowledge (Szirmai, Naudé & Goedhuys, 2011). Given the recognition of the contribution that entrepreneurship can make to the process of economic growth and development of nations, several governments have adopted policies of support and assistance for new companies and entrepreneurs. However, in the emerging economies the optimization of these policies continues to be a challenge since there is a tendency to adopt entrepreneurship as a “self-employment goal”, establishing businesses without an innovative basis, what Evans and Leighton (1989) call “refugee effect”.

There are a number of gaps in our understanding on the intersection of the fields of entrepreneurship and innovation, and the impact of policies to foster entrepreneurship based on innovation, particularly from the perspective of emerging economies. This work aims to make a contribution to the understanding of the impact of these policies in this context. To do that, we have studied the case of Mexican BIS.

The Mexican government has tried to foster the entrepreneurial and innovation culture and recently the National Institute of Entrepreneur (known in Spanish as INADEM) was created and it holds the budget of entrepreneurial and innovative activities, it also qualifies the BIS as intermediate organizations through which the budget is granted to the final beneficiaries or entrepreneurs, due to these facts, this research is focused on Mexican BIS. The aim is to identify the budget line of the INADEM which encourages the strengthening and creation of startups as main goal of the entrepreneurship process through BIS. The research postulates three hypotheses: i) the budget line to foster entrepreneurial culture, is oriented to provide mainly consultancy and has no impact on the emergence of startups; ii) the budget line to foster innovation projects encourage the creation of startups; and iii) currently most of the Mexican BIS serve as consultants and they favor the emergence of traditional business. In order to test the hypotheses, a questionnaire was designed and applied to 201 certified by INADEM BIS.

The main contribution of this research is the study of entrepreneurship in an emerging economy through the budget analysis of the organization in charge of promoting national competitiveness through the creation and strengthening of firms. It also suggests some changes in the policies implemented to activate the Mexican economy through entrepreneurship. The manuscript is organized as follows: This introduction is considered section 1. The next section is a review of the literature about entrepreneurship based on innovation and BIS. Section 3 describes the research methodology. Section 4 reports the results obtained, while the discussion and conclusions are presented in sections 5 and 6 respectively.

Literature review

Entrepreneurship Based on Innovation

Research on entrepreneurship has recently shown an upward trend. However, it is an issue which already appears in writings from the eighteenth century with Richard Cantillon and J. B. Say (Hobday & Perini, 2009). But it is with Schumpeter (1934) that the role of the entrepreneur is incorporated in the analysis of the processes of innovation and economic development. By bonding the concept of innovation and entrepreneurship, it could be said that innovation is closely related to novelties and scientific discoveries, while entrepreneurship is closely related to the environment required to put those discoveries in the market. Entrepreneurship is a dynamic process that concerns the environment and links discoveries and satisfaction of market necessities. After Schumpeter (1934) the entrepreneur has been considered an economic agent who identifies and exploits opportunities within the economic system and he involves endowed existing resources with new wealth-produce capacity (Penrose, 1959; Drucker, 1985; Lumpkin & Dess, 1996; Shane & Venkataraman, 2000).

The economic development through innovation involves a holistic nature linked with entrepreneurship. The academic network of innovation emerged in the 1980s. (Lundvall, 1988, 1992; Freeman, 1987, 2000; Nelson, 1982). The study of innovation as a key factor of economic development has increased relevance (Skuras, Tsegenidi & Tsekouras, 2008). Economic theory has highlighted the important role of innovation for the growth of regions and countries (Wong, Ho & Autio, 2005), even more it is seen as the panacea for competing successfully in today's global marketplace (Karayiannis & Von Zedtwitz, 2005).

According to the OECD, "innovation concerns changes planned in the company activities in order to improve its performance" (OECD, 2013). The types of innovation refer to products, processes, markets and organizational innovations. The difference among innovations on the basis of what is "new" or what is "radical" depends on the extent of the change (Schumpeter, 1934). The prerequisite of any innovation is the generation of new knowledge or alternatively a combination of existing knowledge and ways

of business innovation (Drucker, 1985). Swann (2009) argues that innovations arise from inventions and lead to a process whose purpose is the generation of wealth; he also establishes that there is a difference between innovation and invention, assuming the economic distinction generated: invention is the generation of new ideas that can culminate in patents, for example, but they could not be commercialized, while innovation involves commercial exploitation of such inventions and this leads to the creation of wealth.

Although innovation has been strongly associated with entrepreneurship (Autio *et al.*, 2014), some differences among countries are presented in the results of the application of policies to fostering entrepreneurship. According with (Pierre-André & Molina, 2012; Brunnel, Tiago & Clarysse, 2012) the entrepreneurs reflect the characteristics of the place, time and context at which they develop.

Developing economies have adopted policies from developed economies related to entrepreneurship but developing economies usually implement entrepreneurship driven by subsistence necessities while developed economies execute entrepreneurship driven by development necessities (Evans & Leighton, 1989; Wong, Ho & Autio, 2005). In developing economies entrepreneurship driven by subsistence necessities is related to entrepreneurs who start a non-innovation business and their objective is to obtain resources for satisfying basic needs, this is what (Evans & Leighton, 1989) called the “refuge effect”. On a macroeconomic level, this kind of entrepreneurship causes the emergence of an economic system characterized by informality (Reynolds *et al.*, 1994). Entrepreneurship driven by development necessities is related to developed economies whose main objective is economic growth, and this kind of entrepreneurship is based on innovation (Wong, Ho & Autio, 2005).

Recently in developing economies as well as developed economies, entrepreneurship has been supported by intermediaries that engage successful entrepreneurs (Lee, Park, Yoon & Park, 2009); an example of this are the BIS. Governments around the world have also adopted support innovation policies and assisted high technology startups; it means there is a tendency to support entrepreneurship driven by the development necessity (Wong, Ho & Autio, 2005). The importance of cooperation with other organizations rather than the self-sufficiency of individual agents in the entrepreneurial process has been recognized in innovation systems and it reflects the fact that enterprises in general require network support and eventually that of intermediaries who strengthen the early stages of development as BIS do.

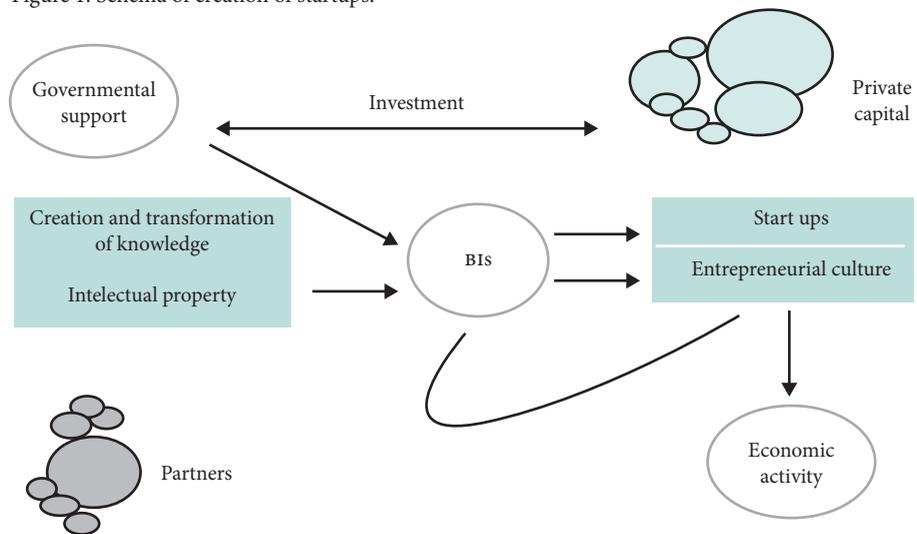
Business Incubators (BIS)

This work focuses on BIS which are considered instruments of public policies for the promotion of innovation and entrepreneurship, even more BIS are strongly considered to be an instrument for the creation of startups by offering technical and management support through internal efforts or

through connections to external cooperative networks (Aernoudt, 2004). The literature establishes a general definition of business incubators as entities which provide small businesses with resources that improve their chances of foundation and survival (Radosevic & Myrzakhmet, 2009; Lee & Osteryoung, 2004; Somsuk & Laosirihongthong, 2014). The typical incubator services are office services, business assistance, access to capital and access to business networks (Grimaldi & Grandi, 2005; Sá & Lee, 2012; Aerts, Matthyssens & Vandenbempt, 2007).

Business incubators are part of the innovation systems where the creation and transformation of knowledge takes place in the interactions among enterprises, universities, researchers, financial institutions and governments (Azevedo & Chiappetta, 2012) as it is shown in figure 1.

Figure 1. Schema of creation of startups.



Source: own elaboration.

The relevance of BIS in the main literature is concerned to the barriers of success where without coordination of resources, networks and management knowledge, entrepreneurs may fail in the market (Sá & Lee, 2012). According to figure 1, this work focuses on the Governmental support programs to generate economic activity through the creation of startups in the innovation system where BIS are intermediate organizations (Howells, 2006) with important contributions in the entrepreneurial based on innovation process.

Although the policies to fostering entrepreneurship based on innovation is a remarkable tendency in the world (Wong, Ho & Autio, 2005), it is still a challenge for developing economies. Due to this fact, this research postulates that Mexican BIS foster entrepreneurship in two issues: a) Entrepreneurial culture and b) Innovative projects. The definition of both issues is also a proposal according to the current Mexican entrepreneurial environment:

- A. *Entrepreneurial culture*: it is related to promote entrepreneurship among the population. Nevertheless, this promotion is oriented to the creation of “basic” enterprises, that is to, enterprises without any technological or scientific specialization required to develop their main activities. Their penetration contributes to the fragmentation of the market and the project is realized by the entrepreneur as a mechanism of survival even more if the entrepreneur does not have a formal job, this schema usually involves members of the family.
- B. *Innovative projects*: it has the perspective to create enterprises on a technological or scientific base, they require specialized human capital, and furthermore their penetration in the market is due to the lack of substitute products. Most of the times, the entrepreneur realizes the project as a mechanism of intellectual growth and professional progress.

In Mexico the BIS obtain financial resources from the INADEM which is a new institution focused on entrepreneurship. Due to this fact, the aim of this work is to identify the budget line which encourages the strengthening and creation of startups as main goal of the entrepreneurship process; to achieve this objective, the methodology postulated in section three was applied.

Methodology

The preliminary stages of this research involved a review of entrepreneurship based on innovation through BIS. In order to identify the budget line which encourage this kind of entrepreneurship in Mexico, the following four stages were developed and they are described below:

1. Identification of the calls of the INADEM suitable for BIS.
2. Proposal of INADEM budget classification.
3. Design and application of the questionnaire.
4. Codify the information for the hypothesis testing.

(1) Identification of the calls of the INADEM suitable for BIS.

The National Entrepreneur Fund abbreviated in Spanish as (FNE) is granted through the INADEM by five categories with the objective to strengthening entrepreneurship in Mexico furthermore to consolidate an innovative, dynamic and competitive economy. Each category involves calls suitable for different actors of the entrepreneurial process; among the five categories, this research focuses on the categories suitable for BIS and for their attended entrepreneurs:

Category II.- Enterprises Development Programs

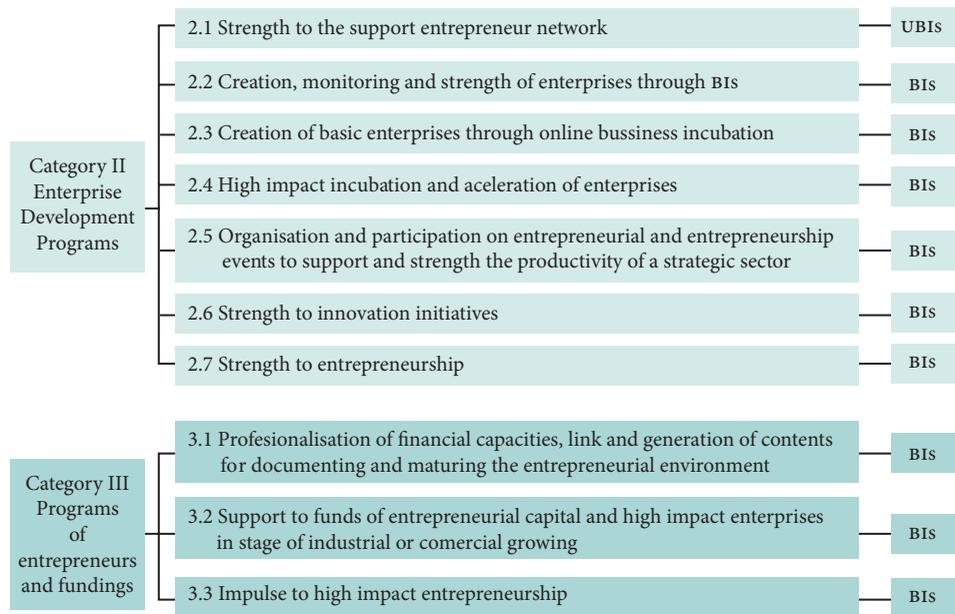
Their objectives are to propitiate innovation, acceleration and incubation of enterprises, to support organization events and to give prizes to impulse the entrepreneurial activities, as well as some other supports for SMES and Mexican entrepreneurs (INADEM, 2016).

Category III.- Programs of Entrepreneurs and Funding’s

Its objectives are proposing enabling mechanisms to the access of funding for SMES and entrepreneurs; fostering financial culture and facilitate instruments of credit to SMES; to engage entrepreneurship of innovative projects or high impact (INADEM, 2016).

Category II involves seven calls and Category III involves three calls showed in figure 2. Each call is celebrated once a year and the requirements as well as the suitable actors are stipulated in the official website of INADEM.

Figure 2. Calls of INADEM suitable for BIS.



Source: Own elaboration on the basis of (INADEM, 2016).

(2) Proposal of INADEM budget classification

Currently the INADEM mixes the categories II and III with traditional and innovative projects as it is showed in figure 2. In order to identify the budget line which encourages the strengthening and creation of startups, this work proposes a classification of the calls into budget for “entrepreneurial culture” and budget for “innovative projects”. The 2016 budget for each call are stipulated in table 1, the amounts are in Mexican millions pesos.

Table 1. INADEM budget classification of categories II and III.

Call	Budget INADEM for entrepreneurial culture	Budget INADEM for innovative projects
2.1 Strength to the support network for entrepreneur	\$ 80.00	
2.2 Creation, monitoring and strengthening of enterprises through BIS	\$ 24.00	
2.3 Creation of basic enterprises through the online bussiness incubation program	\$ 70.00	
2.4 High impact incubation and aceleration of companies		\$ 89.00
2.5 Organization, implementation and participation in business and entrepreneurial events thats support and strengthen the productivity in a strategic sector	\$ 28.00	
2.6 Fostering innovation initiatives		\$ 130.00
2.7 Promoting to entrepreneurship	\$ 85.00	
3.1 Professionalisation of financial capacities, linkage and content generation to document and mature the entrepreneurial ecosystem	\$ 50.00	
3.2 Support to entrepreneurial capital funds and high impact enterprises in the stage of industrial and / or commercial escalation		\$ 300.00
3.3 Impulse to high-impact entrepreneurship		\$ 400.00
Total	\$ 337.00	\$ 919.00

Source: Own elaboration on base of (INADEM, 2016).

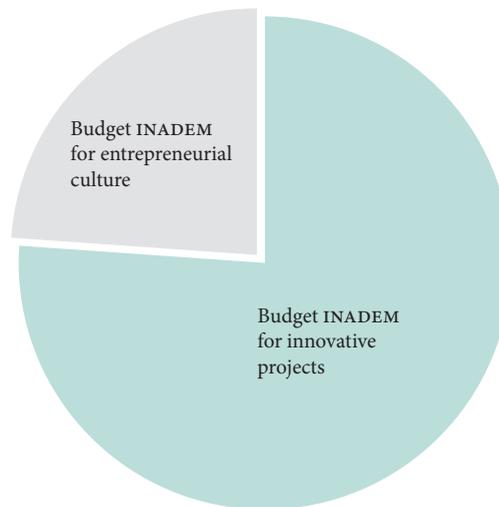
According to the proposed classification in table 1, the budget designated to strengthen the entrepreneurial culture of category II and III represents 27% on the totality of both categories while the budget designated to strengthen innovative projects represents 73%. The total budget of category II is \$506 Mexican million pesos, 43% is designated to innovative projects and the 57% is designated to entrepreneurial culture. The total budget of category III is \$750 Mexican million pesos, 93% is designated to innovative projects and the 7% is designated to entrepreneurial culture (Table 2).

Table 2. Percentage destined by INADEM to entrepreneurial culture and innovative projects in categories II and III.

Category of call	Entrepreneurial culture	Innovative Projects	Total
II	57%	43%	40%
III	7%	93%	60%
Weighed average	27%	73%	100%

Source: own elaboration.

Graphic 1. INADEM budget assignation 2016, category II and III.



Source: Own elaboration.

(3) Design and application of the questionnaire

Once the budget for entrepreneurial culture and the one for innovative projects were identified, a questionnaire of nineteen questions was designed and applied to 201 BIS recognized by INADEM. The application was via e-mail, the index of responses was 23% over the total of the statically sample. The INADEM has a register of 173 traditional BIS and 28 high impact BIS, the questionnaire was the same for both kinds of BIS.

(4) Codify the information for the hypothesis testing.

This research involves three hypothesis which testing is described below:

- i. The budget line to foster entrepreneurial culture only has consultancy effects and it does not have impact in the emergence of startups.

We tested this hypothesis with the analysis of the calls of INADEM; their classification and; the number of graduated enterprises.

- ii. The budget line to foster innovation projects encourage the creation of startups.

In order to test the hypothesis number two, we designed questions related with the number of graduated enterprises, their period of survival as well as the calls of INADEM which they have received support.

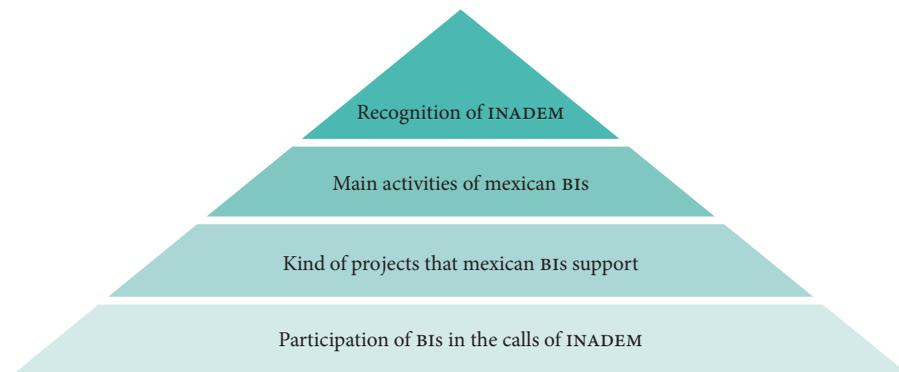
- iii. Currently most of the Mexican BIS serve as consultants and they favor the emergence of traditional business.

We tested this hypothesis with questions related to the number of traditional enterprises emerged from the BIS, the frequency of the activities developed by the BIS, and the selected lines in the participation of the studied calls.

Results

This section reports the main results obtained in a qualitative way, in order to test the hypothesis of the research. The results are identified in four stages as it is showed in figure 3. First, it was important to identify the level of recognition the INADEM has by BIS due to the fact that it is a new institution which granted governmental budget to the entrepreneurs; the next stages allows the testing of the hypotheses through the identification of the main activities that Mexican BIS currently develop; the kind of projects BIS support and the participation of BIS in the studied calls of INADEM.

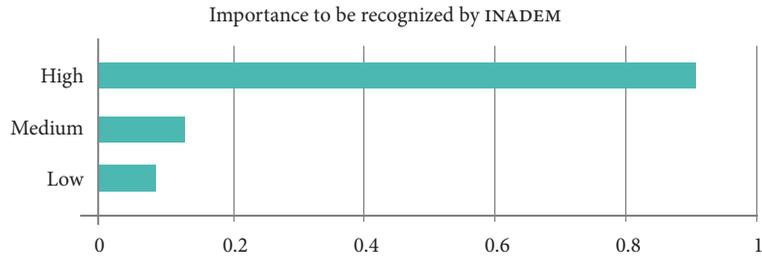
Figure 3. Stages of the obtained results.



Source: Own elaboration.

On the first stage of the results, it could be seen that for the BIS it is important to be recognized by the INADEM, such recognition award status into the entrepreneurial network, furthermore the more than 80% of the respondents feel supported to develop their main activities if they are recognized by INADEM (Graphic 2).

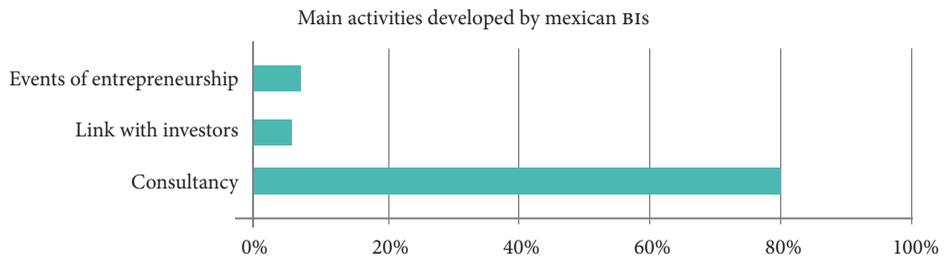
Graphic 2. Importance level of the recognition of INADEM by BIS.



Source: own elaboration.

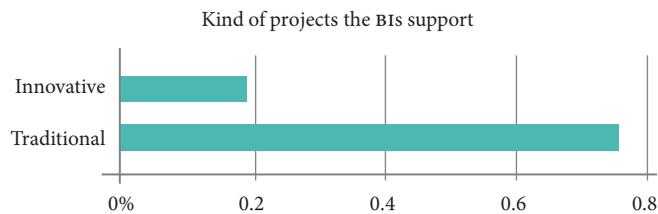
In relation to the main activities that BIS developed more frequently by BIS, consultancy is the most important as shown in Graphic 3. There is a direct relation between the consultancy as the main activity Mexican BIS develop and traditional projects, as the kind of projects they support (Graphic 4).

Graphic 3. Level of activities developed by Mexican BIS.



Source: Own elaboration.

Graphic 4. Kind of projects Mexican BIS support.



Source: Own elaboration.

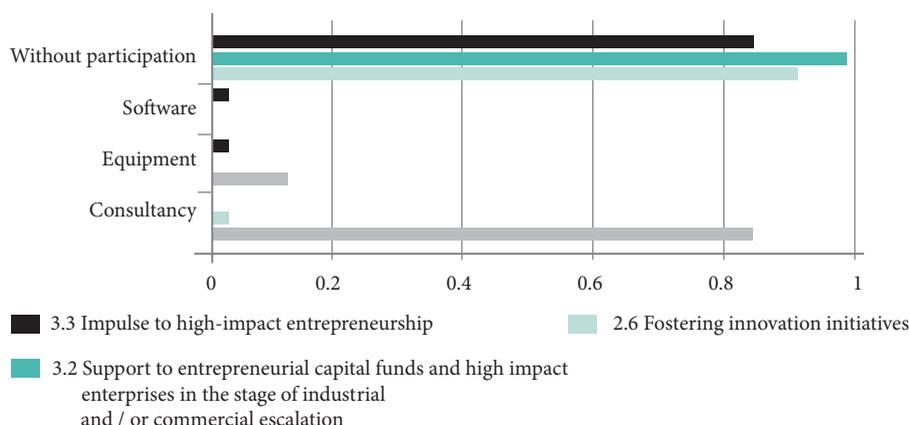
The final stage of the results which is at the same time the base of this research, reveals that among four calls to support innovative projects, the BIS apply for the call 2.4 and they spend the resources in consultancy, referring to calls 2.6, 3.2 and 3.3, they have a high level of no participation for BIS, it is 92%, 100% and 85.72% respectively, it should be noted that the mentioned calls represent the 66% of the total budget of the analyzed categories.

Table 3. Percentage of activities of BIS related with calls of innovative projects.

Call to foster innovative projects	Consultancy	Equipment	Software	Without participation
2.4 High impact incubation and aceleration of companies	85.72%	14.29%		92.86%
2.6 Fostering innovation initiatives	7.14%			100%
3.2 Support to entrepreneurial capital funds and high impact enterprises in the stage of industrial and / or commercial escalation				
3.3 Impulse to high-impact entrepreneurship		7.14%	7.14%	85.71%

Source: Own elaboration.

Graphic 5. Level of activities related with calls of innovative projects.



Source: Own elaboration.

With the obtained results the hypothesis i) and iii) are verified, the budget line to foster entrepreneurial culture has mainly consultancy effects, the 80% of the respondents BIS serve as consultants and 78% of them support traditional projects, so currently the budget line to foster entrepreneurial culture does not have impact in the emergence of innovative startups. The hypothesis ii) was not verified due to the fact that the respondents BIS have almost null participation in the calls that foster innovative projects so the level of investment and the results of those calls is not seen through BIS.

Discussion

Recently the INADEM has been consolidated as the channel through which the entrepreneurial culture is driven in the Mexican economy. Nevertheless, the intermediate organizations as BIS are focused on traditional enterprises. The main literature of BIS in developed economies relate them with innovative projects, then Mexican BIS should engage such projects even more if they have a strong relation with universities and research centers but, above all, the actors of the entrepreneurial process must realize that innovation is been taking as a key factor for enterprise success around the world. According to (Lee, Park, Yoon & Park, 2009; Radas & Bozié, 2009), innovation led the companies to find crucial changes for their success and survival, no matter their size or their environment, enterprises should be innovative, other way without innovation the economic failure is inevitable (Schumpeter, 1934).

The low level of participation of BIS in calls referred to high impact and the roll of consultants they have assumed, do not allow the creation of solid innovative enterprises. The BIS should link the entrepreneurs with private investors, allocating infrastructure, helping in the construction of prototypes, among other activities in order to favor innovative projects, even more if the government is trying to foster the entrepreneurship of high impact. The governmental policies have to be well communicated among the participants of the entrepreneurial environment in order to obtain optimal and tangible results of the budget which represents resources with a high opportunity cost.

Conclusions and recommendations

the implementation of governmental policies in developed economies to foster entrepreneurship based on innovation has been followed by many developing economies. As a contribution in field of entrepreneurship focused in developing economies, this work analysed the budget line of INADEM which encourages the strengthening and creation of startups as the main goal of the entrepreneurship process. The results revealed that the budget destined to promote entrepreneurial culture does not generates tangible effects in the creation of startups. Even when the government has incremented the budget for innovative projects, most of the mexican BIS have not participated in the respective calls. This fact indicates that the Mexican governmental policies to foster entrepreneurship need to be better established for the participants in the entrepreneurial process.

The hyphoteses were partially validated: effectively, como fue planteado en un princip-io, the budget to foster entrepreneurial culture only achieves to promote consulting ser-vices on the part of the BIS oriented towards the creation of traditional business. The other part was not validated because of the low participation of BIS in calls for innova-tive projects. Nevertheless, the latter reveals that creating entrepreneurship based on innovation in Mexico is still a big challenge. We conclude that Mexican BIS are not giving the expected results on the creation of both innovative and

traditional enterprises. This failure can be overcome if governmental policies consistently concentrate in fostering the creation of innovative startups. Furthermore, it is important to establish an indicators system in order to optimize the public budget destined to promote entrepreneurship on the basis of innovation through BIS.

This work is limited to the study of the part of the budget managed by the INADEM to impulse the operation of BIS. Further researches should consider the study of more schemas to create and foster startups, like the one managed by the National Council of Science and Technology (CONACYT), among other institutions.

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The Impact of Corporate Culture on the Protocol of Family Businesses

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Abstract

The Business Culture formed by the set of values; beliefs; behaviors; norms and attitudes that are transmitted by the founder and the owners; have the purpose of maintaining, giving continuity, controlling and directing family businesses; so it is necessary to plan the withdrawal of the patriarchs, to select and prepare their successors; through the Protocol, which is a voluntary written family document or conciliatory instrument of the different interests that have to be agreed in the company. Therefore, this study investigates the potential influence of the Business Culture in the Protocol of family businesses. The data required for this study were obtained through personal interviews using a sample of 330 companies from the metropolitan area of San Luis Potosí. The results obtained show that the Business Culture has a positive impact on the Family Business Protocol.

Keywords: *Business culture, Protocol, family business.*

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Introduction

Accelerated changes and the demands of national and international markets have increased with the advance of globalization, so that family businesses face a complex, dynamic, uncertain and increasingly competitive environment; external conditions that can be a threat to its continuity and permanence in the market. However, González (2010) affirms that a successful family business is the one that has good family relationships, the members are united by a common cause; their perception of the world, their values and aspirations, joined with their way of acting; forge a business culture that manifests itself in its relationship with employees and customers; as well as in the management of administrative, financial and technological aspects (García & Gómez, 2008); so that competition and the struggle to occupy a place in the market, can be an opportunity for the family companies to recognize their skills, to leave the informality, to apply the protocol and the family succession; with the purpose of being more solid and facing future challenges with new strategies (Arenas & Rico, 2014).

In addition to this, Echaiz (2010) defines family businesses as economic organizations with the main objective of producing or marketing goods or services; where the property belongs wholly or in a majority, to a group of persons united by a family bond, usually the descendants of the founder of the same; conditions that allow the administrative and control bodies to be appointed by a family group or a member of the family. Being, the founder who prints or gives a particular seal to the business culture that manifests itself in the different performances of the business (García & Gómez, 2008). That is, some of the positive characteristics of family businesses are derived from a well-integrated family unit, common values and principles can give an insurmountable synergistic force to business work, difficult to find in another type of company; in contrast to some negative features that can generate a variety of problems, the causes of which may be the very close relations between managers who are members of the family, little or no training received by passive shareholders, divergent interests between active shareholders and lack of professionalization, nepotism and the difficulty of attracting the best talent available in the market (Echaiz, 2010).

Therefore, the culture of the family business is transcendent and complex, combining the attributes of the owning family and the same company; in addition, it is necessary to identify the factors that contribute to their subsistence and the influence of family values on business continuity (Garza, Medina, Chein, Jiménez, Ayup, & Díaz, 2011). Because the culture of the family business is the product of beliefs, values and goals integrated in its history and social ties, it is necessary to promote explicit and open cultures that allow to express clear ideas and generate new thoughts and actions, challenging and radical (Hall, Melin & Nordqvist, 2001). With which they develop inimitable strategic intangible assets that explain competitive success, such as reputation, image, employee skills and abilities, language and rituals, ideas and actions that are used to deal with problems (Esparza & García, 2011).

Likewise, Lozano (2000) proposes that some of the tools that may be interrelated and help family businesses resolve or reduce conflict situations are: Family manifest or protocol, strategic planning in family business, planning succession, treatment of the intrafamily relationship; which must take into account factors of high sensitivity that require a great deal of time; on the other hand the implantation of the family assembly and the family council allows discussing family matters related to the company or companies owned by them; the study of the transitions within the family-business system by family matters or by the activities of the company, contribute to position the business properly and project it with force to the future; together with the knowledge of the new trends of the familiar company in the market, for its growth and expansion; as well as analyze and foresee possible strategic alliances or fusions as options of the company for its future.

In sum, generational transitions and the competitive pressures of globalization force family-owned enterprises to adapt to a series of complex problems, such as planning the withdrawal of patriarchs, selecting and preparing their successors, managing conflicts, foster collaboration between an increasingly complicated group of family shareholders, manage the generational dynamics of the company and the family; because an improperly planned succession can to end the company, with only one in four family businesses surviving the second generation, and only one tenth of that reaches the grandchildren; that is, that most family companies face difficulties of their own survival as a corporation after the death or retirement of its founder, making it a crucial phase of the business life cycle and family protocol based on the business culture can be a predictive mechanism for solving such events (Lozano, 2000; González, 2010).

Therefore, the objective of the present work is to analyze if the business culture can influence the protocol, as a means that supports the family companies to solve their conflicts and allows the continuity of the same ones.

Theoretical framework

As a starting point Echaiz (2010), establishes that the family as a social, political and economic organization; it is the natural, elemental and original origin that gives life to family businesses; which exert a professional activity organized preferably with the own work and the members of the family; to offer quality products or services from the deep knowledge of the sector, suppliers and customers; and with a long-term investment perspective; it is therefore necessary to privilege the conditions that favor commitment and dedication to the business, the unity and cohesion of the management team, the long-term investment expectation, deep knowledge of the product and target market, labor stability and more human entrepreneurial cultures, coupled with an important capacity for self-financing and adaptation to market changes; because the importance and presence of family businesses in the world economy is clear.

However, Echaiz (2010) and Lozano (2000) observe that family firms also have weaknesses in involving family conflicts in the company and vice versa; confusing matters of property, work and leadership; acting inconsistently when remunerating family and non-family employees; to promote secrecy; lack of leadership from the second generation; present difficulties when planning the succession; confuse the purpose of the corporate patrimony and the family patrimony; as well as obstacles to the implementation of corrective mechanisms; causing serious problems of business continuity such as disagreements between parents and children, conflicts between siblings, inadequate or non-existent succession, critical states of economic fluidity and limitation of earnings, lack of motivation of family or non-family members, tensions between members and family members, the company does not grow, little commitment of active members in the company, conflicts with unfamiliar partners and inadequate communication.

Lozano (2000) identifies in a particular way that the probable causes in general terms of the above mentioned problems have to do with introducing indiscriminately the values and behaviors familiar to the business environment, as the father interferes too much and openly expresses his distrust of the son's capacity, the son is not listened to at the level he desires, the retired founder continues to intervene, offspring are forced to work in the family business, they put the brothers in competition, they do not prepare or plan the process of succession, there is no family protocol, lack of planning in the operation of the business, relatives or employees are incompetent professionally, they are paid in excess, little freedom to work creatively, lack of investment in recent technologies and updating in administrative processes, disagreements on the destination of profits; consequently all this directly affects the business, impeding its growth, stability, permanence and continuity in the market.

On the other hand, Beraza (2000) defines the culture of family business as the set of values that the founder transmits to his successors; that is to say, that marks in their descendants the values so that they feel like own thing to the company and defend it with force; as well as the love and the sense of commitment to the company, with the purpose of ensuring its continuity in the hands of the family; all in an environment of unity, harmony, dedication, communication and commitment, among the people who compose the company, to take it forward and make it evolve, change and grow; so values such as honesty, credibility, law enforcement, quality and hard work; beliefs; behaviors; norms and attitudes transmitted by the owners, are intended to maintain, give continuity, control and direct the enterprise (Esparza, García & Duréndez, 2010).

Likewise, Lopez and Trujillo (2014), agree that the elements that integrate the culture of family businesses are the principles, values, beliefs and myths spread by the founder of the company from the moment he decides to create it; observing that values in family businesses are a set of principles that guide the behavior of individuals and organizations, whose characteristics are durability, indivisibility, flexibility, dynamism, bipolarity, satisfaction, hierarchy, meaning and significance to the life of people,

transcendence, applicability and is not for what they are, but for what they are worth; coupled with the fundamental beliefs that help to prefer, appreciate and select a particular action; favoring the growth and permanence of family businesses.

Likewise Garza *et al.* (2011) observed that a strong culture of family business is based on values of respect, honesty, understanding, trust, family, uprightness, loyalty, responsibility, punctuality, treatment, fellowship, unity, appreciation, spiritual pride for your company, sense of solidarity with the community, responsiveness in difficult times; which the founder with his example transmits to his descendants; facilitating communication, motivation, cooperation; provoking an increase in the commitment, sense of identity and pride on the part of the members of the family business, familiar and unfamiliar of the different administrative levels; in this way the consistency of their behavior is encouraged, it reduces the ambiguity, gives guidance and security to the subordinates, the goals are fulfilled with good results; conditions that strengthen family businesses in crisis situations, give them continuity and success.

In addition to the above, in the work developed by Esparza and García (2011); it was identified that in the culture of family businesses the owner sees the company as a friendly and dynamic place to work with an enterprising, creative, innovative, flexible; with the ability to take risks, share, commit; individual initiative is encouraged, freedom of thought, teamwork, participation, consensus; is united by loyalty, family tradition, cohesion, morality, adherence to norms; demonstrating the success of companies in the sale of new services, being market leader, customer satisfaction, market presence; prevailing values such as harmony, respect, humility, love, honesty, commitment, trust, spirituality, loyalty, justice, solidarity, transparency, industriousness and responsibility; that is to say that the culture of family businesses is an intangible strategic resource that allows them to obtain competitive advantages, give continuity and stay in the market.

On the other hand, the protocol is defined as a written family document or conciliatory instrument of the different interests that are presented in the company, which clearly states the values and the relationship between family members and their policies; with the purpose of guaranteeing the continuity and succession of the family business; since the protocol is a voluntary agreement fruit of the family consensus, it can favor in the family companies the possible occurrence of conflicts is reduced and if they appear to establish the criteria to treat them; it also contributes to the definition of policies within the development of strategic planning; in addition to establishing and directing the objectives of the family and the company towards joint interests; which may favor maintaining or increasing the affections and the family union, with the purpose of taking care of the preservation of its permanence, its development and giving it continuity in an effective and successful way through the following generations of the familiar company; together with an intrinsic purpose, such as the professionalization of family business in a context of corporate governance

(Arenas & Rico, 2014; Barbeito, Crespo, Martínez & Guillén, 2008; Beraza, 2000; Echaiz, 2010; Lozano, 2000).

In relation to the above, it is necessary to emphasize that the topics to be dealt with in the content of the protocol are key to fulfilling the purpose of the protocol, among them we can mention the mission that will guide family relations and business (Lozano, 2000); the set of goals for the family and the company, the rules of action to be followed in the relations between the family and the company, an agreement of commitment to comply with what is established; policies related to the beliefs and values of family culture and business culture, decision making and governance, economic, corporate, social and family policies; the efforts and sacrifices you are willing to make; opening or restricting the entry of family members; to maintain good relations, resolve conflicts and maintain harmony (Barbeito *et al.*, 2008; Beraza, 2000; Lozano, 2000). It should be noted that the protocol aims to solve a very complex problem, but it avoids attacking its roots (Barbeito *et al.*, 2008), because values such as union and commitment can be progressively transformed into disunion and evasion of commitments (Beraza, 2000); however, although the problems do not disappear, the protocol can achieve a better management of difficult situations and a decrease in the emergence of these (Lozano, 2000).

As can be seen, the culture of family businesses, within a framework of freedom, honor pact, privileging the values of the family and the family relationship; is the cornerstone and the antecedent, that allows the development of each one the different stages that must be considered for the elaboration and development of the protocol; and according to the works carried out by Beraza (2000), Echaiz (2010) and Lozano (2000) are the initial interest that originates from the initiative of one or more members of the family; strategic planning; gather information in different sessions of those directly involved with the family business family and non-family partners, directors and managers; determination of the type of family business and of the legal and tax architecture, which can be adjusted according to the partners or the adopted steering model; defining the scope of the protocol, which identifies the members of the family, affects the protocol at present and in the future; writing the needs and the model of the protocol; commissioning and execution of the protocol; evaluation and follow-up, because family businesses are dynamic, so that the protocol should be reviewed periodically, to be improved according to the evolutions of the environment, the family and the company; in addition to solving situations concerning the agreement and making the adjustments; so the family council must have a vigilant attitude in front of all this and fight for a permanent improvement of the business-family scenario and ensure from the culture of family businesses the continuity and permanence of the business.

González (2010) states that long-lived and successful family businesses are those that have been able to plan and anticipate the factors that endanger the continuity of the company, using temporary mechanisms such as family protocol, where they propose the norms and alternatives to

manage in the best possible way the circumstances that may arise; considering as a starting point the good family relations, the values of excellence, industriousness, initiative, simplicity, austerity; and principles relating to responsible transmission of ownership, commitment and union between family members, power as a service, consider the family business as a community of people.

Garza *et al.* (2011), affirm that in the culture of family businesses, there is an overlap between the two company and family systems, where beliefs, norms of behavior, language, basic assumptions and the values that influence both can be shared favorably; and recognizes the values received from their ancestors, the founder's teachings, the tradition followed by the owner-director, his experience, dedication, loyalty and honesty; manifesting itself in the acceptance of the continuity of the family businesses with their own characteristics and their continuity over time; taking into account that decision-making and capital must remain within the family.

Methodology

The study object of the present work are the micro, small and medium companies; because in our country they are the main engine of the economy; as in Mexico during 2014 there were 4'048,543 companies, classified as follows: 3'952,422 Microenterprises (97.6%) with 75.4% of employed persons; 79,367 Small enterprises (2.0%) with 13.5% of employed persons and 16,754 Medium enterprises (0.4%) with 11.1% of staff employed, Table 1.

Table 1. Classification of companies in Mexico.

Enterprises	Number	Percentage (%)	Employed Persons (%)
Microenterprises	3 952 422	97.6	75.4
Small enterprises	79 367	2.0	13.5
Medium enterprises	16 754	0.4	11.1

Source: INEGI (2014).

By economic sector companies are integrated according to the following percentages: trade accounts for 56.5% with 48.2% of employed persons, services 32.4% with 32.9% of employed persons; and the manufacturing industry constitutes 11.1% with 18.9% of staff employed.

Also listed are the fifteen strategic sectors that make up the national level: Food, beverages, tobacco and confectionery; Home appliances; Electronic communications, personal consumption and accessories; Ground transportation equipment, except railway; Medical equipment and measuring instruments; Equipment and machinery for industry; Textile industry; Plastics and Rubber; Wood products; Products for construction; Busi-

ness support services; Travel services; Pharmaceutical products; Chemical industry; and Research and technological development services. (INEGI, INADEM and BANCOMEXT, 2016). In addition to the above, according to the 2014 economic census of the National Institute of Statistics and Geography (INEGI); in Mexico there are 3 724 019 family businesses, which are divided into 1'858,550 (49.9%) in the commerce sector; 1'367,287 (36.7%) in the services sector; and 436,851 (11.7%) in the manufacturing sector, Table 2.

Table 2. Classification of family enterprises by economic sector.

Economic Sector	Number	Percentage (%)
Commerce	1'858,550	49.9
Services	1'367,287	36.7
Manufacturing	436,851	11.7

Source: INEGI (2014).

It should be noted that the present work is a correlational-causal transactional research with a quantitative approach (Hernández, Fernández & Baptista, 2010); since it establishes relations between each of the variables that belong to the constructs of Business Culture and Protocol; to verify if the two constructs are correlated, that is to say, if the Business Culture is a antecedent of the Protocol. Also, a population of 43 951 micro, small and medium enterprises of the metropolitan area of San Luis Potosí (Mexico) was considered that comprise the services, commerce and manufacturing sectors; according to the National Statistical Directory of Economic Units (DENUE) of the National Institute of Statistics and Geography (INEGI) (2014), taking a sample of 330 companies with a margin of error of 5.38% and a confidence level of 95%.

The Business Culture is defined as the set of principles, values, beliefs and myths that the founder of the company, transmits to his successors to guide the behavior of individuals and organizations, with the purpose of ensuring the growth and permanence of the company (Beraza, 2000; López & Trujillo, 2014); and the Protocol, is a voluntary family document written or conciliatory instrument of the different interests that are presented in the company, which clearly states the values and the relationship between family members and their policies; with the purpose of guaranteeing the continuity and succession of the family business (Arenas & Rico, 2014; Barbeito, Crespo, Martínez & Guillén, 2008; Beraza, 2000; Echaiz, 2010; Lozano, 2000). So from this perspective can be hypothesized:

H1: The Business Culture influences in a positive and significant way in the Protocol of the familiar companies.

To measure the Entrepreneurial Culture construct, we used twelve variables of the culture factor, of the F-PEC scale of Astrachan, Klein and Smyrniotis (2002); which is divided into three sub-scales: power, which

marks the influence of the family on ownership, management and governance of the company; experience, which measures the involvement of the family through the number of members and generations of the family with active participation in the business; and culture, which evaluates the family's commitment to the company and its involvement in the company's values. The items of the culture sub-scale are:

- FpecCult1.- The family has influence in the company.
- FpecCult2.- Family members share similar values.
- FpecCult3.- The family and the company share similar values.
- FpecCult4.- Family members support the family business in discussions with friends, employees and other family members.
- FpecCult5.- Family members feel loyalty to the family business.
- FpecCult6.- Family members are proud to discuss with others who are part of the family business.
- FpecCult7.- There is much to gain from participating in the family business in the long term.
- FpecCult8.- Family members are in agreement with the objectives, plans and policies of the company.
- FpecCult9.- Family members are really concerned about the fate of the family business.
- FpecCult10.- The decision to participate in the family business has a positive influence on my life.
- FpecCult11.- I understand and support the decisions of my family regarding the future of the family business.
- FpecCult12.- Family members are willing to make a great effort to help the family business succeed.

In order to measure the Protocol construct, eleven questions were elaborated by a working group that collaborates with the Institute of Family Business (IEF) in Barcelona, Spain, which is described below:

- ProtFam1.- The family protocol has a positive influence on the functioning of the company.
- ProtFam2.- It is important that the family protocol is signed by family in law.
- ProtFam3.- The family protocol should include a mechanism to prevent the sale of shares or shares to third parties.
- ProtFam4 .- The family protocol should include clear rules for the incorporation and departure of family members of the company.
- ProtFam5.- The family protocol should include remuneration policies for family workers.
- ProtFam6.- The family protocol should include policies to promote family members working in the company.
- ProtFam7.- Provide for the succession of the principal responsible positively influences the operation of the company.

- ProtFam8.- It is important to communicate the succession plan to the whole family.
- ProtFam9.- It is important to communicate the succession plan to non-family employees.
- ProtFam10.- It is important that the company continue in the future in the hands of its descendants or other family members.
- ProtFam11.- It is advisable that the successful leader continue to participate in the day-to-day business.

It should be noted that all variables were measured with a seven-point Likert scale, with a variation from 1 (Strongly Disagree) to 7 (Strongly Agree).

The reliability and validity of the Business Culture and Protocol scales were evaluated with a first order Confirmatory Factor Analysis (AFC); using the maximum likelihood method and the EQS 6.1 software (Bentler, 2005; Brown, 2006; Byrne, 2006). The reliability of the scales was calculated with Cronbach's alpha which is the average of all possible split coefficients, which result from different ways of dividing the reactants of the scale; and with the Composite Reliability Index (IFC) which refers to the consistency internal to the construct indicators, which represents the degree to which they indicate the common latent construct (Bagozzi & Yi, 1988). The results obtained from the first order AFC are presented in Table 3 and suggest that the model has a good fit of the data ($S-BX^2 = 441.382$; $df = 229$; $p = 0.000$; $NFI = 0.983$; $NNFI = 0.991$; $CFI = 0.992$ and $RMSEA = 0.062$); Cronbach's alpha and IFC are superior to 0.7, which represents the reliability of the two scales used, and justifies the internal reliability of the scales of the theoretical model (Nunnally & Bernstein, 1994; Hair, Anderson, Tatham & Black, 1995).

Also, as evidence of convergent validity the results obtained from the first-order AFC, Table 3 shows that all items of related factors are significant ($p < 0.01$), because all standardized factor loads are greater than 0.6 (Bagozzi & Yi, 1988), and the Extracted Variance Index (IVE), that is, the total amount of the variance of the indicators that are taken into account in each pair of constructs of the theoretical model Entrepreneurial Culture and Protocol, has a value higher than 0.5 as recommended by Fornell and Larcker (1981); which means that the theoretical model has a good fit of the data.

Table 3. Internal consistency and convergent validity of the theoretical model.

Variable	Indicator	Factorial load	Robust t-value	Cronbach alpha	IFC	IVE
Corporate Culture	FpecCult1		1.000 ^a			
	FpecCult2		16.389			
	FpecCult3		18.534			
	FpecCult4		14.766			
	FpecCult5	0.744 0.760 0.794	20.901			
	FpecCult6	0.700 0.831 0.828	19.060	0.959	0.952	0.625
	FpecCult7	0.803 0.808 0.805	20.099			
	FpecCult8	0.802 0.809 0.790	17.862			
	FpecCult9		18.222			
	FpecCult10		17.834			
	FpecCult11		18.722			
	FpecCult12		17.008			
Protocol	ProtFam1		1.000 ^a			
	ProtFam2		13.954			
	ProtFam3		34.097			
	ProtFam4		37.407			
	ProtFam5	0.883 0.733 0.889	44.467			
	ProtFam6	0.913 0.930 0.917	34.748	0.971	0.972	0.759
	ProtFam7	0.908 0.907 0.748	36.618			
	ProtFam8	0.882 0.844	35.803			
	ProtFam9		17.150			
	ProtFam10		30.683			
	ProtFam11		28.135			

S-BX² (df=229) = 441.382; p < 0.000; NFI = 0.983; NNFI = 0.991; CFI = 0.992; RMSEA = 0.062

^a = Parameters constrained to that value in the identification process.

*** = p < 0.01.

As for the discriminant validity of the theoretical model of the Business Culture and the Protocol, it was measured through two tests, which are presented in Table 4. First, the confidence interval test (Anderson & Gerbing, 1988), where it is established that with a 95% confidence interval none of the individual elements of the latent factors of the correlation matrix contains the value of 1.0. And secondly, the extracted variance test is presented (Fornell & Larcker, 1981), which states that the variance extracted between each pair of constructs is higher than its corresponding IVE. Therefore, according to the results obtained from both tests, it can be concluded that both measurements show sufficient evidence of discriminant validity of the theoretical model.

Table 4. Discriminant validity of the model.

Variables	Corporate Culture		Protocol
Corporate culture		0.625	0.141
Protocol	0.300	0.452	0.759

The diagonal represents the Extracted Variance Index (IVE), while above the diagonal the part of the variance (the correlation to the chart) is shown. Below the diagonal, we present the estimated correlation of the factors with a 95% confidence interval.

To obtain the results a model of structural equations was developed, which consists in developing a model based on theory and causal relations, assuming that the change of one variable produces the change in another variable which generates a relation of dependency, which must be justified theoretically, taking into account that one or more key predictive variables can be omitted, which causes a specification error; after establishing the model of structural equations in a series of equations, its statistical significance is evaluated by means of fit quality criteria to interpret the results (Hair *et al.*, 1995). Taking into account the theoretical foundations, a first order model was proposed that relates the constructs of the Business Culture and the Protocol that make up the variables not observed and that are exogenous, which are composed of the observed and endogenous variables, as illustrated in Table 5, it should be noted that each of the variables corresponds to an error.

Table 5. Variables of the Model of first order that relate the Business Culture and the Protocol.

Construct Name	Variable	Label	Kind	Error
Corporate Culture	F1	Not Observed	Exogenous	
	FpecCult1	Observed	Endogenous	E1
	FpecCult2	Observed	Endogenous	E2
	FpecCult3	Observed	Endogenous	E3
	FpecCult4	Observed	Endogenous	E4
	FpecCult5	Observed	Endogenous	E5
	FpecCult6	Observed	Endogenous	E6
	FpecCult7	Observed	Endogenous	E7
	FpecCult8	Observed	Endogenous	E8
	FpecCult9	Observed	Endogenous	E9
	FpecCult10	Observed	Endogenous	E10
	FpecCult11	Observed	Endogenous	E11
FpecCult12	Observed	Endogenous	E12	
Protocol	F2	Not Observed	Exogenous	D1
	ProtFam1	Observed	Endogenous	E13
	ProtFam2	Observed	Endogenous	E14
	ProtFam3	Observed	Endogenous	E15
	ProtFam4	Observed	Endogenous	E16
	ProtFam5	Observed	Endogenous	E17
	ProtFam6	Observed	Endogenous	E18
	ProtFam7	Observed	Endogenous	E19
	ProtFam8	Observed	Endogenous	E20
	ProtFam9	Observed	Endogenous	E21
	ProtFam10	Observed	Endogenous	E22
ProtFam11	Observed	Endogenous	E23	

Own elaboration.

Results

To answer the hypothesis of research raised H1: The Business Culture influences in a positive and significant way in the Protocol of family companies; in this empirical study, a model of structural equations of the first order was applied with the software EQS 6.1 (Bentler, 2005; Brown, 2006; Byrne, 2006). In addition, the nomological validity of the theoretical model of the Business Culture and the Protocol was analyzed through the Chi square test, by means of which the results were compared obtained between the theoretical model and the measurement model, obtaining significant results, which allows to provide an explanation of the observed relationships between latent constructs (Anderson & Gerbing, 1988; Hatcher, 1994); in Table 6, the results obtained are shown.

Table 6. Results of the Structural Equation Model.

Hypothesis	Structural Relationship		Standardized Coefficient	Robust t-value
H1: The Business Culture influences in a positive and significant way in the Protocol of the familiar companies.	Business Culture	Protocol	0.533**	8.573

$S-BX^2$ (df=229) = 425.179; $p < 0.000$; NFI = 0.928; NNFI = 0.962; CFI = 0.965; RMSEA = 0.059

** = $p < 0.01$.

The results of the application of the model of the first-order structural equations are presented in Table 6 and indicate, with respect to the **H1** research hypothesis ($\beta = 0.533$, $p < 0.01$), that Business Culture has positive effects in the Family Business Protocol. Therefore, it is possible to affirm that the set of principles, values, beliefs and myths that the founder of the company, transmits to his successors to guide the behavior of people and organizations, with the purpose of ensuring the growth and permanence of family businesses will have positive effects in the Protocol, in order to ensure the continuity and succession of the family business.

Conclusions

Family businesses can be successful because their structure is owned by the family, as well as management when it remains in the hands of the founding family after several generations, allowing it to expand into the international business network (Tápies, 2011); in Mexico, as in the rest of the world, family businesses are a generator of wealth, employment and innovation; because from an idea, a project or a business plan, it can give rise to a business that grows and constitutes the family patrimony for generations.

However, not all family businesses are consolidated by the challenges they face, such as the lack of organization to make decisions and manage costs; lack of policies and guidelines on what owners and family members should do or avoid; add value to the business; not having a vision to balance and align the issues of family, property and business objectives; not to design a chain of controls, a promotion plan and a succession plan that will help strengthen the business in the future and avoid the mortality of family businesses (INEGI, 2013).

Also, Andrade (2002) confirms that the family business belongs to the interaction of two systems, family and business, implying a series of values difficult to quantify, because of the close cultural, traditional and emotional nexus that exists with the family that directs the organization; which allows family members to establish a strong commitment to achieve business success by giving a long-term orientation through flexible organizational stability, family culture being a source of pride and motivation; that can favor to the people of the business have a common objective and unique for which to fight; stay together in the future; avoid or reduce the conflicts that occur in the process of succession to the next generation; establish a succession plan for the transition of those who inherit leadership; be flexible and adapt to change; all with the purpose of accessing the markets of the global context.

The high mortality of family businesses is explained in most cases by the lack of a business plan; of not having an efficient and flexible structure; that workers and / or managers are not aligned with the strategy of the company; the lack of a succession plan that endangers the destiny of the business; not to foresee the permanence of the founder and the promotion of the future directors; when property, council designation rights and strategic decision making are unclear (Mayo, Gonzalez & Perez, 2016).

In summary and according to the empirical results obtained, it can be confirmed that the culture of the family companies is an antecedent of the protocol; that is, from the values, beliefs, behaviors, norms and attitudes; which make up the culture of family businesses; which is transmitted by the example of the founders and owners; allow the establishment of the necessary mechanisms of succession to the next generations, such as the protocol, which consists of a written voluntary family document or conciliatory instrument of the different interests that are presented in the company, which clearly states the values, rules and the relationship between family members and their policies; with the purpose of guaranteeing the continuity, permanence, direction, control, succession and success of the family business (Arenas & Rico, 2014; Barbeito, Crespo, Martínez & Guillén, 2008; Beraza, 2000; Echaiz, 2010; González, 2010; Lozano, 2000).

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Chapter 7

Building the Firm's DNA: The Role of Entrepreneurship, Environment and Strategy

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Abstract

A firm's DNA is forged mainly by the entrepreneur, and to some extent by the entrepreneur's initial collaborators, in response to external factors. This article emphasizes the entrepreneur's role in the early days of the firm, when the DNA configuration emerges. We argue that the firm's DNA is a reflection of entrepreneur's, core values, reactions, and assumptions. The most drastic variations in a firm are expected to happen during its early days, variations that will determine the firm's DNA, and largely, its relationship with its internal resources and environment. The initial role of an entrepreneur might increase the firm's chances of success if the entrepreneur is willing to design experiments and redefine the relationships between the different agents and resources that facilitate the emergence of a valuable DNA configuration. Strategy at this stage should be a rapid and slim experimentation that moves forward the firm's adaption to the environment; moreover, not all new firms are expected to survive. The aim of this paper is to increase the firm's chances of survival and to discuss the incorporation of a sustainability gene to the initial configuration of the firm's DNA. This article focuses on the very early stages of the firm, when it is only an idea of potential realization and when the entrepreneur's role and quest is to develop a new firm and to define its first relationships and reactions,

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which will be retained and encoded as an organizational culture, routines, and rituals, all of them encrypted in the firm's DNA. Relationships become interrelations in a dynamic setting. In this initial process, an intended action (bottom-up) and its feedback (up-bottom) produce an emergent set of interrelations that determine an emergent firm DNA, which will to some extent determine the firm's fate. The entrepreneur's role is expected to evolve as the firm matures from an experimenter-warrior role to that of an efficient administrator.

Keywords: DNA, *entrepreneurship*, *environment*, *strategy*.

Introduction

There is little discussion about how the entrepreneur develops the initial firm configuration and relationships that will subsequently be embedded in the firm's DNA; as a contribution to the literature, this paper focuses on such an aspect of the creation of start-ups. There is also scant literature focused on how the firm's DNA is constructed during its initial stages, when an idea is still in the process of becoming a firm. Despite recent related research such as goal-seeking is among the new developments in this field, in general, the study of entrepreneurship it is still on its early stages. This paper introduces new theoretical insights and discussions focused on the firm's very beginnings as a contribution to the matter of how an entrepreneur develops decisions. On the practical side, nature took billions of years to develop the current variety of life forms by encoding information in DNA so that organisms could adapt to their environment, but an entrepreneur has just a few opportunities to find a valuable firm DNA configuration, if it is ever found.

On the theoretical side, entrepreneurship is a relatively new discipline; this field still looks forward to gaining legitimacy as a valid area of academic research (Cooper, 2003). The present article uses the variation-selection-retention model (VSRM) to discuss emergent culture and the important role of the entrepreneur in defining its resources and interrelations. This paper begins by presenting the analysis method, which is based on an evolutionary realist perspective. After that, we present a description of the role of the entrepreneur in this context followed by a discussion centered on how interrelationships take place in a dynamic setting. Subsequently, we explore the role of emergence and its impact on an entrepreneur's decisions. Finally, the article discusses the effect of implanting a green gene in the firm's DNA and its impact on the firm's evolution and the emergence of value.

From an economic perspective, the concept of value has an evolving meaning. In the structure-conduct-performance (SCP) paradigm, the firm is not directly involved with the environment; it leans toward a compressed view. The concept of value becomes more comprehensive as it incorporates elements beyond the economy, among others, the balance scorecard (Kaplan & Norton, 1996) and other lines of investigation. Certainly, sustain-

ability is one of latest additions to the concept of value. This paper is based on a literature review and a conceptual analysis of the literature on entrepreneurship, emergence, the variation-selection-retention paradigm, and experimenting. However, this is not a comprehensive literature review; the discussion is an attempt to bring out and integrate representative streams of relevant literature from these areas to identify key aspects with a view to establishing conceptual linkages. Despite this study does not include empirical testing, emergent hypotheses are put forward.

Method

This work employs an evolutionary realist perspective, which incorporates the best of two competing philosophical currents: the *realist* perspective, which claims that reality has an objective existence independent of individual perceptions (the extreme version of this perspective states that knowledge is based on observable facts only, otherwise it is not knowledge) (Popper, 1979), and the *constructionist* perspective, which claims that reality is a social product based on the interactions of individuals (Berger & Luckmann, 1967). Both positions have their shortcomings, which are overcome by ERP (for a deeper analysis see Alvarez, Barney, & Young, 2010). ERP assumes that there is a reality, that this reality is independent of individual perceptions, and that it also involves individual beliefs (Campbell, 1974). Under the ERP view, interrelations and emergence play important roles.

The Role of the Entrepreneur

Realists claim that exploitation opportunities are for those who can discover them and take advantage of them, and that those who exploit must have some extent of *ex-ante* knowledge. In this sense, an entrepreneur is better equipped to unveil reality and take advantage of an opportunity (McMullen & Shepherd, 2006). The main difference between realists and constructionists is that realists explain observable and non-observable phenomena as observable, whereas for constructionists, non-observable phenomena are subject to interpretation and understanding (Azevedo, 2002).

The central assumption of constructionists is that opportunities exist, and entrepreneurial activity appears once they are discovered. This can be considered as captured value. Individuals interpret phenomena, raw data, or resources and assign them meanings that differ from other's interpretations. In a constructionist approach, opportunity formation takes place when entrepreneurs create alternative realities and then shape their actions toward these realities (Katz & Gartner, 1988). For realists, opportunities are assumed to arise from imperfect knowledge that is independent of individual perception: opportunities come from the real and observable world. The start-up process can be complicated, and success is not guaranteed. Individuals do not recognize opportunities immediately; initially,

individuals act and then wait for a response, and after the feedback, they might respond to the observed results (Weick, 1979). This context opens the possibility for a valuable configuration or firm DNA to be found without much effort or even luck (Barney, 1986).

Within ERP, opportunities are sometimes not even present, they must be developed. It is possible that the entrepreneur's initial ideas were not even the right direction. The "right" firm DNA configuration can be found at the first attempt (by chance), but the initial level of uncertainty of firm start-up processes makes this possibility uncommon. An example of finding the right answer at the first moment or stroke is the garbage can model (Cohen, March, & Olsen, 1972) where solutions and problems are dumped in a can, for example a client looking for a product and the firm that envisions that specific product, and if there is a match between solution and problem, the hammer has found a nail. This resembles blind variations: "Deliberate or intelligent variations would do as well as blind, haphazard, chance, random, or spontaneous ones" (Campbell, 1965:28), and they can emerge without any self-conscious planning or foresightful action. If instead of having only one solution, one chance, the entrepreneur varies the firm's DNA and finds a better solution incorporating some insights in the form of variations (experiments), the entrepreneur is expected to achieve far better success.

Under this view, the entrepreneur's role is not to encounter or re-interpret their surroundings, but to find a configuration, the firm's DNA that will ultimately deliver value. In this context, the strategy takes different forms, and variation becomes part of the equation, because given that the opportunity may not exist yet (Morris & Webb, 2015), variations in the form of experiments play a key role in finding the best or most viable alternative, which becomes relevant in a system restricted by its resources and environment.

As the start-up develops, the entrepreneur is expected to carry out increasingly important trials and then to move on to a stable, consolidated firm, where changes become replications of its DNA. Not only solutions and relations have to change in the initial phase, but also the entrepreneur's role of "transforming a fledgling enterprise into an entity capable of an independent existence" (Bhide, 1996: 129), where entrepreneurs might require undertaking new roles. Not only is the entrepreneur expected to adapt to evolving roles, but also the rest of the initial participants are expected to do so, and sometimes to observe regulations and environmental considerations. In this article, entrepreneurship is defined as "the study of how, by whom and with what consequences opportunities to produce future goods and services are discovered, evaluated and exploited" (Shane & Venkataraman, 2000:218). In view of the many unknown factors, the role of emergence takes on special relevance (Morris & Webb, 2015).

Emergence and Entrepreneurship

The concept of emergence entails a position against reductionism: the appealing paradox declares that the whole is more than the sum of its parts. Reductionism understands that the behavior of a system is determined by the laws that govern the behavior of its parts. Consequently, if the behavior of individual parts constitute the system, then the laws governing the behavior of the whole can be deduced; it “seems at least possible that high-level functional properties could be realized in radically different constituents” (Campbell & Bickhard, 2011:1).

As Polyani (1958) explains, resources *per se* do not explain much: if you “take a watch to pieces and examine, however carefully, its separate parts in turn, you will never come across the principles by which a watch keeps time”. It is argued that there is no intrinsic value in any single asset, entrepreneur, resource, or strategy. This is not a mechanical view where a valuable resource can be inserted into the new adventure and be part of the creation of value: there are emergent properties to a system (McKelvey, 2004). In the process of emergence, new properties arise that are essentially new, and therefore unpredictable, which “is a property of the combination that can be foretold exhaustively from the individual elements” (Ablowitz, 1939:3). Novelty is a key element of emergence, it cannot be explained by the individual constituents or pieces that conform the object or system, and it is difficult (if not impossible) to explain, predict, or derive its ultimate constituents based on its properties (Silberstein & McGeever, 1999).

A classic example is when two hydrogen atoms are mixed with an oxygen atom in a chemical reaction, the result of which creates a new entity with different characteristics that neither of each component has by itself (Silberstein & McGeever, 1999). A rather unexplored extension to this line of thought is the case of oxygen peroxide, in which another liquid, with properties quite different from water can also be produced by combining hydrogen and oxygen with different properties of each components and possible combinations (Morris & Web, 2015:459).

There are four properties that help to identify when a supposedly emergent system is not so: 1) no major changes occur in the system in the presence of inter-substitution and a change in the order of its elements does not alter the result; 2) the system has a similar behavior even if parts are subtracted or added (size scaling); 3) there is no variation when the decomposition and aggregation of its parts is involved, and 4) the system is linear (Wimsatt, 1997). The Firm's resources should not be used in traditional ways if new properties are the goal (Penrose, 1959).

Lately, entrepreneurship has been enriched with several fresh paradigms; among them, the chaos and complexity involved when emergent conditions are incorporated. An entrepreneur might try or experiment with different configurations where the emergent results can be compared with their initial expectations. New events can also be part of the new reality: in a dynamic setting, competitors react and new conditions emerge—as emergent properties—, some of them unexpected. Neverthe-

less, not only competitors react: emergent properties arise, among them sustainability. An increasingly conscious society may promote and select sustainable firms, products, and endeavors.

Relations and Interrelations of the firm and its Relationship with the Environment and the Creation of Knowledge.

Emergence entails the idea that the whole cannot be explained by the properties of individual parts. The relationship between the firm's resources and capacities is acknowledged, but it is equally important to recognize the *interactions* among them within the firm and its environment (Azevedo, 1997), and to understand the firm as an open system, where isolated assets do not tell the whole story and the interaction among parts or assets propitiate emergent properties that can help to explain the firm's behavior (Holland, 1998).

As the firm's relationships are developed, they can become a network. Network theory emphasizes the importance of considering the links with other firms and the capabilities developed through relationships (Gulati, 2000; Takesishi, 2001), and other relevant networks can be embedded in the structures of social relationships (Granovetter, 1985). An entrepreneur develops interrelations that create certain specific (idiosyncratic) configurations that can be expressed as a value chain (Porter, 1985). At a higher level of analysis: from clusters, industrial sectors, and even matters at the national level (Porter, 1991). In the arena of international entrepreneurship, the importance of the firm's configuration is explained as "building competitive advantage by developing complex international resource configurations" (Karra, Phillips & Tracey, 2008: 441).

Knowledge can derive from entrepreneurs' experiences, but also from the firm's environment: "knowledge can be observed and distinguished on two levels, the individual and the social" (Nonaka & Nishiguchi, 2001:32). A firm can have several agents of knowledge, but the creation of knowledge requires relations and interaction beyond the firm's boundaries. An entrepreneur is not embedded in a closed system, their gaze is not limited to the space within the firm or only to one idea as the best way to define the firm's DNA; every activity has an impact on the environment, and external and internal factors and agents are affected by the decisions and definition associated with those relationships, and vice versa.

A basic goal for an entrepreneur is to determine how to create a valuable configuration with an impact on the definition of the firm's DNA and how this DNA is embedded in internal as well as external interrelations and how it will be able to deliver value. The present article argues that value emerges from the interactions among different assets or actors inside and outside the firm. In the language of strategy, value that is labeled as a competitive advantage that lies in the configuration of resources, not in capabilities themselves (Eisenhardt & Martin, 2000). This line of thought acknowledges interactions: from micro to macro states, among agents, firms, and clusters. At a medium level of analysis, Network theory stresses the

importance of considering the links with other firms and the capabilities developed through relationships (Gulati, 2000, Takesishi, 2001) and the importance of taking into account that a firm consists in structures and social relationships (Granovetter, 1985:481). Another group of researchers makes a similar claim in that that knowledge can be observed and distinguished on the individual and the social level (Nonaka & Nishiguchi, 2001).

Variation, Selection, and Retention (The VSR Model)

One of the earliest works on evolution was the VSR model, where “the rate of increase in fitness of any organism at any time is equal to its genetic variance in fitness at that time” (Fisher, 1930). Campbell’s evolutionary approach acts through blind variation, meaning a trial and error approach. From those variations, some entities are selected based on the environment or culture. Campbell contends that blind variation and selection-retention process are fundamental in all genuine increases in knowledge and increases in fit to the firm’s environment (Aldrich & Kenworthy, 1999). From blind variation to heuristic variation. Under the ERP model, if there are enough entrepreneurs then blind variation might show a fit either for vision, superior knowledge, better understanding of the reality, or sheer luck. But it is possible for one entrepreneur to increase the firm’s chances of fitness using heuristic variation instead of gambling with just one opportunity by taking advantage of the VSR view: “the cycle of variation, selection, and retention is repeated endlessly, as systems move toward greater fit with their environments” (Aldrich & Kenworthy, 1999: 23).

Based on lean manufacturing, Ries (2011) provides guidelines on how start-up processes should begin; regardless of their size, firms must be lean, learning must be validated through a build–measure-learn cycle, and innovation accounting must be used. Therefore, a start-up process is equivalent to an experiment. In fact, the notion of innovation and new ways of combining resources that might result in a new product are part of the creative destruction cycle (Schumpeter, 1934).

During the firm’s first stage, entrepreneurship is about experimentation. A heuristic experiment has the advantage of design and may try different configurations, such as that with the least number of trails, to maximize learning and information. It is possible to devise a new experiment and a new configuration based on results from previous configurations. In this sense, an entrepreneur should be a good experimenter. Adaptation emerges after alternative configurations of resources capable of generating value. Each configuration can deliver different degrees of value: from very positive to very negative (Axelrod & Cohen, 1999). In this line of thought, determining the firm’s value and longevity is possible to some extent (Lujan-Salazar, 2016).

The Role of Experimenting and the Definition of DNA Links

Resources are related or linked to one another, and emergent properties arise from their interaction. The concept of value emerges when several assets are organized to interact, but it is difficult to determine how valuable the outcome will be. In an evolutionary realist perspective, what the entrepreneur envisions is not necessarily a mirror of reality; instead, “the entrepreneur’s goal is to construct, deconstruct, and reconstruct an existing reality so as to form a new reality and thus opportunity” (Alvarez *et al.*, 2010: 27).

Hitt *et al.* (2011) explained that the entrepreneurship process involves discovery, evaluation, and exploitation of opportunities. Carlsson and Eliasson (2003) claim that there is an essentially non-linear and neo-Schumpeterian evolutionary framework in which entrepreneurship offers a decisive link between technological systems and the business opportunities to be exploited. Due to the level of uncertainty, a start-up can be compared with an experiment: “Starting a new business is essentially an experiment. Implicit in the experiment are several hypotheses (commonly called assumptions) that can be tested only by experience” (Block & MacMillan 1985).

As the firm’s DNA develops experimental links, if any link-relation is better than another, or if there is a possibility to improve a relation with a supplier, client, or relevant agent such as the government or universities, among other possibilities including the firm itself, such link-relation can be encoded in the DNA. Developing relationships or organizational culture is a matter of reinforcing cycles, as a relation usually takes time and effort. That can be a problem for the entrepreneur because they possess limited time and resources to choose and find the best relationships and develop a viable firm DNA.

The firm’s birth and how relations are built and embedded in a firm’s configuration are important matters (Luján-Salazar, 2016). As the firm’s structure is defined, its initial stages will determine the main features of the firm, its organization, its culture, the product’s main characteristics, and the way to compete or collaborate. In this path, what an entrepreneur does determines the firm’s configuration, which might determine its viability and its future.

Unfortunately, not only on resources are limited, but also the links that can be created and become part of the firm’s advantage in the form of stock accumulation (Dietrix & Cool 1989). Constrained resources can be the major reason for start-up failure. A main hypothesis of this article is that the way in which the right firm DNA is obtained sometimes has to do with the entrepreneur’s stubbornness (hubris?) to move from its initial position-idea, where from the beginning there was not room to experimenting and change their initial idea (hypothesis). A middle ground between the entrepreneur’s leadership and stubbornness must be found in the sake of flexibility and openness to new experiments in the form of variations that might increase the firm’s chances of survival.

Far from the extreme positions of reductionism or of holism, downward causation can be defined as opposite to the reductionist principle, where the behavior of the parts is determined by the behavior of the whole and determination moves downward instead of upward. The main difference is that determination is not complete. The whole is constrained by the parts, which at the same are constrained by the whole (downward causation).

The blind variation process and the large number of entrepreneurs looking for an opportunity, it is likely to find one adequate configuration: "The great heterogeneity and the tremendous numbers of variations make almost inevitable the accidental discovery a strong adaptive form" (Campbell, 1965:37). Despite that the blind variation and selection-retention processes are fundamental for an inductive increase of knowledge, an increase in knowledge corresponds to a solution that fits its system and its environment (Aldrich & Kenworthy, 1999). Entrepreneur, acting as researchers, experiment with hypothesis toward fast learning, incorporating feedback to increase positive learning and reduce negative learning (leverages). An emergent hypothesis of this work is that: *In the early days of the firm, defining the relations and roles embedded in the firm's DNA is the main role of an entrepreneur.*

Entrepreneurs face not only limited information, but also a complex task. Complex and chaotic systems are examples of nonlinear dynamical systems where small variations at the beginning can create a larger impact on the future development of the firm. In a dynamic system, status and variables evolve over time as a function of an underlying rule or attractor (Abraham & Shaw, 1992). A rule embedded in the firm's DNA is initially developed by the entrepreneur, who incorporates their knowledge and preferences (upward causation). Taken to the extreme, the first step of the firm is a direct result of the entrepreneur's decisions and actions; as the firm (system) grows, it might reflect their core values.

In terms of design, upward causation, takes the form of systemic leverage points that create synergy by direct complementary interaction between the parts. But there is another driving force: downward causation, which takes the form of systemic nurturance spaces. Downward causation creates synergy by creating a space-time context that invites synergy among the parts. An example of upward causation is particles making atoms, which make molecules, which build cells such as neurons, which ultimately make our brain: small particles from the bottom to the top. On the other hand, downward causation occurs indirectly, mechanisms at higher organizational levels fail to accomplish or adapt the tasks dictated by the lower levels.

The firm's DNA is partly determined by the early decisions of the entrepreneur, but also by the restrictions and resources of its environment. Minor changes in the initial configuration may lead to a major impact on the future evolution of the firm. Among the initial decisions are those associated with the configuration of a green firm.

The Firm's DNA: Early Implications

In biology, a DNA sequence incorporates a set of instructions for the execution of specific chemical processes within cells and other structures, including their role as a digital information storage in protein-based “circuits” that determine the behavior of cells; gene regulation is tightly controlled by a variety of feedback mechanisms. In the case of the firm, DNA is encoded, embedded on its culture, procedures, and processes that guide the firm's present and future behavior. The entrepreneur's decisions and actions are expected to have a significant role in defining and shaping the initial firm DNA on the firm's early days. Once the firm's DNA is forged, it is somewhat difficult to modify, hence the importance of incorporating a sustainable gene in the firm's DNA. Initial decisions are also expected to have a considerable impact on the firm's development and level of success.

These important decisions made during the definition of the initial configuration will determine the nature of the firm's DNA to some extent. At the beginning of firm's life, the prevailing types of relationships with suppliers, customers, employees, and shareholders will be defined: Will the relationship be competitive or cooperative? Will the costumers also be suppliers? Will the product be designed with recycling in mind? What kind of packaging will be employed? Everything is new in the beginnings of a start-up: information, relationships, products, and processes, among other variables. Given the level of uncertainty faced by start-ups, the first sequence of experiments may consume much energy, but afterwards, the process can be optimized. It is hard to believe that, from the very start, the first DNA test will result in an efficient and ecologically friendly configuration.

There is beauty in being small: An entrepreneur's firm, in the beginning, is just a reduced number of persons and resources and no path-dependence, where it is most likely the entrepreneur who has the most to say and the main driver of the new adventure. At this stage, there is an incipient culture as well as a limited amount of resources, experience, and probably few developed internal and external relationships. The development of new relationships must be complemented with product design, packaging and processes.

In a down-top structure, the ideas developed by the entrepreneur are nurtured and constrained by top-down causation, which is part of the new start-up; i.e., two-way causation. In a dynamic system, ideas are constrained by the dynamics themselves. Generally, those dynamics are determined by a set of attractors in which the smallest fluctuations the initial state of the system, even if it is not yet determined, can push a system such as a firm either toward one attractor regime or the other. As the firm matures and grows, there is a high probability that the firm's DNA will be replicated, and it is possible that the initial team and inner circle will also have an impact on the decision-making process because, due to the firm's DNA, “culture must be custom built” (Bhide, 1996:128). Once an attractor is reached, the system the system is expected to lose its freedom and the attractor emerges on the next stage; at this advanced stage, variations become constrained (Lujan Salazar, 2016).

As the norms, culture, processes, and products become mature, path dependence and economizing in form of cost reduction becomes relevant. But, cost advantage is not the only possible strategy. Another potential advantage is to position the firm and its product in a new niche. Being a green company can help the entrepreneur to position the start-up away from the competitive red sea, where a new form of competition can emerge (Kim & Mauborgne, 2005).

The Emergent Green Culture and the Role of sustainability

There are two main considerations about being a green entrepreneur. The first is associated with keeping the environment sustainable and the second with improving the conditions of the environment. A firm is not an isolate entity; formal links are associated with the supply chain as processes that connect the firm with suppliers and customers. The conditions of suppliers and customers matter because the firm's inputs are combined with existing business processes to form new value chains (Porter, 1990).

The whole is expected to be more (sometimes it is less) than the sum of its parts. In other words, the whole has emergent properties, one of which can be sustainability. As a result of new requirements and expectations, firms are required to become more environmentally sensitive (Pascual *et al.*, 2011). An entrepreneur who includes an appropriate relationship with the environment in the firm's DNA might be in a better position to increase the firm's likelihood of survival. At first, the entrepreneur will try several variations before finding the best fit. The firm's DNA can reflect the core values of the entrepreneur. In the same way as a snowflake reflects its initial structure, the entrepreneur is expected to shape its values and ideas into the incipient organization, which can include sustainability.

A sustainable entrepreneurship perspective expects entrepreneurs to be accountable to their investors and shareholders as well as to future generations. From a bottom-up view, the entrepreneur's valuation of sustainability is of utmost importance in the configuration that builds the firm's DNA because this trait will be replicated by the firm's DNA as the firm matures, guiding future actions.

In the management literature, sustainability is deemed as a factor that increases the firm's level of survival, and some instances of strategic literature even consider sustainability as a competitive advantage. Sustainability literature explores some related terms, such as eco-preneurship, eco-entrepreneurship, or environmental entrepreneurship, all of which entail an innovative entrepreneurial behavior. Firms have changed their scope from being isolated firms to a more comprehensive reach beyond the physical boundaries of the firm, which makes the outside of the firm become part of its configuration and culture (Luján Salazar, 2016). The culture beyond the physical boundaries of the firm matters because “[s]ustainable development is the development that meets the needs of the

present without compromising the ability of future generations to meet their own needs” (WCED, 1987).

The first configuration might not be optimal; however, the entrepreneur can seek a sustainable firm since the beginning, which will increase the likelihood of future developments. An example of this would be the early design of products and packaging based on circular economy principles. The main derived hypothesis is that a firm would be more ecologically oriented if sustainability were from the very beginning embedded in its DNA. Consequently, if the entrepreneur includes sustainability in the firm’s configuration from the very beginning, the firm will preserve this basic feature as it grows.

From a top-bottom view, legislation and regulations have an effect in the behavior of a firm, (they can be considered as attractors). A start-up has several relationships at different levels. The more appropriate the legislation, that the more likely that the firm be ecological. Legislation should provide the same conditions for all new firms to avoid the free rider problem.

Discussion

Authors within the realist view state that “identifying opportunities for value creation lies at the heart of entrepreneurship” (Karra *et al.*, 2008: 441). The evolutionary realist perspective (ERP) identifies opportunities as initial hypotheses that will be tested, followed by many adjustments that may allow for the evolution of the initial idea into a firm’s DNA capable of generating value, as a first condition. The problem of negative externalities is persistent in the classical economic point of view. Entrepreneurs face the dilemma of whether the new firm should mind the environment or not, having to solve the emergent uncertainties about itself and its surroundings, how it will react its competitors – that are nor environment sensitive, may become a free rider problem with the negative impact for the environment and for the new sustainable firms. How to avoid ecological the social dumping calls for a higher level of analysis.

Within the discussion on entrepreneurship, the leader is likely to have a considerable impact on the firm’s DNA, especially in the begging, when major changes can be effected. As the firm’s structure becomes rigid and the organizational culture is established and stabilized, new mechanisms are expected to emerge. It is then more likely for a structure to become formal along with the firm’s business procedures. Just as our human’s ancestors encrypted information in our DNA, firms eventually have the same fate, and all the firms die. However, at the very beginning, management, economic or strategic literature, and even MBAs provide little help or guidance to the development of new firms. The role of undirected experimentation, such as literature or case studies may not provide the most effective guidelines for a start-up venture and on how to acquire new knowledge. (Sorenson, 2003), a knowledge that might be necessary for an adequate definition of the firm’s DNA.

There is a deterministic method to define the best way to conduct a start-up. It starts by discovering and reinterpreting reality and then it moves on to new strategic paths: an entrepreneur plays an important role in defining appropriate plans for this process (Bhide, 1996). For an entrepreneur, there should be a plan, but not within the traditional planning or strategy styles. There are major changes in the mindset of the entrepreneur: from an “all is set” outlook to a starting position, to a flexible, willing to experiment position. Ries (2011) argues that a “good plan” or “solid” strategy might not work despite of its appeal because of the level of uncertainty faced by entrepreneurs.

Strategic literature has focused on the impact of external and internal factors on the firm, but it is generally referred to consolidated firms and how they achieved that status. There is a silence about what strategy to use at the very beginning of the firm, when resources are scarce and organizational culture is incipient. Most of the available tools are developed for a consolidated firm, such as the case of strengths, weaknesses, opportunities, and threats (SWOT) analysis. In a SWOT analysis, little is said about what should be the initial strategy, when the firm and the entrepreneur are in an uncertain place concerning how to deliver value.

The type of relationship the firm will have with its environment is part of its DNA definition. An important feature of this definition is that the relationship or strategy is open to considerations because no strategy or asset has an intrinsic value, and some of the new ways to determine their business can challenge the traditional and even the academic view due to emergent possibilities. The value that can emerge from a relationship can be considered as a hypothesis whose value is yet to be proved. For example, to be competitive or cooperative, or to promote being imitated or not—despite some technical literature—are not deemed as good or bad options: Value will emerge from the firm's initial configuration, not from one isolated asset or gene, but from its whole DNA structure/configuration and its relationship with the environment.

If a viable firm DNA is found in the first trials, can it become better? It is possible, at least at the beginning, for the entrepreneur to lose an opportunity, if they give up the possibility of finding a better definition through finer-tuned variations or experiments. Is there a better configuration of the links and interrelations? Every possibility has different possible outcomes and implications. The link or relationship with employees can be direct or via outsourcing (although, the level of commitment will certainly not be the same). It is possible to select a supplier with lower prices, but their products could be manufactured in a non-sustainable manner. The firm's sustainability gene must be developed in each relationship.

In this article, strategic entrepreneurship is not associated with long-range planning, core competences, or related concepts: not just yet. A viable firm should be developed first. The firm's beginning is marked by a reactive, evolutive, and adaptive position, where major changes and experiments can be put in place thanks to its initial size, while large firms can absorb a large amount of resources and energy; in this sense, being

small allows the firm to reduce consumption to the minimum in each experiment. A major advantage is that the firm can still change, even drastically, their products, processes, and interrelations (Lujan-Salazar, 2016), in other words, the definition of its DNA.

Process, products, and organizational culture are not the only aspects by which a firm conducts businesses. Firms experiment or vary their elements on a regular basis, but most of the time based on their defined DNA. Making variations in a small firm is not the same as in a well-established firm. “Managers introduce unproven products into the market, firms adopt untried policies, and employees try new ways of performing routine activities” (Sorenson, 2003:338).

An optimal organization or a green technology might not be present in the early days of the firm. Circular product and eco-design are concepts associated with sustainability, they might be expensive and can be implemented from the beginning: even some additional investments or actions may have to wait to see if the firm is able to deliver value. This article argues that *Firms must first achieve an economical level of survival to evolve toward a more ecological form*. As an example, the decision to acquire solar panels can wait until the initial firm DNA proves its value. The definition of the firm’s DNA is constrained by limited resources and many uncertainties, which should be explored before compromising the firm’s existence. There are some actions that can be implemented from the beginning, such as ecologically friendly product and process views, and if possible, the introduction of an efficient process is able to reduce costs with eco-design when the entrepreneur considers the environmental impacts of its product from its early stage of design, and throughout its life cycle, that might be improved as the firm matures. Other options that can be considered are materials, packaging, distribution, use, and final disposal of products (Farreny *et al.*, 2015); evidently, more discussion and research is required.

Future Research

The evolution and challenges of the entrepreneur role can be incorporated into mainstream research. Firms begin to evolve since their creation. The conditions that give birth to the new firm are always faced by challenges, as is the entrepreneur and the emergent organization. From a person who is all-in control and with decision-making power (an entrepreneur) to a more stabilized firm with a entrepreneur’s decreasing leverage, can be an opportunity from the academic point of view, where there can be several research’s streams and opportunity to consider and contribute from theoretical and practical point of view.

The role of entrepreneurship has an expiration date; they are expected to take new roles and to start delegating decisions and control. This step has been neglected by entrepreneurship literature, as well as the transition to managerial or CEO positions. New roles and responsibilities are required as firms evolve, and how to navigate from the initial chaos toward

a more mature firm that builds opportunities for expansion and growth remains as venue of interest. Moreover, not only the main entrepreneur's role is bound to change, the initial roles of the inner circle will probably change as well as they become more focused on specific areas or tasks.

A stable firm DNA also requires convergence, or otherwise energy is dissipated: "Many stabilities of the organization of process are (potential) energy-well stabilities – stable organizations of process that are stable because it would require more energy than is available to alter the organization of the process" (Bickhard & Campbell, 2003:221). Firms can incorporate information and learn with the goal of improving their operations. As the system matures, "the observed changes are rather small, serving mainly to perpetuate the existing order rather than displace it" (Aldrich & Kenworthy, 1999:23). On the other end is the problem of eternal variation, where an entrepreneur falls in the trap of continuous innovation rather than focusing on finding a viable configuration, but studying to what extent those variations should be continued and how drastic they should be can be an important contribution to the literature.

This paper discusses an enhanced entrepreneur role in which the entrepreneur faces an increased number of challenges, not only as they cope with traditional rent/survival issues, but also as they find/discover opportunities and configure a firm that uses innovative, efficient, and sustainable processes. The goal of this paper is to elucidate how the firm is structured and designed in the process that goes from a single individual with an initial team to a viable firm as an attempt to answer the question of how to be a good entrepreneur-scientist. Entrepreneurship is not an easy task. From a theoretical point of view, it is related to other disciplines, such as motivational theory, leadership, strategy, and economics, at different levels of analysis, and it moves from entrepreneur leadership to formal management. The modest role of economics in the early stage becomes more relevant as firms become viable. Successful alternatives to enable value creation while maintaining the firm green should be the new standard. Here lies a possibility to improve and increase the firm's survival beyond the level of return of investment (on which most of the strategic and economic literature is based).

There are differences between biological DNA and firm DNA; biological DNA is an encoded chemical structure with a physical connection, whereas firm DNA can be embedded in the firm's structure, procedures, and methods, including intangibles such as culture, trust, and relationships, among others. Nevertheless, most new firms are similar, as is the DNA that relates humans and other living entities. Small changes might just make a difference, although this is still a matter of discussion. Similarly, if we have a selfish gene (encrypted-embedded in our DNA), and if a human creation—such as a firm—reflects our DNA, the firm will be selfish. Classical economic theory might have common grounds with human DNA and provide a possible reason why developing environmental responsibility can be complicated.

Conclusions

Neither a firm nor an entrepreneur are spontaneous creations, a development process lies between a person that decides to develop a start-up and its level of success. An entrepreneur is the bridge between a business idea and its realization. In developing this idea, the entrepreneur will face an uncertain and responsive environment that makes it difficult to anticipate possible outcomes. Additionally, emergent properties arise from the firm's interrelations and actions. New configurations and alternatives will define the way in which the firm conducts its business: the firm's DNA. It is argued that the definition of the initial set of interrelations, procedures and standards that become the firm's DNA comprise the entrepreneur main of *raison d'être*.

The role of the entrepreneur is to define the firm's internal and external relationships, to face emergent events as the firm's DNA is defined, and to decide how to increase its chances of survival and success; unexpected results and new opportunities might arise in the process, which were discussed as well as: (inter)relations take place in both directions, -from top-down (downward causality) and bottom-up entrepreneur's core values, beliefs and actions (upward causality).

The firm's DNA can reflect the entrepreneur's core values, beliefs, and actions and have a major impact on the firm's early stages. The bottom-up view suggests the entrepreneur to watermark their view, but in an open system, feedback might require developing alternatives, emergent configurations. Firm failure or success comes after several trials, and if the firm succeeds, no major changes in the firm's DNA are expected to follow: its culture becomes rigid as time goes by.

If the firm establishes relations, internal process, and creates products that are harmonious with the environment from its initial stages, then, it may be possible to expect that these will be maintained by the firm as it evolves, since they are coded in its genes. The early evolution of the firm should matter not only in terms of profitability, but also in regard to its relationship with their environment. Sustainability has gained relevance, and it can be a valuable initial differentiator in a firm's DNA and its level of survival.

There is an implicit balance between micro and macrostates. Firms are also involved in this dynamic. If, from a top-down view, microstate conditions force the firm to be ecologically responsible, there is a high probability for a responsible firm to emerge. A firm's DNA might incorporate the conditions in which it was born in an interplay between the entrepreneur (bottom) and its environment (up) conditions. Bottom-up and top-down dynamics play an important role in the determination of the firm's viability, and by extension, the firm's willingness to become an environment-driven firm. Entrepreneurship is about bottom-up causation, where there is a direct impact on the firm's decisions, beliefs, and actions that will later emerge as culture, standards, and procedures. These actions can be constrained and directed by external factors in this dynamic interplay, including the feasibility of becoming a green firm.

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The Relationship Between Innovation, Financing and Entrepreneurship in Mexico's SMES

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Abstract

This paper aims to establish the relationship between financing, innovation and entrepreneurship in SMES in the State of Aguascalientes (Mexico), since it is considered one of the factors of success in companies; as well as financing is considered as one of the crucial elements for the growth and survival of these in a competitive environment, since it is considered that if SMES have greater financing, they have more opportunities to guide their actions to undertake within their activities, as entrepreneurship is considered the engine of growth and economic progress, as it generates employment and offers solutions. Innovation allows companies to achieve sustainable competitive advantages over time and represents a key element of economic growth. Access to external finance has been identified as one of the determinants of innovation, however disinformation is an obstacle in financial decision making when resources are sought to finance innovations. The literature on innovation and financing focuses mainly on large companies and on R & D funding. There is a significant gap in the behavior of micro, small and medium enterprises, whose universe is considered in this study.

Keywords: Innovation, financing and entrepreneurship.

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Introduction

Entrepreneurship is the engine of growth and economic progress, as it generates employment and offers solutions to the needs of the population. The degree of entrepreneurship in a country or region is conditioned by the environment in which the entrepreneurial activity is carried out since this environment can facilitate or discourage the implementation of new initiatives (Fuentelsaz, Gonzalez, & Maicas, 2015). Institutional Theory has become one of the most utilized theories to explain the results achieved by organizations in general and, in particular, by start-up companies, because when institutions consider themselves being part of the rules of the game, and (North, 1990) if the rules of the game are clear, the entrepreneurial activity will develop under more favorable conditions.

It should be noted that the relationship between a favorable environment for business development and the number of companies created is not linear, comparing the figures of the Global Entrepreneurship Monitor (measures entrepreneurship in the countries), with those of the World Bank study (measures how favorable is the environment for the creation of companies). It is observed that countries with more favorable environments are not necessarily those with higher degrees of entrepreneurship (The International Bank for Reconstruction and Development/World Bank, 2009); however, the sustainability of the start-up companies does show an important relationship with the quality of the environment of doing business.

Doing Business analyzes business regulations from the perspective of small and medium-sized businesses. In the 2016 edition, it captures different dimensions of the business climate in the 32 Mexican states through four indicators: opening a business, obtaining construction permits, registering property and enforcing contracts. According to the aggregate classification of the four areas analyzed, it is easier to do business in Aguascalientes than in any other state of Mexico (International Bank for Reconstruction and Development, 2016).

Innovation plays a fundamental role in the economic development of nations; therefore, the role of new companies is vital as they are responsible for introducing innovations in the market, which translates into new products and services (Schumpeter, 1934). In fact, one of the most important functions of new firms is to introduce innovations in the market in order to compete with existing firms and to achieve a sustainable competitive advantage (Baumol W., 2002). However, not all companies can be considered innovative since several are limited to imitate the behavior of others.

According to Schumpeter (1934), the entrepreneur is the bearer of innovation, defined as the introduction of new technical processes, new products and new sources of raw materials or new forms of industrial innovation organization. Another factor that can boost success in companies is that they should be supported from the earliest stages with financing in order to consolidate their projects. Innovation allows companies to achieve sustainable competitive advantages over time and represents a

key element of economic growth. In this regard, funding has often been mentioned as an important barrier to carrying out innovation activities.

Economic crises are constantly discussed in economics studies (Kalecki, 1968). Crises situations are characterized by low growth, recession or stagnation of the GDP (Kalecki, 1968). During 2008/2009, the world economy experienced its most severe financial crisis since the 1930s (IMF, 2009) The recession led to the collapse of some major financial institutions in Europe and in the us, which were rescued by their governments (Saridakis, 2012), forcing in some cases the partial nationalization of these, as well as the reformulation of the main fiscal and monetary reform programs (Saridakis, 2012). The effects of these crises have been deeply studied in the literature, and one of the observed characteristics is that entrepreneurship decreases during economic crises (Rüdiger, Peris-Ortiz, & Blanco-Gonzalez, 2014). Taking the right measures and adapting to the environment will condition business survival (Cowling, 2014) and will contribute to entrepreneurship (Davidsson & Gordon, 2016).

Some governments have promoted the creation of venture capital funds in order to boost development by offering advice and funding. Another mechanism promoted by the public sector is the creation of private and official institutions that offer finances or guarantees so that small entrepreneurs have the opportunity to access financing from traditional financial institutions. On the side of private institutions, the contributions of angel investing and venture capital funds can be very attractive to companies and usually makes it possible to grow at a much faster rate than the other financing schemes available. It is worth noting that access to these sources of financing is not widespread in the business world.

The lack of innovation and financing as business problems in Mexico has limited entrepreneurship, in this sense the main objective of this work is to analyze the relationship between innovation, financing and entrepreneurship SMES in Aguascalientes, for which a sample of 400 companies; given that there are very few articles that analyze these factors the main contribution of this study is the analysis and discussion of these elements in SMES in a developing country such as Mexico to guide entrepreneurs in making decisions to channel efforts as well the activities of greater impact in beneficial of the company and the development of public policies for the economic development

Theoretical Framework

Some literature distinguishes between the different types of entrepreneurship using a wide variety of terms: innovators or imitators (Schumpeter, 1934), productive or unproductive, oriented to high growth activities or not (Estrin, Korosteleva, & Mickiewicz, 2013), a formal or informal entrepreneur (Dau & Cuerdo-Cazurra, 2014), or entrepreneur by opportunity versus entrepreneur by necessity (Reynolds, y otros, 2005). However, despite the many existing classifications, new business initiatives have very

different consequences from the point of view of development and economic growth (Minniti, 2008).

Schumpeter (1934) described innovation as a result of an unexplained phenomenon related to the technical process and the market. In the 20th century, this way of looking at things changed and innovation was no longer considered as a result, but as a process involving different stages from technical development to the market, in a linear and hierarchical way. Hatchuel (1994) described innovation as a collective learning process, challenging individuals to their goals, projecting values and representations. In this sense, knowledge management is based in particular on the exchange of knowledge and organizational learning, which contributes to the development of innovations (Sahut, 2017). According to Bock & Kim (2002), knowledge sharing is considered as the foundation of knowledge management. Knowledge management affects organizations at four levels: processes, product, people and performance (Becerra, Gonzalez, & Sabherwall, 2004).

According to the Organization for Economic Co-operation and Development (OECD), there is a lot of entrepreneurship, but most of it is informal and not original, which explains the high rate of early mortality, according to the Global Entrepreneurship Monitor (GEM). These results indicate that, in order to boost the development of a quality enterprise in the region, the ability of entrepreneurs to innovate with scalable and higher value products or services must be improved (OCDE, 2009).

Innovation is established as the fundamental function of entrepreneurship, whether in an existing company or in a new company. This is the means by which entrepreneurs create new wealth-generating resources or increase existing resources with improved potential to produce wealth in the regions (Drucker, 2002). Creativity has been considered a precursor of innovation; which generally leads to the successful implementation of a creative idea (Unsworth & Luksyte, 2015). Creativity in the field of organizational theory is typically defined as “the generation or production of ideas that are both novel and useful” (George, 2007). Creativity is required not only to generate the initial idea for innovation but also for further development and adjustment thereof (Unsworth & Luksyte, 2015). The new ideas and opportunities that are adopted in companies make them organizations that can successfully face the challenges of today’s world. In the new competitive conditions of globalization and uncertainty, companies must strengthen the role of innovation, both in established companies and in the creation of new companies, to ensure their continuity in the market (Rangel Morales & Tinto Arandes, 2014).

Estrada, Garcia and Sánchez (2009) in their empirical study on the determinants of competitive success, of SMES in Mexico, reveal that companies with high performance give greater importance to innovation in products, processes and management. This result highlights the importance of innovation for the development of competitiveness, stimulation, creativity and efficiency. This study, from an empirical viewpoint, found that SMES with greater competitive success are those that strategically plan,

innovate in their processes and products, manage with a superior technological level compared to competitors in the same sector.

For Schumpeter (1934), entrepreneurs can remunerate all the productive factors and also obtain a profit as a result of their entrepreneurial activity. However, from time to time, this balance is interrupted thanks to innovation, which temporarily generates a series of extraordinary incomes until the competitors are able to imitate their products or services, which returns to the situation of competition. There are several investigations which focus on studying the characteristics of the entrepreneurs; in fact, the entrepreneurial process cannot be understood without the analysis of the protagonists (Baumol W., 2002). These characteristics can be included in two groups related to psychological or behavioral factors and those related to human capital and prior knowledge.

H1: The higher the level of innovation, the greater the level of entrepreneurship

Among the psychological characteristics is the less fear of failure and greater risk tolerance on the part of the entrepreneurs; all economic activity is subject to uncertainty, so knowing how to overcome it is essential, and tolerance to risk is a key element. Another psychological characteristic is being able to detect business opportunities; this characteristic has been defined as the most distinctive and fundamental among entrepreneurs (Venkataraman, 1997). On the side of human capital factors or prior knowledge, one of the most important factors is education; the most creative and innovative people are characterized by high intelligence, skill, interest in abstract thinking and curiosity to find general solutions to problems (Fuentelsaz & Montero, 2015).

These characteristics are more present in those with more formal education (Koellinger, 2008). Another factor is previous experience since it allows a better understanding of markets, technology, consumer problems and problem-solving processes (Shane, 2000). The complexity of innovation increases with the technological advance, so in order to bring new products or services to the market, it is necessary to know well what already exists (Fuentelsaz & Montero, 2015). Therefore, an essential human capital factor is the network of contacts (Schott & Sedaghat, 2014), since having contacts facilitates information and previous experiences. In addition, entrepreneurs can improve their creativity, access to advice, access to funding, and get closer to consumers and obtain information, which facilitates innovation (Schott & Sedaghat, 2014)

The highest quality entrepreneur tries to identify an opportunity from which to obtain a competitive advantage. However, this can only take place, in growth-oriented companies that create value for their customers and wealth for their founders (Hitt, Ireland, Sirmon, & Trahms, 2011). These entrepreneurs usually prepare their market entry in advance and usually do so in areas where they already have experience, which leads to lower failure rates and higher company growth (Liñan, Fernandez, &

Romero, 2013). When they start the new entrepreneurial activity, they tend to invest significant amounts of capital, create new jobs, export at higher rates, have greater growth prospects and are often more innovative (Reynolds, Bygrave, Autio, Cox, & Hay, 2003; Reynolds, Bygrave, Autio, Cox, & Hay, 2003).

On the contrary, lower-quality entrepreneurs are often forced to self-employment because they have no other work alternatives, are often less prepared and have less specific experience (Block & Sandner, 2009). These entrepreneurs have a lower opportunity cost and, therefore, will tend to exploit less profitable opportunities (Reynolds, et al., 2005), often operating marginal businesses (Vivarelli & Audretsch, 1998), with little job creation (Andersson & Wadensjö, 2007).

The existence of restrictions to access new financial resources tends to be a symptom of the deficiencies of companies, which serve as obstacles to the success and growth of new initiatives (Becchetti & Trovato, 2002). The credit limitation prevents new companies from being immersed in new projects, which increases their probability of failure (Mach & Wolken, 2011). The financing available to entrepreneurs is often one of the most debated topics. One of the main causes of controversy is the fact that financial institutions are subject to risk regulations that limit the possibility of offering loans to initiatives that have not demonstrated their ability to pay (Penfold & Vidal, 2011). Therefore, entrepreneurs have the need to finance the first stages of the company with their own resources and many times coming from family and friends.

Funding for innovation mainly focuses on large companies, especially in R & D, with a large gap in SMES (Garcia Perez de Lema, Barona Zuluaga, & Madrid Guijarro, 2013). The main problem perceived by IberoAmerican companies for their development is the financial situation of the company, given the inadequacy of a banking system that allows them to develop their financial management normally (CIFI/BID/Universita di Bologna/Inegi/Secretaria de Economia/Observatorio de la Pequeña y Mediana Empresa, 2003).

The use of debt is beneficial because the financing from this source is less expensive than the increase in capital, mainly due to the effect of debt on taxes as a result of the reduction of results, via financial expenses. This perspective is consistent with the theory of financial hierarchy over funding preferences (Hall, 2002). Myers (1984) and Aghion and Bolton (1992) stipulate that firms follow a line of preferences in terms of financing. According to these authors, the preferred source of funding is the retained benefits (internally generated resources) (Berger & Udell, 1998) Because the reliance on these resources maintains the maximum discretion of the managers of the company. The second source of financing in order of preference is debt financing. Indebtedness allows the a priori valuation of costs and implies a less loss of control than the issuance of new shares.

Finally, the third source of financing in order of preference is the issue of new actions. The reluctance of small businesses to share ownership through the issuance of new shares or the use of risk capital, with the aim

of maintaining independence in management, may lead to innovative companies preferring to use debt instead of capital to finance their investments (Frrel, 1999). However, although the first preference is for the use of internal resources, these are not always available due to fluctuations in dividend benefits and dividend policies (Casson, Martin, & Nasar, 2008).

H2: The higher the level of financing, the greater the level of entrepreneurship

Funding for innovative activity is not a trivial problem due to several reasons: (a) innovation entails new activities whose success is difficult to assess, and (b) often requires investments that do not involve the production of tangible assets or assets, preventing them from being easily used as collateral for obtaining funding sources (Baldwin & Johnson, 1995).

Lopez Salaberry states that “One of the historical difficulties for an entrepreneur has always been capital. Now that new funds have been formed, there is a very interesting opportunity. Although capital is always required, the entrepreneur now has to show greater capacity for execution, a clear vision and has to convince investors that Internet business will become real business” (Forbes Mexico, 2015).

The quest for the capital required to build a high-value company is a challenge. The level of investment of the ventures varies as well as the level of risk. The entrepreneur, his work team and his advisers will have to analyze the various ways of building the company, based on the resources available to them and the possibilities of obtaining financing or raising capital. In Latin American countries, relatives living abroad finance many businesses with their remittances; however, these businesses have a high mortality rate. This existing source of funding can be better channeled to generate more valuable entrepreneurship.

Innovation operates within an ecosystem of four main components: government, infrastructure, financing and community. The overall role of government should encompass the unification and improvement of all aspects of the innovation ecosystem. Foreign financial institutions, public, private or community, are key ingredients for business creation and growth. In order for start-ups to become larger enterprises, we must increase and integrate the different sources of financing (seed capital, state or federal subsidies, foreign investment, crowdfunding, innovation competitions, etc.). access to financing (Wood, Wilson, & Garcia, 2014).

Entrepreneurs can develop the knowledge acquired from the research and development of technology, other marketable products or services, but they need the financing to do so. Insufficient investment reduces the volume of innovation, as well as creating barriers to growth and competitiveness. Funding can take many forms and can come from family, friends, founders, government, foreign investment or angelic investors. According to a survey conducted by Ernst & Young and the G20, 72 percent of Mexican entrepreneurs stated that access to finance (especially venture capital) remains a major challenge for those starting new businesses. In general, any weakness

in any of the four key areas of the innovation ecosystem can prevent it. These areas are: government, community, infrastructure and financing.

Access to finance concerns tend to arise from what is referred to as an Bequity gap. When companies seek external finance the source will depend on the amount they are seeking to raise. For relatively small amounts normal financial intermediaries such as high street banks or existing social networks might be used. For larger amounts business angels provide capital.

Through public policies, the government can generate innovative mechanisms to offer financing opportunities to SMES. For example, organizations such as development banks have been created with the aim of promoting various seed capital funds and venture capital funds, and they serve a fundamental intervention not only for their creation but also for their administration in conjunction with the public sector. Some governments have promoted the creation of venture capital funds (institutions dedicated to investing in companies in their early stages of growth) to boost their development by offering financing and advice for a specific time.

These funds are open to private sector participation (Penfold & Vidal, 2011). The fact is that financing for entrepreneurs is a reality for any country and constitutes a challenge for policy makers. Governments interested in promoting entrepreneurship should focus on improving entrepreneurs' access to financing, streamline administrative procedures, promote entrepreneurship education, transfer technology, improve commercial and legal structure, ensure market opening, develop infrastructure, and promote cultural and social norms favorable to business activity.

When analyzing the factors that determine failure, it has hardly been taken into account the extent to which the quality of the entrepreneurship can influence it. It has been argued that higher-quality entrepreneurship is associated with greater wealth creation (Hitt, Ireland, Sirmon, & Trahms, 2011), greater aspirations of growth, greater profitability (Cassar, 2006) and higher levels of innovation (Block & Sandner, 2009). Consequently, it seems reasonable to assume that the probability of failure of these activities will be less than that faced by businesses whose sole purpose is mere subsistence. Productive entrepreneurship is the true engine of innovation and economic growth and can be associated with the discovery of good business opportunities, with the consequent increase of well-being (Fuentelsaz & Montero, 2015).

On the other hand, one of the key dimensions of trade and entrepreneurship is risk behavior. The trade involves decisions in conditions of uncertainty and traders can be seen as specialists who manage risk (Zaloom, 2004). An important issue in entrepreneurial literature is how entrepreneurs face risks. A traditional hypothesis is that entrepreneurs exhibit greater risk tolerance than non-entrepreneurs. However, empirical evidence provides mixed results on whether entrepreneurs show greater risk propensity (Stewart & Roth, 2001). The inconsistency between the empirical findings and the notion of greater risk propensity among entrepreneurs motivated new approaches to explain behavior. Busenitz and Arthurs (2006) argue that entrepreneurs can use emotion, propensity, and heuristics in their judgment, making them misperceive the amount of risk in the market. For example,

an individual may feel risk-averse but still behave in a risk-seeking manner because he misperceives the amount of risk in a given situation.

In Mexico, there are several institutions focused on supporting entrepreneurs by providing financing opportunities. For example, INADEM, CONACYT, and NAFIN offer financing through the “Entrepreneurs Fund” which provide resources and allows access to capital with other investors, to develop and consolidate businesses of high added value. In addition, it seeks to support technological, financial, and legal advice to strengthen the long-term competitive position of newly created companies based on the application of scientific and/or technological knowledge.

SMES are playing an important role in the global economy through the creation of jobs, products and services and innovation. However, despite their importance in the economy, they face many challenges, such as high costs to access to financial resources, poor access to long-term credits and little professionalism (Gasca, 2015).

H3: The higher the level of financing, the greater the level of innovation

Methodology

In order to respond adequately to the hypotheses raised in this empirical study, it was considered appropriate the use of a sample of 400 small and medium-sized enterprises in the state of Aguascalientes (Mexico). The sample was drawn from the Directory of the Business Information System of Mexico for the state of Aguascalientes, which had 5,194 companies registered in the month of December 2016. For the purposes of this empirical study, only those companies that had between 5 and 250 employees were considered; as a result, the number of enterprises in the business directory was reduced to 1,261 companies. In addition, the sample was randomly selected with a reliability level of 96% and a sampling error of $\pm 4.5\%$, obtaining a total sample of 400 companies. Finally, the survey was conducted through a personal interview with the managers of the 400 selected companies, and they were conducted during the months of January to April of 2017.

To measure innovation activities, managers were asked to indicate whether the company had carried out innovation activities during the previous two years. To measure the importance of innovations, managers were asked to evaluate product innovation, processes and management systems through 7 items (5 of those are shown in the table), which were measured through a five-point Likert scale ranging from 1 = not important to 5 = very important. This innovation scale was adapted from Zahra and Covin (1993), Kalantaridis and Pheby (1999), Frishammar and Hörte (2005) and Madrid-Guijarro, García and Van Auken (2009). In addition, the measurement of the financing variable consisted of 6 items, which was adapted from the ?? scale. For the measurement of entrepreneurship, the scale utilized was developed by Miller (1983). All of the items in these two scales were measured with a 5-point Likert scale ranging from 1 = total disagreement to 5 = total agreement.

Likewise, as a preliminary step to the analysis of the results obtained, reliability and validity of the three scales was assessed in this empirical study, using Confirmatory Factorial Analysis (CFA) and applying the maximum likelihood method with the EQS 6.2 software (Bentler, 2005; Byrne, 2006; Brown, 2006). Thus, the reliability of the scales was evaluated using Cronbach’s alpha and Composite Reliability (CR) (Bagozzi & Yi, 1988), and the validity was assessed through the Average Variance Extracted (AVE) (Fornell & Larcker, 1981). The analysis of reliability and validity took into consideration the recommendations of Chou *et al.* (1991) and Hu *et al.* (1992), with respect to the correction of the statistics of the theoretical model when it is considered that the normality of the data is present, and also by using robust statistics to provide a better fit of the data (Satorra & Bentler, 1988).

The CFA results are shown in Table 1 and indicate that the theoretical model has a good fit ($S-BX^2 = 813.2954$; $df = 265$; $p = 0.000$; $NFI = 0.824$; $NNFI = 0.856$; $CFI = 0.873$; $RMSEA = 0.072$); all items of related factors are significant ($p < 0.01$), and the size of all standardized factor loads are greater than the value of 0.60 (Anderson & Gerbing, 1988). Cronbach’s alpha and CR have a value greater than 0.70, and AVE has a value greater than 0.50 (Fornell & Larcker, 1981). These values indicate that there is sufficient evidence of reliability and convergent validity, which justifies the internal reliability of the two scales used (Nunnally & Bernstein, 1994; Hair *et al.*, 1995).

Table 1. Internal consistency and convergent validity of the theoretical model.

Variable	Indicator	Factorial loading	Robust t-value	Cronbach’s alpha	CR	AVE
Innovation	ACTIN1	0.710	1.000*	0.888	0.891	0.621
	ACTIN2	0.765	19.534			
	ACTIN3	0.824	15.489			
	ACTIN4	0.851	16.672			
	ACTIN5	0.785	14.87			
Financing	FINAL1	0.797	1.000*	0.898	0.898	0.596
	FINAL2	0.822	20.856			
	FINAL3	0.795	17.543			
	FINAL4	0.766	16.492			
	FINAL5	0.701	13.721			
	FINAL6	0.748	14.823			
Innovativeness	EMPI2	0.429	1.000*	0.641	0.662	0.407
	EMPI4	0.685	6.454			
	EMPI5	0.754	6.35			

Variable	Indicator	Factorial loading	Robust t-value	Cronbach's alpha	CR	AVE
Proactivity	PROA1	0.714	1.000*	0.832	0.847	0.487
	PROA2	0.755	15.788			
	PROA3	0.881	19.348			
	PROA4	0.642	13.151			
	PROA5	0.627	13.746			
	PROA6	0.515	8.63			
Risk taking	TR1	0.686	1.000*	0.825	0.825	0.486
	TR2	0.695	13.597			
	TR3	0.717	12.069			
	TR4	0.717	11.67			
	TR5	0.673	13.709			

S-BX² (df=265) = 813.2954; p < .0000; NFI= 0.824; NNFI= 0.856; CFI= 0.873; RMSEA= 0.072

^a = Parameters constrained to this value in the identification process

*** = p < 0.01

The discriminant validity assessment was performed using two tests. The first was the *confidence interval test* (Anderson & Gerbing, 1988), which states that with a 95% confidence interval none of the individual elements of the latent factors of the matrix contains the value of 1.0; and the second was Average Extracted Variance (AVE) (Fornell & Larcker, 1981), which states that the AVE between each pair of constructs is higher than its corresponding squared covariance. Therefore, according to the results obtained from both tests, it is possible to conclude that both measurements show sufficient evidence of discriminant validity of the theoretical model.

Table 2. Discriminant validity of the theoretical model.

Variables	Innovation	Financing	Innovativeness	Proactivity	Risk taking
Innovation	0.621	0.014	0.031	0.303	0.308
Financing	.0370 - .201	0.596	0.005	0.028	0.018
Innovativeness	.0810 - .273	.0190 - .123	0.407	0.080	0.042
Proactivity	.409 - .693	.0880 - .252	.172 - .396	0.487	0.297
Risk taking	.415 - .695	.068 - .204	.117 - .297	.417 - .673	0.486

The diagonal represents the Average Extracted Variance (AVE), while above the diagonal the part of the variance (The correlation to the chart) is shown. Below the diagonal, we present the estimated correlation of the factors with a 95% confidence interval.

Results

In order to answer the four research hypotheses presented in this empirical study, an analysis of the data was made through the structural equations model using the EQS 6.2 software (Bentler, 2005; Byrne, 2006; Brown, 2006), which analyzed the nomological validity of the theoretical model of market knowledge management and business performance by means of a Chi-square test. This analysis consisted of comparing the results obtained between the theoretical model and the measurement model (Anderson & Gerbing, 1988). In the present study, it was found that the differences between the two models are not statistically significant (Hatcher, 1994). Table 3 shows more in detail the results obtained.

Table 3. Results of the Structural Equation Model.

Hypotheses	Structural Relationship	Standardized Coefficient	Robust t-value
H1: The higher the level of innovation, the greater the level of entrepreneurship	Greater innovation Greater entrepreneurship	0.367	16.698***
H2: The higher the level of financing, the greater the level of entrepreneurship	Greater financing Greater entrepreneurship	0.249	15.6965 ***
H3: The higher the level of financing, the greater the level of innovation	Greater financing Greater innovation	0.214	3.296 ***

S-BX² (df=262) = 932.06 ; p < .0000; NFI= 0.798; NNFI= 0.822; CFI= 0.845; RMSEA= 0.080

*** = P < 0.01

Table 3 shows the results obtained from the application of the structural equations model, finding that, in respect to the hypothesis H_1 , the obtained result, $\beta = 0.367$, $p < 0.01$, indicates that innovative activities have a significant positive influence on the level of entrepreneurship in small enterprises in Mexico. As for the second hypothesis H_2 , the obtained result, $\beta = 0.249$, $p < 0.01$, indicates that the level of financing has a significant positive influence on the entrepreneurship level of small enterprises in Mexico. In regards to the third hypothesis H_3 , the result obtained, $\beta = 0.214$, $p < 0.01$, indicates that the level of financing has a significant positive influence on the level of SME innovation in Mexico.

Conclusion and Discussion

Based on the results obtained in this empirical study, it is possible to conclude the following findings. First, it is possible to conclude that the innovation activities carried out by SMES generate a higher level of entrepreneurship, this means that the innovative ideas of projects and services ACTIN4 and

the promotion of innovation in organizations ACTIN3 are the two variables that have the greatest influence on entrepreneurship. That is to say, SMES, generally within their innovation activities, focus their efforts to a greater extent on the implementation of ACTIN4 and ACTIN3 activities. However, evidence shows that active search for innovative ideas ACTIN1 and the acceptance of innovation by the management ACTIN2, are the two indicators that least explain the level of entrepreneurship for SMES.

In the financing component, the study provides evidence that higher levels of financing generate greater levels of entrepreneurship, and these serve as important indicators of risk capital for new companies and their growth FINAL2 and also of financing available from informal private investors for new and emerging companies FINAL3. These are the two indicators that have the highest level of influence in entrepreneurship. In contrast, financing from private financial entities FINAL5 and financing through entrepreneurs' own capital among new and growing enterprises FINAL6, are the indicators that have the lowest level of influence in this area. Regarding the entrepreneurship variable, the most influential predictors are the company's ability to identify new opportunities PROA3 and the company's ability to make its business vision a reality PROA2.

It is important to mention that this study has many limitations that need to be clarified, one of them is concerning the use of the Miller's entrepreneurial orientation scale, in which three (innovation, proactivity and risk taking) of the five dimensions were used, leaving out autonomy and aggressive competitiveness. Autonomy refers to the independent action of an individual or a team in launching an idea or a vision and carrying it through to completion. In other words, it is the capacity and willingness to decide freely for oneself to pursue market opportunities and for aggressive competitiveness, such as the tendency of a company to challenge its competitors in a direct and aggressive way in order to overcome the competitors of its sector.

In the case of family firms, it is more appropriate to use a scale where the dimensions of autonomy and competitive aggressiveness are measured by the fact that these companies usually get established in a less formal way than non-family companies and they tend to implement fewer control mechanisms, reducing the level of internal autonomy. In regards to the dimension of competitive aggressiveness, elements such as the profile of the people who have control of the company make it necessary to measure this element; therefore, future studies will require the use of other types of scales to corroborate the results obtained.

A second limitation is related to the survey, since it was applied only to managers and/or owners of small and medium-sized enterprises in the state of Aguascalientes (Mexico), whereby the results obtained may differ significantly with a different population. A third limitation of this empirical study is the collection of information since only qualitative variables were considered for the measurement of market knowledge management and business performance, so future studies will require the incorporation of quantitative variables or hard data to verify if they reach the same

results. A fourth and final limitation of this study is that most of the companies surveyed took into consideration that the information requested through the data collection instrument was considered as confidential, so the information provided by the selected companies does not necessarily reflect the reality in terms of their management of market knowledge and their level of business performance.

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Chapter 9

Identification of Strategic Sectors in the Socioeconomic Regions of Mexico

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Abstract

The aim of this study is to identify the strategic sectors that contribute most to economic growth, job creation and the social welfare of the population in each of the country's eight socioeconomic regions. This is performed based on the model of the Andalusia Innovation and Development Agency (2006). The aim is achieved by constructing composite indicators by region termed Regional Sector Development Indicators (in Spanish, *Índices de Desarrollo Sectorial a Nivel Regional*; IDESER) obtained with principal components analysis applied to a set of selected variables. In the regional sphere, the following secondary and tertiary sectors are notable given their strategic importance: food manufacturing; administrative and support services; transportation equipment manufacturing; chemical manufacturing; petroleum and coal products manufacturing; food, beverage, ice and tobacco merchant wholesalers; oil and gas extraction; and retail trade in supermarkets and department stores. The analysis presented in this study should serve as the basis for the design and application of public policies directed at the economic development of the country's economic regions by promoting the strategic sectors identified.

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Introduction

Each rural or urban community has its essence; its economic, social, political and religious preponderance. Global public policies are welcome and necessary, but they must be adapted to the context of each community. International or national economic models applied globally have not yielded good results, with marginalization, poverty and social and economic inequality having gradually increased in recent years. This study seeks to promote the establishment of efficient local public policies based on the study of the strategic sectors that contribute most to the stated development goals. This means that development should be based on the essence of the community and not the other way round; not by force, not through autistic public policies, not through public policies without any follow up, and not through global public policies.

The general aim of this study is to identify the strategic activities of the secondary and tertiary economic sectors that contribute most to economic growth, job creation and the social welfare of the population in each of the country's eight socioeconomic regions. These economic activities, which in what follows will be termed "sectors" for the purposes of this study, correspond to the subsectors identified in the North American Industry Classification System (NAICS Mexico/SCIAN, 2013), which are used by the Economic Censuses of the National Institute of Statistics and Geography (INEGI). The aim is achieved by constructing composite indicators by region termed Regional Sector Development Indicators (in Spanish, *Índices de Desarrollo Sectorial a Nivel Regional*; IDESER), obtained through principle components analysis applied to a set of selected variables based on the final results of the 2014 Economic Censuses (with information corresponding to the year 2013). Eight socioeconomic regions are identified in Mexico. The states, which they comprise, are listed below:

- Region 1, Northwest: Baja California, Baja California Sur, Chihuahua, Durango, Sinaloa and Sonora.
- Region 2, Northeast: Coahuila, Nuevo León, and Tamaulipas.
- Region 3, West: Colima, Jalisco, Michoacán, and Nayarit.
- Region 4, East: Hidalgo, Puebla, Tlaxcala, and Veracruz.
- Region 5, North Central: Aguascalientes, Guanajuato, Querétaro, San Luis Potosí, and Zacatecas.
- Region 6, South Central: Mexico City, Morelos, Estado de México.
- Region 7, Southwest: Chiapas, Guerrero, and Oaxaca.
- Region 8, Southeast: Campeche, Tabasco, Quintana Roo, and Yucatán.

The results of this study are presented for each specific region. This study contributes to establishing local public policies that salvage and emphasize the local essence.

Theoretical Framework

Local development as an alternative model

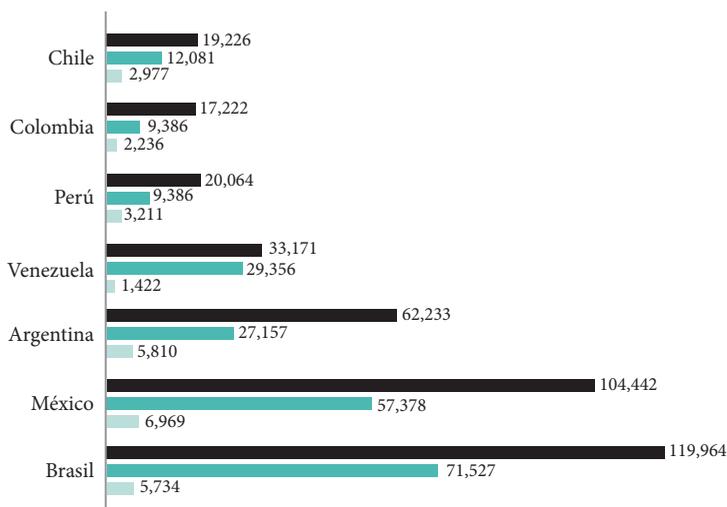
Economic models attempt to provide an answer to the great question posed by history's economic thinkers: What is development and how can it be achieved?. In the case of Mexico, from the late 1940s onwards, it adopted a protectionist economy with the Import Substitution Industrialization (ISI) model that aimed to create barriers to foreign trade. At the beginning of this model, in the 1950s, Mexico grew economically, according to Cárdenas (1996) at annual rates of 6.2%. The author also stresses that while there were strong fluctuations, in reality the common denominator during these years was the rapid growth of the economy, and that the country was still able to finance this itself. Within this model, the Stabilizing Development or Mexican Miracle stage occurred, a period identified between 1954 and 1970 (Tello, 2010: 66).

In spite of the above, the protectionist model entered its decline in the late 1960s. By this time the economy showed a deterioration of the system: public debt increasing at accelerated rates, overvaluation of the peso, the creation of monopolies and oligopolies, a black market in goods, low quality of Mexican products, and abandonment of the countryside, among others. Cárdenas (1996), rather than classing the 1963–1971 period as part of the so-called Mexican Miracle, terms it the period of high growth with structural weakness. The term Mexican miracle also makes little sense, because Mexico lived under an authoritarian system without freedom of expression, as exemplified by the events of the Tlatelolco massacre in 1968.

As a result, the following president, Luis Echeverría Álvarez, led a populist government in a pejorative sense related to the squandering of public funds to bring about clientelism and attempting to achieve the legitimacy of the government due to Echeverría's involvement in the events of the Tlatelolco massacre as Secretary of State. Echeverría's government justified its actions with the Keynesian economic model, thereby increasing debt to record levels during the 1970s and causing, together with the collapse in international oil prices during the 1980s, Mexico's worst economic crisis: the crisis of 1982. This trend occurred in all countries in Latin America, and the 1980s were branded the lost decade. The protectionism and populism justified by the Keynesian model had run their course (Levy, 2016). Figure 1 presents the evolution of foreign debt in the countries of Latin America. It can be seen that the decade of the 1980s was when foreign debt soared.

Figure 1. Evolution of foreign debt in Latin America (USD millions).

Gráfica 1. Evolución de la deuda externa en América Latina (millones de dólares)



Fuente: elaboración propia con datos de Eric Toussaint, “La crisis de la deuda en América Latina en los siglos XIX y XX”, contribución escrita para el Seminario Internacional “América Latina y el Caribe: salir del *impase* de la deuda y del ajuste”, Bruselas, 2003, p. 5.

Source: Martínez & Reyes (2012: 42).

In the late 1980s and early 1990s the neoliberal model emerged with greater emphasis. In 1989, the National Institute of Economics organized a conference titled “Latin American Adjustment: How Much Has Happened?” where John Williamson presented a summary of what he considered to be the main reforms presented. The conference included the participation of international organizations such as the International Monetary Fund, the World Bank and the main financial institutions of the United States, and this was called the Washington Consensus. This document includes 10 economic policy measures of a neoliberal nature proposed so that Latin American countries could escape the economic crisis in which they found themselves, thereby strengthening neoliberalism.

Mexico had already begun to partake in this economic model since the public sector structural adjustment in 1983 and its joining of the General Agreement on Tariffs and Trade (GATT) in 1986. These were some of the measures that the President of Mexico, Miguel de Madrid, implemented to escape the economic crisis that he had inherited from his predecessors. However, he had little choice, given that the International Monetary Fund imposed the condition that Mexico abandon its protectionist policy and accept trade liberalization, thereby opening its borders to foreign trade, in exchange for debt restructuring and opening new credit lines.

So far the neoliberal model has produced negative and counterproductive effects on the world economy. The model is considered to be in decline, especially following the effects of the mortgage crisis resulting from a lack of financial system controls in more developed countries such as

the United States and from financial speculation. In summary, in recent decades we have faced huge disappointments from all economic models that it has been attempted to establish because the results have been the opposite of those expected: economic and social inequality, marginalization, wealth concentration, the informal economy, countryside-city migration, migration to other countries, deterioration of natural resources, unemployment, corruption, lack of transparency, lack of accountability, incomplete democracy, among other problems, have all increased.

This has resulted in the rise of alternative development models, including those with a LOCAL approach. López (2010: 16) mentions that the two great challenges currently faced by the new and old development proposals are:

1. Making a global economic project viable in the middle of a time of profound planetary crisis in the financial, ecological and social spheres,
2. The deep inequality and high levels of poverty, as never seen before throughout the world, especially in so-called developing countries.

The author stresses the urgency of analyzing alternative notions of development and the appearance of models/proposals as ways to resist hegemony in undeveloped contexts. Leaving aside the extremely serious problem of corruption in Mexico, in the present day we must focus on coming up with new strategies that result in the promotion of economic and social development from the local perspective.

Methodological Approaches on Strategic Sectors

According to the National Institute of Entrepreneurs (INADEM), strategic sectors “are those that offer opportunities for development and consolidation and are currently exploited. Furthermore, they maintain potential for long-term, sustainable growth” (INADEM, 2014). Diverse methodological approaches have been employed to identify strategic activities or sectors for economic development. These approaches include the following:

- *Methodology for Identifying Strategic Opportunities for Development:* This methodology proposed by the ITESM, by Moreira, Guerra, Campos and Villarreal (2009), constitutes INADEM’s reference methodology for identifying strategic sectors. It is based fundamentally on the identification of the most relevant activities that make up the clusters or groupings that are considered to contribute the most to the country’s economic development, based on the analysis of percentage structures and sub-indicators related to total employment, total gross output, census gross value added and the total value of fixed assets.
- *Analysis based on the information of the input–output matrix:* In works such as that of González, Díaz and Leal (2010), the input–out-

put matrix is used in conjunction with methods such as Rasmussen's to identify the key sectors, based on their linkages with other economic activities. The application of this methodology requires having access to this matrix, which is not the case for some states such as Yucatán. This type of analysis is limited to the so-called input–output methodology proposed by Leontief (1941), in which the totality of all production and distribution operations that take place in an economy in a certain period are identified based on these accounting tables. This methodology is described in works such as Cardenete (2010).

- *Use of principle components analysis for establishing development indicators:* Studies such as the one by the Andalusia Innovation and Development Agency (2006) have been performed under this methodology, in which development indicators are constructed based on the analysis of the combined effect of the economic variables of interest, which constitutes the distinctive trait of this methodology.

Under this methodological approach, strategic sectors are considered to contribute to three main aspects, according to the Andalusia Innovation and Development Agency (2006): economic growth, job creation, and social welfare of the population. This is why it is necessary for federal, state or municipal governments to identify them, because promoting and supporting them has a decisive effect on the economic progress of the region. Some of the criteria for attempting to specify the sectors most eligible to be termed strategic are:

- Availability of a relevant entrepreneurial fabric, with a significant presence in the territorial sphere under consideration.
- Active participation in the technological development and progress of a region.
- Significant contribution to economic growth with a high share of the Gross Domestic Product.
- Exertion of a notable influence on the evolution of the labor market in terms of job creation.
- Being important in a region or territory based on their own, inherent characteristics.
- Ability of the sector to carry over to its other auxiliary activities (Andalusia Innovation and Development Agency, 2006: 3).

This latter approach comprises the main methodological reference of this study and is described in greater detail in the following sections.

Methodology

Statistical Methods and Techniques Employed

The following process was performed in this study:

1. The simple indicators were identified that contribute to the three main aspects mentioned previously: economic growth, job creation and the social welfare of the population, based on official state or national sources for the states and regions of the country.
2. A composite indicator was created (Regional Sector Development Indicator, IDESER) from the simple indicators mentioned in the specific aim above for each sector in each region of the country, by means of the principle components method.
3. A ranking of the economic sectors was produced for each region, based on the importance of IDESER, which allows the strategic sectors in the secondary and tertiary sectors that have the greatest overall influence on each region to be identified.
4. The situation presented by the regions related to the simple indicators associated with the main strategic sectors identified was analyzed.

The principle components analysis (PCA) method suggested by authors such as Johnson (2000) and Uriel and Aldás (2005) was used to construct composite indicators of regional economic development (IDESER). Principle components analysis (PCA) is a multivariate statistical technique classified among the dimension simplification or reduction methods and is applied when there is a large set of variables with quantitative data in order to obtain a smaller number of variables comprising a linear combination of the original variables, which are termed principal components or factors, whose subsequent interpretation permits a simpler analysis of the problem under study.

This method consists of identifying a subset of new uncorrelated variables (principle components) that in lesser number explain a significant percentage of the variance associated with the original variables, such that the first component explains the greatest percentage of this variance, and the following components the remaining variance, such that an indicator can be constructed from the first component or components, the value of which reflects the set of original variables based on the use of a covariance or correlation matrix. In this study, the correlations matrix was used, considering the heterogeneous nature of the original variables.

Classification of Economic Activities

In order to identify the strategic sectors, the data on the economic subsectors included the 2014 Economic Censuses by INEGI were used, which in turn are based on the 2013 version of the North American Industry Classification System (NAICS Mexico/SCIAN) (INEGI, 2013). As mentioned pre-

viously, this classification served as the basis for identifying the strategic sectors, which were those that obtained the highest values on the IDESER indicators in the results of this study.

Results

Results of the Principle Components Analysis (PCA)

Table 1 below summarizes the results of applying PCA in the construction of the composite indicators (IDESER).

Table 1. Summary of the results of applying PCA in the construction of the composite indicators.

Level or region	KMO	Bartlett's test (p-value)	Number of components	Percentage of variance explained
Northwest	0.806	0.000	1	81.44
Northeast	0.690	0.000	1	77.45
West	0.815	0.000	1	77.62
East	0.764	0.000	1	71.64
North Central	0.823	0.000	1	80.33
South Central	0.685	0.000	1	69.96
Southwest	0.700	0.000	2	85.04
Southeast	0.771	0.000	1	79.45

Source: Prepared by the authors.

In all cases, the Kaiser-Meyer-Olkin (KMO) sampling adequacy coefficient was satisfactory, while the p-value for Bartlett's Test reveals that the relationship between the variables was adequate for the application of the PCA model. It is important to note that in all cases, except the Southwest region, one component was identified with an associated explained variance of 67% or greater, which turns out to be a satisfactory percentage. In the specific case of the Southwest region, two components were found, such that the indicator was generated from the weighted average of these first two components, using the explained variances as the weighting factors. The values of the indicators presented in the tables of results (presented in Section 4 of this work) were obtained by transforming the indicator to a scale of 1 to 100. The higher these indicators are for each strategic sector, the more influence they have on that economic activity in the region or nationally.

Results by Socioeconomic Region

Northwest Region

The Northwest region comprises the states of Baja California, Baja California Sur, Chihuahua, Durango, Sinaloa and Sonora with a total area of 753,190 km², which represents 38.4% of national territory (INEGI, 2001). The region includes the capital cities of Mexicali, Baja California; La Paz, Baja California Sur; Chihuahua, Chihuahua; Durango, Durango; Culiacán, Sinaloa; and Hermosillo, Sonora. According to the information of the National Population Council (Conapo, 2013), in June 2013 the total population of the region was 15'247,445 people (12.9% of the national total), of whom 49.8% were men and 50.2% were women. According to the results of the National Survey of Occupation and Employment (ENOE) by INEGI, as of the second quarter of 2013 the economically active population was 6'874,362 people (13.2% of the national total and 45.1% of the total population of the region), of whom 94.6% were employed (INEGI, 2015). See Table 2.

According to the values of the Regional Sector Development Indicator (IDESER), the three main strategic subsectors in the Northwest region were transportation equipment manufacturing; food manufacturing; and computer and electronic product manufacturing. These three subsectors represent 16.1% of employed people, 26.1% of wages, 22.8% of revenue, 34.2% of gross output and 26.4% of the census gross value added (CGVA) of the secondary and tertiary subsectors of the region. Meanwhile, the 10 main strategic subsectors represent 42.4% of employed people, 48.9% of wages, 56.7% of revenue, 54.8% of gross output and 54.2% of the census gross value added of the region, which reflects their importance in regional socioeconomic development.

Northeast Region

The Northeast region comprises the states of Coahuila, Nuevo León and Tamaulipas with a total area of 295,796 km², which represents 15.1% of national territory (INEGI, 2001). The region includes the capital cities of Saltillo, Coahuila; Monterrey, Nuevo Leon; and Ciudad Victoria, Tamaulipas. According to the information of the National Population Council (Conapo, 2013), in June 2013 the total population of the region was 11'292,502 people (9.5% of the national total), of whom 49.6% were men and 50.4% were women. According to the results of the National Survey of Occupation and Employment (ENOE) by INEGI, as of the second quarter of 2013 the economically active population was 5'189,645 people (10% of the national total and 46% of the total population of the region), of whom 94.1% were employed (INEGI, 2015). See Table 3.

According to the values of the Regional Sector Development Indicator (IDESER), the three main strategic subsectors in the Northeast region were transportation equipment manufacturing, administrative and sup-

port services, and primary metal manufacturing. These three subsectors represent 19.8% of employed people, 26% of wages, 23.9% of revenue, 29% of gross output and 24.2% of census gross value added of the secondary and tertiary subsectors of the region. Meanwhile, the 10 main strategic subsectors represent 33.1% of employed people, 44.8% of wages, 52% of revenue, 60.5% of gross output and 52.6% of census gross value added of the region, which reflects their importance in regional socioeconomic development.

West Region

The West region comprises the states of Colima, Jalisco, Michoacán and Nayarit with a total area of 170,786 km², which represents 8.7% of national territory (INEGI, 2001). The region includes the capital cities of Colima, Colima; Guadalajara, Jalisco; Morelia, Michoacán; and Tepic, Nayarit. According to the information of the National Population Council (Conapo, 2013), in June 2013 the total population of the region was 14'148,916 people (12% of the national total), of whom 48.9% were men and 51.1% were women. According to the results of the National Survey of Occupation and Employment (ENOE) by INEGI, as of the second quarter of 2013 the economically active population was 6'341,509 people (12.2% of the national total and 44.8% of the total population of the region), of whom 95.5% were employed (INEGI, 2015). See Table 4.

According to the values of the Regional Sector Development Indicator (IDESER), the three main strategic subsectors in the West region were food manufacturing; groceries, food, beverage, ice and tobacco merchant wholesalers; and beverage and tobacco product manufacturing. These three subsectors represent 9.5% of employed people, 16.5% of wages, 24% of revenue, 25.9% of gross output and 26.7% of census gross value added of the secondary and tertiary subsectors of the region. Meanwhile, the 10 main strategic subsectors represent 43.5% of employed people, 42.5% of wages, 57.5% of revenue, 47.5% of gross output and 51.5% of census gross value added of the region, which reflects their importance in regional socioeconomic development.

East Region

The East region comprises the states of Hidalgo, Puebla, Tlaxcala and Veracruz with a total area of 130,960 km², which represents 6.7% of national territory (INEGI, 2001). The region includes the capital cities of Pachuca, Hidalgo; Puebla, Puebla; Tlaxcala, Tlaxcala; and Xalapa, Veracruz. According to the information of the National Population Council (Conapo, 2013), in June 2013 the total population of the region was 18'039,874 people (15.2% of the national total), of whom 48.3% were men and 51.7% were women. According to the results of the National Survey of Occupation and Employment (ENOE) by INEGI, as of the second quarter of 2013 the economically active population was 7'531,844 people (14.5% of the national

total and 41.8% of the total population of the region), of whom 95.9% were employed (INEGI, 2015). See Table 5.

According to the values of the Regional Sector Development Indicator (IDESER), the three main strategic subsectors in the East region were transportation equipment manufacturing; petroleum and coal products manufacturing; and chemical manufacturing. These three subsectors represent 4.2% of employed people, 24.3% of wages, 36.9% of revenue, 45.8% of gross output and 27.5% of census gross value added of the secondary and tertiary subsectors of the region. Meanwhile, the 10 main strategic subsectors represent 32% of employed people, 45.9% of wages, 70.3% of revenue, 70.5% of gross output and 64% of census gross value added of the region, which reflects their importance in regional socioeconomic development.

North Central Region

The North Central region comprises the states of Aguascalientes, Guanajuato, Querétaro, San Luis Potosí and Zacatecas with a total area of 184,485 km², which represents 9.4% of national territory (INEGI, 2001). The region includes the capital cities of Aguascalientes, Aguascalientes; Guanajuato, Guanajuato; Querétaro, Querétaro; San Luis Potosí, San Luis Potosí; and Zacatecas, Zacatecas. According to the information of the National Population Council (Conapo, 2013), in June 2013 the total population of the region was 12'709,258 people (10.7% of the national total), of whom 48.7% were men and 51.3% were women. According to the results of the National Survey of Occupation and Employment (ENOE) by INEGI, as of the second quarter of 2013 the economically active population was 5'485,309 people (10.6% of the national total and 43.2% of the total population of the region), of whom 94.8% were employed (INEGI, 2015). See Table 6.

According to the values of the Regional Sector Development Indicator (IDESER), the three main strategic subsectors in the North Central region were transportation equipment manufacturing; food manufacturing; and petroleum and coal products manufacturing. These three subsectors represent 11.2% of employed people, 19.8% of wages, 31.2% of revenue, 39.8% of gross output and 22.1% of census gross value added of the secondary and tertiary subsectors of the region. Meanwhile, the 10 main strategic subsectors represent 36.2% of employed people, 42.3% of wages, 54.4% of revenue, 56.4% of gross output and 45.7% of census gross value added of the region, which reflects their importance in regional socioeconomic development.

South Central Region

The South Central region comprises the states of Mexico City (previously Distrito Federal), México and Morelos with a total area of 28,709 km², which represents 1.5% of national territory (INEGI, 2001). The region includes the national capital and the cities of Toluca, México and Cuer-

navaca, Morelos. According to the information of the National Population Council (Conapo, 2013), in June 2013 the total population of the region was 27'132,141 people (22.9% of the national total), of whom 48.5% were men and 51.5% were women. According to the results of the National Survey of Occupation and Employment (ENOE) by INEGI, as of the second quarter of 2013 the economically active population was 12'417,581 people (23.9% of the national total and 45.8% of the total population of the region), of whom 93.9% were employed (INEGI, 2015). See Table 7.

According to the values of the Regional Sector Development Indicator (IDESER), the three main strategic subsectors in the South Central region were credit intermediation and related activities; administrative and support services; and electric power generation, transmission and distribution.

These three subsectors represent 19% of employed people, 33.9% of wages, 11.9% of revenue, 25.5% of gross output and 34.5% of census gross value added of the secondary and tertiary subsectors of the region. Meanwhile, the 10 main strategic subsectors represent 34% of employed people, 56.1% of wages, 43.2% of revenue, 56.9% of gross output and 62.2% of census gross value added of the region, which reflects their importance in regional socioeconomic development.

Southwest Region

The Southwest region comprises the states of Chiapas, Guerrero and Oaxaca, with a total area of 230,642 km², which represents 11.8% of national territory (INEGI, 2001). The region includes the cities of Tuxtla Gutiérrez, Chiapas; Chilpancingo, Guerrero; and Oaxaca, Oaxaca. According to the information of the National Population Council (Conapo, 2013), in June 2013 the total population of the region was 12'602,086 people (10.6% of the national total), of whom 48.6% were men and 51.4% were women. According to the results of the National Survey of Occupation and Employment (ENOE) by INEGI, as of the second quarter of 2013 the economically active population was 4'953,358 people (9.5% of the national total and 39.3% of the total population of the region), of whom 97.3% were employed (INEGI, 2015). See Table 8.

According to the values of the Regional Sector Development Indicator (IDESER), the three main strategic subsectors in the Southwest region were petroleum and coal products manufacturing; food, beverage, ice and tobacco merchant wholesalers; and chemical manufacturing. These three subsectors represent 3.4% of employed people, 18.7% of wages, 45% of revenue, 54.7% of gross output and 26.7% of census gross value added of the secondary and tertiary subsectors of the region. Meanwhile, the 10 main strategic subsectors represent 44.4% of employed people, 46% of wages, 73.9% of revenue, 74.5% of gross output and 60.7% of census gross value added of the region, which reflects their importance in regional socioeconomic development.

Southeast Region

The Southeast region comprises the states of Campeche, Quintana Roo, Tabasco and Yucatán, with a total continental area of 164,680 km², which represents 8.4% of national territory (INEGI, 2001). The region includes the cities of Campeche, Campeche; Chetumal, Quintana Roo; Villahermosa, Tabasco; and Mérida, Yucatán. According to the information of the National Population Council (Conapo, 2013), in June 2013 the total population of the region was 7'222,832 people (8.4% of the national total), of whom 49.1% were men and 50.9% were women. According to the results of the National Survey of Occupation and Employment (ENOE) by INEGI, as of the second quarter of 2013 the economically active population was 3'102,237 people (6% of the national total and 43% of the total population of the region), of whom 95.3% were employed (INEGI, 2015). See Table 9.

According to the values of the Regional Sector Development Indicator (IDESER), the three main strategic subsectors in the Southeast region were oil and gas extraction; administrative and support services; and chemical manufacturing. These three subsectors represent 11.2% of employed people, 49.2% of wages, 59.2% of revenue, 69.7% of gross output and 82.9% of census gross value added of the secondary and tertiary subsectors of the region. Meanwhile, the 10 main strategic subsectors represent 46.1% of employed people, 64.2% of wages, 77.8% of revenue, 83.5% of gross output and 89.7% of census gross value added of the region, which reflects their importance in regional socioeconomic development.

Table 2. Ranking of strategic subsectors of the Northwest region ordered from higher to lower based on IDESER.

Subsector	Employed Pop.	%	Wages	%	Revenue	%	Gross output	%	CGVA	%	IDESER	Position
336	229,243	7.4	25,352.95	12.8	275,192.17	13.7	292,902.36	21.2	93,551.21	15.9	100.0	1
311	119,575	3.8	6,558.53	3.3	139,493.54	7.0	137,759.19	9.9	38,100.50	6.5	42.8	2
334	154,041	4.9	19,604.32	9.9	42,479.61	2.1	42,397.47	3.1	23,232.88	4.0	36.3	3

The subsectors of economic activity are listed below:

Code	Description
336	Transportation equipment manufacturing
311	Food manufacturing
334	Computer and electronic product manufacturing

Source: Prepared by the authors with data from: INEGI (2014); North American Industry Classification System, SCIAN (2013) and the results of the study.

Table 3. Ranking of strategic subsectors of the Northeast region ordered from higher to lower based on IDESER.

Subsector	Employed Pop.	%	Wages	%	Revenue	%	Gross output	%	CGVA	%	IDESER	Position
336	251,915	9.1	25,386.73	11.2	407,866.10	14.5	418,015.48	17.6	103,385.08	12.0	100.0	1
561	258,785	9.3	25,464.91	11.3	55,652.34	2.0	55,544.11	2.3	39,548.11	4.6	48.8	2
331	40,240	1.4	7,989.21	3.5	210,345.99	7.5	216,238.08	9.1	64,927.76	7.5	44.5	3
The subsectors of economic activity are listed below:												
Code	Description											
336	Transportation equipment manufacturing											
561	Administrative and support services											
331	Primary metal manufacturing											

Source: Prepared by the authors with data from: INEGI (2014); North American Industry Classification System, SCIAN (2013) and the results of the study.

Table 4. Ranking of strategic subsectors of the West region ordered from higher to lower based on IDESER.

Subsector	Employed Pop.	%	Wages	%	Revenue	%	Gross output	%	CGVA	%	IDESER	Position
311	134,955	5.4	9,677.72	8.8	162,117.33	10.9	155,572.19	16.2	52,087.21	13.5	100.0	1
431	73,874	3.0	5,649.34	5.1	126,118.63	8.5	36,393.97	3.8	22,359.44	5.8	48.1	2
312	27,870	1.1	2,855.96	2.6	68,938.36	4.6	57,677.65	6.0	28,899.27	7.5	40.1	3

The subsectors of economic activity are listed below:

Code	Description
311	Food manufacturing
431	Groceries, food, beverage, ice and tobacco merchant wholesalers
312	Beverage and tobacco product manufacturing

Source: Prepared by the authors with data from: INEGI (2014); North American Industry Classification System, SCIAN (2013) and the results of the study.

Table 5. Ranking of strategic subsectors of the East region ordered from higher to lower based on IDESER.

Subsector	Employed Pop.	%	Wages	%	Revenue	%	Gross output	%	CGVA	%	IDESER	Position
336	57,996	2.5	10,217.68	8.5	214,917.85	10.9	197,896.86	13.0	63,319.58	12.6	100.0	1
324	8,598	0.4	7,097.17	5.9	332,255.66	16.8	332,690.34	21.9	23,310.39	4.6	99.2	2
325	30,014	1.3	11,900.93	9.9	180,588.98	9.1	167,082.06	11.0	51,223.98	10.2	90.4	3

The subsectors of economic activity are listed below:

Code	Description
336	Transportation equipment manufacturing
324	Petroleum and coal products manufacturing
325	Chemical manufacturing

Source: Prepared by the authors with data from: INEGI (2014); North American Industry Classification System, SCIAN (2013) and the results of the study.

Table 6. Ranking of strategic subsectors of the North Central region ordered from higher to lower based on IDESER.

Subsector	Employed Pop.	%	Wages	%	Revenue	%	Gross output	%	CGVA	%	IDESER	Position
336	146,748	6.1	15,786.36	11.8	336,952.97	16.6	339,236.81	21.3	62,974.51	12.4	100.0	1
311	117,296	4.9	6,672.99	5.0	144,274.91	7.1	143,324.05	9.0	41,046.53	8.1	50.8	2
324	5,464	0.2	4,055.98	3.0	151,631.12	7.5	151,468.16	9.5	8,052.53	1.6	30.0	3

The subsectors of economic activity are listed below:

Code	Description
336	Transportation equipment manufacturing
311	Food manufacturing
324	Petroleum and coal products manufacturing

Source: Prepared by the authors with data from: INEGI (2014); North American Industry Classification System, SCIAN (2013) and the results of the study.

Table 7. Ranking of strategic subsectors of the South Central region ordered from higher to lower based on IDESER.

Subsector	Employed Pop.	%	Wages	%	Revenue	%	Gross output	%	CGVA	%	IDESER	Position
522	256,849	4.3	54,592.22	11.1	16,739.91	0.4	535,977.16	12.7	355,217.95	18.0	100.0	1
561	775,323	13.1	65,035.11	13.3	177,112.45	3.9	177,098.20	4.2	126,341.18	6.4	86.1	2
221	96,508	1.6	46,881.91	9.6	348,179.06	7.6	359,269.87	8.5	200,770.06	10.2	82.5	3

The subsectors of economic activity are listed below:

Code	Description
522	Credit intermediation and related activities
561	Administrative and support services
221	Electric power generation, transmission and distribution

Source: Prepared by the authors with data from: INEGI (2014); North American Industry Classification System, SCIAN (2013) and the results of the study.

Table 8. Ranking of strategic subsectors of the Southwest region ordered from higher to lower based on IDESER.

Subsector	Employed Pop.	%	Wages	%	Revenue	%	Gross output	%	CGVA	%	IDESER	Position
324	3,522	0.3	2,532.07	6.9	216,152.47	29.8	213,427.34	41.1	11,755.38	7.1	100.0	1
431	37,114	2.8	3,129.09	8.6	57,882.10	8.0	18,842.09	3.6	11,572.74	7.0	49.5	2
325	3,213	0.2	1,183.58	3.2	51,900.72	7.2	51,906.86	10.0	20,675.45	12.5	48.4	3

The subsectors of economic activity are listed below:

Code	Description
324	Petroleum and coal products manufacturing
431	Food, beverage, ice and tobacco merchant wholesalers
325	Chemical manufacturing

Source: Prepared by the authors with data from: INEGI (2014); North American Industry Classification System, SCLAN (2013) and the results of the study.

Table 9. Ranking of strategic subsectors of the Southeast region ordered from higher to lower based on IDESER.

Subsector	Employed Pop.	%	Wages	%	Revenue	%	Gross output	%	CGVA	%	IDESER	Position
211	30,341	2.4	29,012.95	36.7	890,172.62	53.2	891,928.32	62.6	783,634.33	78.3	100.0	1
561	103,035	8.3	7,675.10	9.7	20,112.50	1.2	20,088.60	1.4	12,255.19	1.2	10.7	2
325	5,585	0.4	2,235.94	2.8	80,663.72	4.8	80,436.43	5.6	33,489.71	3.3	7.6	3

The subsectors of economic activity are listed below:

Code	Description
211	Oil and gas extraction
561	Administrative and support services
325	Chemical manufacturing

Source: Prepared by the authors with data from: INEGI (2014); North American Industry Classification System, SCIAN (2013) and the results of the study.

Conclusions

In the regional sphere, the strategic importance of the following activities or strategic sectors of the secondary and tertiary sectors are of note: food manufacturing; administrative and support services; transportation equipment manufacturing; chemical manufacturing; petroleum and coal products manufacturing; food, beverage, ice and tobacco merchant wholesalers; oil and gas extraction; and retail trade in supermarkets and department stores. This study is a tool for identifying activities or sectors that have a strong influence in terms of economic growth, job creation and the social welfare of the population. It should therefore serve as the basis for promoting public policies directed at the economic development of the country's economic regions by promoting the strategic sectors identified, as well as for monitoring and evaluating the results of implementing these policies, which must include the design and implementation of education policies aimed at producing the highly qualified human resources required to boost the strategic sectors identified.

In particular, in the analysis of the strategic sectors, the following was observed: The importance of constructing the IDESER with other indicators lies in the fact that, in contrast with studies based on a single indicator (employed population, revenue, value added), five basic indicators are taken into account to determine the influence of each economic activity. Nevertheless, analysis by simple indicators also allows us to identify what is occurring with each of these activities or sectors so that the actions implemented by the government, universities, technology centers, companies, and civil society are aimed at improving the situation of the employed population in cases of low productivity. It is no longer possible to continue with the same trends year after year, simply "sailing with the tide" of public policies and the actions of the other key actors. It is necessary to implement effective measures that provide social welfare through better employment opportunities or the creation of companies that boost the productivity and competitiveness of the country and its regions.

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The Relationship Between Business Sustainability, ICT and Innovation in Mexican Small Business

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Abstract

Information and Communication Technologies (ICT) have made significant contributions in business innovation and wealth generation for organizations, societies and nations. The concept of sustainability has evolved over the last three decades and has become an essential issue for companies. So they face greater challenges, especially in developing countries, where culture and preferences for tradition over innovation and sustainable development increase pressure on costs. Today, it is impossible to conceive a company that does not depend on innovation and does not offer products or services that are innovative and involve technology. Management must understand the current position of the organization in its sustainability efforts. Management attention is constantly needed to effectively identify and prioritize key issues, formulate and implement appropriate objectives and strategies, and address each priority. Innovation is understood as a companion and complement of sustainability. Companies that

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pursue sustainability can grow over time. The approach relies, for example, on the organization's ability to innovate and adapt to changing conditions. Information and Communication Technologies (ICT) must be added to the sustainability equation because without it, companies would be unable to develop sustainability models, and we could not speak of a global trend towards sustainability. technology is important to convey information and knowledge in today's markets. It is therefore highly important to study the relationship between innovation and sustainability and show the effects of this relationship

Keywords: *Business Sustainability, Information and Communication Technologies (ICT), Innovation, Small Businesses.*

Introduction

Integrating the idea of sustainability into marketing decisions is becoming increasingly necessary. From the perspective of commercialization, being socially responsible means not only getting involved in the problems of society but also making sustainable marketing decisions to minimize resource consumption and alter consumer behavior towards sustainable development (Serbănică *et al.*, 2015). In other words, the concept of sustainability has evolved over the last three decades (Kramar, 2014) and has become an essential issue for companies (Le Roux & Pretorius, 2016), as demonstrated by Kiron (2012). Therefore, implementing sustainable marketing has become a new challenge for marketers, one that involves, on the one hand, researching the needs, desires and expectations of consumers and, on the other hand, developing the capacity of a company to meet these expectations more effectively than the competition (Serbănică *et al.*, 2015).

This is how innovation becomes a fundamental success factor for companies and organizations (Fraj *et al.*, 2015, Mahmoud *et al.*, 2016) and a decisive factor in the creation of new enterprises (Khajeheian, 2013), allowing existing companies to survive in competitive markets (Khajeheian, 2016, Khajeheian & Tadayoni, 2016) by adding value to the common functioning of enterprises worldwide. Today, businesses face greater challenges, especially in developing countries, where culture and preferences for tradition over innovation and sustainable development increase pressure on costs, make differentiation of one's products difficult, and pose a threat of easy substitution (Carayanis *et al.*, 2015).

However, for a company to innovate and achieve sustainability, these two objectives must be pursued in the context of a market that fluctuates rapidly, and for this, technology is needed. Chesbrough (2010) noted that technological advances force organizations to change, and thus, business models must respond to the dynamics of industry, the environment, and so on. In this case, technology transfer agents play important roles in transforming scientific knowledge into marketable innovative products.

Hence, there is a growing tendency to link innovation and sustainability and harmonize their relationship. A KPMG survey in 2008 found

that 47.7% of companies think sustainability and corporate responsibility are important conductors for organizational innovation (KPMP International, 2008), showing the relationship between innovation and sustainability. Without any doubt, technology is important to convey information and knowledge in today's markets. It is therefore highly important to study the relationship between innovation and sustainability and show the effects of this relationship.

Currently, most executives respond to emerging problems with a mix of initiatives without any vision or global sustainability plan (Lubin & Esty, 2010). Additionally, they face increasingly complex sustainability challenges that the isolated individual efforts of the organization are insufficient to address (Ryan *et al.*, 2012). Thus, the purpose of this article is to identify the incentives needed to enable these companies, which tend to work in isolation, to respond successfully to the challenges of competitive markets. Today, it is impossible to conceive a company that does not depend on innovation — that does not offer products or services that are innovative and involve technology. The present article seeks to show the connections between these concepts.

Theoretical Framework

In a survey, Kiron *et al.* (2012) found that 67% of respondents among 2,800 managers and executives believe that sustainability is critical to organizations in achieving competitive advantage in competitive markets and that 70% view the issue of sustainability as a key factor in management. Thus, organizational sustainability is an immediate concern for companies, as, given the increased orientation towards sustainable development in recent years, the implementation of sustainable marketing is essential (Serbănică *et al.*, 2015). In particular, organizations that take sustainable development into account realize the following benefits (Hopkins, 2009: 23):

- a. An improved image of the company and brand;
- b. Cost savings;
- c. Competitive advantage;
- d. Employee satisfaction, better morale and retention;
- e. Innovation in products and services;
- f. Process innovation and innovation with regard to the business model;
- g. New sources of income or cash flow;
- h. Effective risk management; and
- i. Improved relations with stakeholders.

Recently, literature has highlighted the notion of the triple bottom line, whereby an organization is judged by its performance in financial, social and environmental areas (Fauzi *et al.*, 2010), thus changing the way sustainability (e.g., stock price, dividends) and accounting performance (e.g., return on equity and assets) are measured (Perrot, 2015). It is now

also suggested that environmental management and social justice be considered, as these generate value for society (Dumitru *et al.*, 2015)

Sustainability can thus be broken down in different ways, as it relates to specific types of capital and to the set of all types of capital combined. Dumitru *et al.* (2015) argue that a sustainable organization should not focus on one type of capital at the expense of another (for example, financial capital at the expense of social capital) precisely because a sustainable organization creates social value that includes various forms of capital, such as social, financial, environmental, etc.

Hockets (2001, 1999) recognizes the importance of each type of capital in sustainability but indicates that it is more important to understand how they relate to each other. This allows companies to pursue strategies that relate to all aspects of sustainability. Such strategies must encompass environmental efficiency, financial performance and/or social productivity (Perrot, 2015). That is why prior to any planning, management must understand the current position of the organization in its sustainability efforts. Management attention is constantly needed to effectively identify and prioritize key issues, formulate and implement appropriate objectives and strategies, and address each priority (Bonn & Fisher, 2011).

One type of classification suitable to companies is internal versus external issues. Internal issues in turn are classified into strengths and weaknesses, while external issues are classified into opportunities and threats. In this way, high-priority issues will drive the strategic sustainability agenda of an organization, as it must progressively address both the positive and negative aspects of sustainability if it wishes to realize its vision of a sustainable organization (Perrot, 2015). All of this is with a view to formulating the strategic frame of reference used to address sustainability.

Perrot (2015) states that once strategic issues have been identified, classified, and prioritized, the strategic framework of the organization - containing the vision, mission, arrangement of strategic sustainability issues in terms of priority, and objectives and strategies of the organization - is developed. Although a vision of sustainability can change and evolve over time, preparation of an agreement on an acceptable vision is an important step on the path to sustainability. Given such a frame of reference, the following relevant solutions of the company can be pursued (Benn *et al.*, 2011: 139):

- a. Provide solutions and knowledge to help clients live a more sustainable life at home;
- b. Use natural resources sustainably throughout the value chain;
- c. Minimize the carbon footprint of all operations related to the company;
- d. Assume social responsibility and act as a good global and local citizen; and
- e. Be transparent to all stakeholders, communicating more with clients and co-workers.

However, to dig deeper, the original sustainability model contains a set of six distinct phases that can be used to classify an organization's approach to sustainability at a given time (Dunphy *et al.*, 2007):

1. *Rejection.* Senior managers of these organizations take the attitude that ecological and social resources exist to be exploited by the organization for immediate economic gain. In terms of human sustainability, employees are considered "industrial cane forages". From the ecological point of view, managers disregard any destructive environmental impact of the organization's activities and expect the community to pay the costs of any remediation that occurs.
2. *Lack of response.* This usually results from a lack of awareness or ignorance rather than an active opposition to adopting a broader corporate ethic than financial gain. Human resource strategies, if any, focus primarily on creating and maintaining a compatible workforce. Whenever possible, community problems are ignored, and negative effects on the environment of the organization's activities are ignored. Thus, many of the true costs of the organization's activities are outsourced.
3. *Fulfillment.* This focuses on reducing the risk of penalties for failing to meet minimum standards as an employer or producer. Senior managers emphasize being a "decent employer and corporate citizen" by ensuring a safe and healthy workplace and avoiding environmental abuses that could lead to litigation or strong community action directed at the company.
4. *Efficiency.* This reflects a growing awareness on the part of managers that there are real benefits to be gained by proactively instituting sustainability practices. Human resources and environmental policies and practices are used to reduce costs and increase efficiency in the following ways:
 - Systematic investment in training and development to build a more skilled labor force, which is considered a means of increasing productivity and efficiency.
 - Introduction of new technologies to increase the efficiency of the use of resources and reduce carbon emissions, water consumption, energy consumption, etc.
 - Redesign of production and distribution processes to minimize delays and avoid duplication of activities.
 - Redesign of products and packaging to progressively reduce and eliminate waste.
 - a. Improvement in the quality of products and services to add value.

While movements towards sustainability may involve additional costs, they can also have significant benefits in terms of reducing unnecessary costs and generating new revenue directly or indirectly. This is the beginning of making sustainability an integral part of a business.

1. *Strategic proactivity*. This moves the organization along the path of sustainability, making sustainability a central element of the company's business strategy. The focus is on innovation.
2. *The sustainable corporation*. In this final phase, senior executives and most of the members of the organization have strongly internalized the ideology of working for a sustainable world. Its fundamental commitment is to facilitate the emergence of a society that supports the ecological viability of the planet and its biodiversity and also contributes to fair and equitable social practices and human realization.

This version of the model includes clear statements of the overall objective of each phase, the dominant business opportunities, typical actions that organizations take in pursuing their goals and realizing their opportunities, and finally, the value that can be added to the organization and potential sources of savings achieved by eliminating various types of waste.

Sustainability is then understood as a matter of care and partnership - a partnership between the people within the organization and between the people and the organization. This partnership is based on mutual care: that people care about each other, that people care about the organizational impact of their actions, and that the organization is designed and operated in a way that shows the care of people inside and around the organization (Westelius *et al.*, 2013). Everyone is concerned about the economic, social, and environmental value of sustainability.

In the other hand, innovation is understood as a companion and complement of sustainability. While innovation is independent of sustainability, it is also indispensable to it, as innovation enables sustainability policies to be pursued. Thus, the relationship is crucial to the three cornerstones - *economic*, *social*, and *environmental* - of sustainability. This approach requires management to think about organizational performance and planning in three important dimensions rather than just one. It also introduces a longer-term profitability perspective. This broader perspective on the performance and balance of an organization will be more successful because it fosters greater efficiency, making the company more competitive, and generates innovations to achieve profitability over time (Tyson, 2010).

Thus, innovation becomes the indispensable prerequisite for the profitability of the company. The connection between innovation and profitability is implicit in a series of innovation strategies identified by Reinmoeller and van Baardwijk (2005):

1. Knowledge management
2. Exploration
3. Cooperation
4. Entrepreneurship

That is why strategic proactivity, which is part of the traditional model of sustainability (step 5), is said to involve a focus on innovation. “Corporate citizenship” initiatives are used to build stakeholder support and introduce innovative, quality products that are environmentally safe and healthy (Dunphy *et al.*, 2007). Hence, many have observed that companies that pursue sustainability can remain in business and even grow over time. The approach relies, for example, on the organization’s ability to innovate and adapt to changing conditions (Kjellberg & Werneman 2000). Therefore, according to the information presented before it is possible to raise the first hypotheses:

H1: The greater the level of sustainability of companies, the greater the level of innovation

Information and Communication Technologies (ICTs) must be added to the sustainability equation because without it, companies would be unable to develop sustainability models, and we could not speak of a global trend toward sustainability. A good example of the use of technology to achieve sustainability is PepsiCo, which saw an opportunity to introduce technologies that would join the exhaust pipes of French fryers. A plant in Leicester, England, cooks approximately 350,000 tons of potatoes each year. The new technology saves a substantial amount of water in the plant by condensing the exhaust steam and returning 80 percent of water used back to the operation of the plant. The technology also extracts cooking oil from the production process and prepares it for reuse. Savings at the Leicester plant, as a result of this initiative, could exceed \$1 million annually. Although the immediate impact of this initiative is local, the accumulated savings and the reduced impact on the environment that would result from applying this concept elsewhere will be substantial (Stanford, 2011).

In addition, it is argued that efficiency, the 4th element of the traditional sustainability model, can be pursued as follows (Dunphy *et al.*, 2007):

1. Systematic investment in training and development to build a more skilled labor force, which is considered a means of increasing productivity and efficiency.
2. Introduction of new technologies to increase the efficiency of the use of resources and reduce carbon emissions, water consumption, energy consumption, etc.
3. Redesign of production and distribution processes to minimize delays and avoid duplication of activities.
4. Redesign of products and packaging to progressively reduce and eliminate waste.
5. Improvements in the quality of products and services to add value.

The author specifies that each step is essential before continuation to the next step. The result is an organization systematically structured to

achieve sustainability. In particular, the second step emphasizes the introduction of new technologies to increase the efficiency of resource use and reduce carbon emissions, water use, and energy consumption. In this way, technology is indispensable to the implementation of the sustainability model. Thereby, according to the information presented above it is possible to raise the second hypothesis:

H2: The greater the level of TICs of companies, the greater the level of innovation.

Methodology

In order to give an answer to both hypothesis raised in this empirical research, a quantitative study was made in small businesses from the State of Aguascalientes (Mexico), taking into account as a referential framework the 2016 Business Directory from the Business Information System of Mexico for the State of Aguascalientes, which registered 6,345 business in January 2016. Likewise, for the purpose of this empirical research there were taking into account only those enterprises which had between 2 and 250 employees by the application of this survey, whereby the population which was the object of this research was reduced only to 1,246 small business. Moreover, in order to determine the sample was considered a reliability level of 95% and a maximum error from $\pm 4.5\%$ leaving a total of 345 businesses.

Furthermore, the sample of 345 small businesses was selected random wise from the total of 1,246 existing enterprises, and was applied to the same number of enterprises receiving the same amount enquiries which were sent. Besides, a questionnaire was designed and applied to the 345 small business, selected through a person to person interview to the manager and / or the owner in order to collect the information related to the organization's activities of sustainability, the ITC applied in this kind of enterprises and the activities of innovation in products, processes and management systems. The instrument used to collect the information was applied between March and May 2016 obtaining the 100% of the answers.

Moreover, in order to measure business sustainability of was considered relevant to use the scale developed by Gadenne *et al.* (2012), which uses 7 factors: 1) Environment Management; 2) Customer focus; 3) Product innovation; 4) Process and employee effectiveness; 5) Internal processes improvement; 6) Social responsibility; and 7) Improvement of cash flow and finance, measured by a 5 point Likert scale where 1 = total disagreement to 5 = total agreement as limits. In addition, this scale has often been used by researchers, academics and professionals in the field of sustainability, since it has showed a high consistency and validity in similar contexts to the one that has been analyzed in this research (Parisi, 2013; Lu *et al.*, 2016; Morioka & de Carvalho, 2016).

Likewise, in order to measure innovation, managers were asked to state if business innovation activities had been made during the past two

years, thus in order to measure the importance of innovation, managers were asked to assess the innovation in products, processes and management systems through seven items in a five point Likert scale where 1 = Not important and 5 = Highly important as limits, being adapted by Zhara and Covin (1993), Kalantaridis and Pheby (1999), Frishammar and Hörte (2005) and Madrid-Guijarro, García and Van Auken (2009). Lastly, for the measurement of information and communication technologies a scale developed by "" which works with a seven item Likert scale where 1 = Total disagreement and 5 = total agreement as limits.

In addition, it was considered relevant to apply a Confirmatory Factor Analysis (CFA), in order to evaluate the reliability and validity of the business sustainability scales, ICTs and innovation, using the software EQS as a maximum likelihood method (Bentler, 2005; Brown, 2006; Byrne, 2006). The reliability was assessed through Cronbach Alpha and the Composite Reliability Index (CRI) proposed by Bagozzi and Yi (1988), and the values obtained from these indexes were superior to 0.7 which indicates the existence of reliability and justifies the inner reliability of the three used scales. Likewise, the results are presented in the table of contents 1 and show that the model fits the statistical data. ($S-BX^2 = 1,950.425$; $df = 887$; $p = 0.000$; $NFI = 0.764$; $NNFI = 0.845$; $CFI = 0.854$; $RMSEA = 0.079$).

As an evidence of the convergent validity, results in the application of CFA suggest that all items from the business sustainability, innovation and ITC are significant ($p < 0.01$), the size of the standardized factorial loads were superior to 0.6 just as Bagozzi and Yi (1988) suggest and Variance Extracted Index (VEI) of each pair of constructs from the theoretical model have a superior value than 0.5 as Fornell and Larcker suggest (1981) These results found through the CFA sadistic analysis, show the existence of an excellent statistical adjustment from the theoretical model analyzed in this empirical research, the same results are shown in detail in table of content 1.

Table 1. Internal consistency y convergent validity of the theoretical model.

Variable	Indicator	Factorial Loading	Robust t-Value	Cronbach's Alpha	CRI	EVI
Environment Management (F1)	PAA1	0.956	1.000	0.973	0.973	0.839
	PAA2	0.967	65.993			
	PAA3	0.940	46.846			
	PAA4	0.927	33.404			
	PAA5	0.890	24.475			
	PAA6	0.874	20.127			
	PAA7	0.852	17.436			
Customer Focus (F2)	PEC1	0.918	1.000	0.948	0.939	0.794
	PEC2	0.837	17.016			
	PEC3	0.933	16.374			
	PEC4	0.874	15.452			
Product Innovation (F3)	PIP1	0.901	1.000	0.941	0.941	0.761
	PIP2	0.847	19.970			
	PIP3	0.898	17.765			
	PIP4	0.874	14.349			
	PIP5	0.841	13.411			
Process and Employee Effectiveness (F4)	PEP1	0.846	1.000	0.942	0.942	0.730
	PEP2	0.799	20.829			
	PEP3	0.878	13.230			
	PEP4	0.906	11.717			
	PEP5	0.874	11.181			
	PEP6	0.819	10.273			
Internal Processes Improvement (F5)	PMP1	0.871	1.000	0.926	0.915	0.729
	PMP2	0.844	15.323			
	PMP3	0.880	13.129			
	PMP4	0.820	12.166			
Social Responsibility (F6)	PRS1	0.923	1.000	0.944	0.939	0.794
	PES2	0.926	28.592			
	PRS3	0.884	30.403			
	PRS4	0.828	22.518			

Variable	Indicator	Factorial Loading	Robust t-Value	Cronbach's Alpha	CRI	EVI
Improvement of Cash Flow and Finance (F7)	PMF1	0.823	1.000	0.949	0.951	0.831
	PMF2	0.905	1.000			
	PMF3	0.974	21.738			
	PMF4	0.937	14.832			
Business Sustainability	F1	0.577	2.660	0.958	0.835	0.505
	F2	0.619	2.528			
	F3	0.621	2.629			
	F4	0.703	2.577			
	F5	0.758	2.647			
	F6	0.715	2.655			
	F7	0.629	2.546			
Information and Communication Technologies	TEI5	0.905	1.000	0.928	0.957	0.882
	TEI6	0.984	3.027			
	TEI7	0.926	3.011			
Product Innovation (F8)	PIN1	0.792	1.000	0.826	0.827	0.705
	PIN2	0.885	5.390			
Process Innovation (F9)	PRI1	0.851	1.000	0.816	0.822	0.697
	PRI2	0.819	9.323			
Management System Innovation (F10)	MSI1	0.820	1.000	0.877	0.894	0.738
	MSI2	0.914	12.743			
	MSI3	0.840	13.548			
Innovation	F8	0.820	13.211	0.886	0.849	0.655
	F9	0.914	12.743			
	F10	0.840	13.548			

$S-BX^2$ (df = 887) = 1950.425; $p < 0.000$; NFI = 0.764; NNFI = 0.845; CFI = 0.854; RMSEA = 0.079

^a = Parameters limited to that value in the identification process.

*** = $p < 0.001$.

The analysis of the discriminant validity from business sustainability scales, innovation and ITC was performed by two essential tests. On the one hand, *the confidence interval test* proposed by Anderson and Gerbing (1988) was considered and establishes that with a 95 % confidence interval, none of the individual elements out of the three main factors form the correlation matrix has a value of 1.0. On the other hand, the variance extracted test proposed by Fornell and Larcker (1981) was used and it states

that the VEI between each pair of constructs must be higher than its corresponding squared covariance. Thus, according to the results of the application from the CFA it is possible to state the both tests show the enough discriminant validity evidence of the analyzed theoretical model, which they can be better appreciated in the table of content 2.

Table 2. Discriminant validity of the theoretical model.

Variables	Business Sustainability	Information and Communication Technologies	Innovation
Business Sustainability	0.505	0.122	0.027
Information and Communication Technologies	0.199 – 0.499	0.882	0.079
Innovation	0.075 – 0.259	0.097 – 0.465	0.655

The diagonal represents the Extracted Variance Index (EVI), whereas above diagonal the part of the variance is shown (correlation). Below diagonal the estimation of factors correlation is depicted with a confidence interval of 95%.

Results

In order to give an answer to both hypotheses raised in this empiric research, it was considered relevant to use the structural equation modeling with the support of the EQS 6.2 software (Bentler, 2005; Byrne, 2006; Brown, 2006). Likewise, the nomological validity of the theoretical model was analyzed through the Chi-Square test, by which the results were compared between the theoretical model and the measure model, obtaining statistically non-significant results, this fact allows to give an explanation to the relationships observed between the main constructs (Anderson & Gerbing, 1988; Hatcher, 1994). Table of content 3 shows clearly the results.

Table 3. Results of the structural equation modelling.

Hypothesis	Structural Relationship	Standardized Coefficient	Robust t-Value
H₁ : Higher business sustainability level, higher innovation level.	Business Sustainability → Innovation	0.220***	21.064
H₂ : Higher information and communication technologies level, higher innovation level.	Information and C.T. → Innovation	0.405***	12.762

S-BX² (df = 887) = 1,954.691; p < 0.000; NFI = 0.763; NNFI = 0.844; CFI = 0.854; RMSEA = 0.079

*** = P < 0.001.

Table of content 3 shows the results of the application of the structural equation modeling, so these results show accordingly to hypothesis H_1 ($\beta = 0.220$, $p < 0.001$), businesses sustainability has a positive significant influence in innovation activities of the small businesses of Mexico. According to hypothesis H_2 , results ($\beta = 0.405$, $p < 0.001$) indicate that information and communication technologies also have a significant positive influence in innovation activities of the small businesses. Therefore, it is possible to conclude that both a higher level of business sustainability and a higher level of use of the information and communication technologies, generate a greater level in activities of innovation of the small businesses of Mexico.

Conclusion and Discussion

According to the results of this research in checking the literature and the statistical analysis, is important to highlight, on the one hand, that business sustainability is a key piece of companies' development in general, because this allows the level of innovation to have significant improvement effects. As a reference to this assertion, Serbănică *et al.*, (2015), in his research describes that sustainability is an important element for the decisions that are generated within a company, since it has an effect in the market whereas for entrepreneurs this is still a relevant challenge to consider, besides, decision-making is an attitude that the whole company must have in order to keep the status and the permanence in the world of business.

In this sense, considering that statistic results show how a value of 0.220, $p < 0.00$, value that approves the first hypothesis, as well shows that business sustainability has a positive significant influence in activities of innovation of small business in Mexico, so according to what Hopkins (2009: 23) describes, this suggest that entrepreneurs of these business of Mexico in particular the small ones, have in mind how important is to count with a better corporative image, costs control, competitive advantages, happiness among their coworkers, interest in product and service innovation, better management control, and a greater interest in the healthy relationship with the parties involved in their business models.

Nevertheless, despite of having statistically positive and significant results of the relationships between business sustainability and innovation activities in this kind of small business in Mexico, Dunply *et al.* (2007), warns that entrepreneurs first have to consider some aspects that come naturally such as rejection, lack of answer from behalf of employees, fulfillment, efficiency, integration of productivity strategies, and the interest of the corporate area for sustainability. Likewise, Reinmoeller and Baardwijk (2005), consider that there must be taken into account several strategies of innovation such as knowledge management, the diagnostic of the company, governing body and their practices, as well as the entrepreneurship from behalf of the CEO or manager responsible of the company.

Likewise, besides of taking into account the importance that entrepreneurs give in this research to the relationship between business sustainability and innovation, which is clearly shown in the statistic results through the reliability on the instrument and in proving the first hypothesis with the structural analysis ($\beta = 0.220$, $p < 0.001$), so it is important to highlight another factor that allows a significant improvement in innovation activities within small business in Mexico is the use of Information and Communication Technologies (ICT), as it was proposed in the second hypothesis raised in this research ($\beta = 0.405$, $p < 0.001$), and in addition allows to dimension in small business how innovation activities are more influenced by the use of ICT than the business sustainability.

Additionally, this research has various limitation which is important to point out, one of them is the size of businesses since there were taking into account only those that had between 5 and 250 employees when the survey was made, hence forth in next reaches it would be relevant to take in the sample those businesses that have less than 5 employees, which represent more than the 60% of the businesses in Mexico, in order to bear out the results obtained in this research. The second limitation is the fact that the survey was only applied to small business in the state of Aguascalientes, Mexico, whereby in future researches it would be necessary to apply it in other states, and even in other countries in order to corroborate if results are the same.

A third limitation of this empiric research are the three scales that were used in order to measure the business sustainability, information and communication technologies and innovation, since there were considered 7 dimensions or factors in order to measure business sustainability; 3 dimensions or factors to measure innovation; and 7 items to measure information and communication technologies, hence forth in future researches it would be necessary to take into account different scales in order to corroborate the results. A fourth limitation is that only there were taken into account qualitative variations, in order to measure the three constructs, hence in future studies it would be highly relevant to use quantitative variables in order to prove whether significant differences exist or not in the results.

A fifth limitation is that this survey was only apply to managers and / or owners of small business, so it was assumed in this research that either managers and owners have a general knowledge about business sustainability, the use of information and communication technologies, and activities of innovation that the organization did, hence forth in future researches, would be important that the same survey should be apply also to workers and employees in order to corroborate if the results are the same. Lastly a sixth limitation deals with a high average of the small business surveyed considered that the asked information was confidential, so that all the information did not reflected necessarily the reality that small business live accordingly to business sustainability, the use of information and communication technologies and innovation, so the results do not reflect the reality of this kind of businesses.

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Chapter 11

Fashion Consciousness in Small and Medium-Sized Enterprises

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Abstract

The present work, determine whether people who made clothing purchases in SMES, small businesses with up to 10 employees working at the turn of selling clothes, presents the typology of brand awareness whose characteristics are in the scale Chengezai (Chengezai, Manillall, & Lawrence, 2015), and further, if this typology occurs equally among men and women, for it an instrument was applied that measured people who bought in retail stores, we used a survey the southeast region of Coahuila carrying out a discriminant analysis with sex variable, and the variable brand awareness finding so the women who value highest in items construct brand awareness, with this is considered that not only the department stores have consumers, in which the brands are representative as important in the purchase, but the Customer behavior is generated in the same way as those who buy in department store.

Keywords: SMES, *fashion*, *strategic marketing*.

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Introduction

Some works have been carried out in the SMEs, for its ability to generate employment, since they are considered as generators of wealth, however, knowledge of marketing, within this type of companies has tangentially taken jobs in this type of business, so it is considered necessary to try to integrate basics developed through analysis of how these aspects in order to structure better strategies in marketing. In the field of marketing it is dispensable know the costumer because it has been found that there is a need to investigate the user behavior within SME's buying clothes and I must consider interest of the subject in the scientific context; where there are previous studies analyzing generally the consumer behavior both men and women, about clothes.

In 2014, Chenedzai, Manillall and Lawrence conduct research where the main objective was to examine the typology of buyers of Generation Y, considering the variables age and fashion clothing. They used as a tool a survey and their sample was 230 subjects belonging to Generation Y. They used Exploratory Factor Analysis to identify the types of buyers. And they applied the Kruskal-Wallis test to examine the influence of age on the types of buyers identified. The study identified seven types of buyers that are applicable to millennials: Conscious of fashion, Hedonist, Aware of the brand, innovative, Conscious of quality, Undecided, Loyalty to the brand. The value of the studies is that these results can allow sellers to understand and predict the buying behavior of the generation Y, facilitating the development and implementation of more effective marketing strategies (Chenedzai, Manillall, & Lawrence, 2014).

Vincent-Wayne and Cathy Bakewell, environmental factors significantly influence buyers of Generation Y. The study in 2003 which examined the decisions of consumers using the scale Consumer Styles Inventory (CSI) proposed by Sprotles and Kendall (1986). This study uses the CSI as a basis for targeting Generation Y, discussing the implications of the results for retailers and marketers catering to consumers of Generation Y (Bakewell & Mitchell, 2003). Consumers have a variety of styles making purchasing decisions. Sprotles and Kendall they mention eight basic characteristics of these styles and develop a description of consumer styles to measure them empirically. They do the validation through a factor analysis. The research results are discussed and suggest a description of styles in consumer education, consumer research and family financing (Sprotles & Kendall, 1986).

The dimensions and profiles, the decision in young boys and adult's consumers in China, are observed using a model modification decision styles consumer and data were obtained in five Chinese universities. The results are then compared with similar studies using the results of American and Korean studies. The results mention that the dimensions of consumer decision styles are similar in these three countries (Fan & Xiao, 1998). Hafstrom, Chae and Chung in 1992 developed a study to identify the decision styles of young consumers in Korea and if these

styles are similar to those of young consumers in the United States. They used an instrument based on previous research in the United States, and it was administered to 310 students of the University in Korea. It was conducted a factor analysis and reliability of the scale used Cronbach's alpha. The results indicate the generality of some styles of consumer decision style (Hafstrom, Chae, & Chung, 1992).

Another study analyzing consumers among Singaporeans and Australians is that of Leo, Bennett, and Hartel (2005). The paper mention that, the cultural dimensions influencing the decision styles of consumers, since marked differences between the two populations. The results suggest that some consumer decision styles differ to cultural values of consumers. The managerial implications and future research directions are discussed. To become a successful business requires hard work because you have to build brand loyalty, and give satisfaction with the products to customers. It was in 2002 when Korea was developed a study was to identify loyal customers of the clothing brand regarding their purchasing behavior, considering the demographic variable. Also, the post-purchase results of loyal brand customers based on clothing attributes were investigated.

The survey was based on a pilot study and included the measurement of brand loyalty, consumer decisions and demographics. The sample consisted of 328 surveys applied to adult women in the city of Seoul, Korea. The results showed that, in buying shirts, 24.4 percent of the sample were loyal brand customers, 42.2 percent loyal customers of the brand in the purchase of pants, and 38.7 percent were loyal customers of the brand when buying of jackets. Multiple discriminant analysis showed that some variables are significant for profiles loyal customers of the brand. It also was determined that prices are an important variable when deciding the purchase (O & Fiorito, 2002).

Parker, Hermans and Schaefer (2004) in the United States in 2004, applied an investigation to analyze the fashion consciousness among the Chinese, Japanese and American teenagers. The purpose of the study was to examine the similarities and differences in attitudes about fashion through these three segments. The results show that there are significant differences in fashion sense between Chinese teenagers and their Japanese counterparts and us. At the same time, American and Japanese adolescents show similarities in their attitudes about fashion. The results can support the idea of segments differences in the fashion sense between developed and less developed countries. While there are opportunities for sellers exploit the similarities fashion segments, an understanding of the idiosyncrasies underlying motivations teen fashion in each segments.

Analyzing brand awareness has been formed as part of studies Chengedzai, since the scale generated by it and its partners a major construct is one that is called brand awareness, because as exposed Donnelly (2006) this is a feature that is related to brands, and global communication companies should consider as an essential part either in products and services development brand awareness.

Theoretical perspective

The existence of marketing structural that have SMES, they need to adapt their strategies and their competitiveness within the segment in which they develop. This is why SMES in the clothing sector, whether it is a man's or a woman's, have had strong changes in their globalization and in the acceleration of technological changes have presented challenges in the aspect of purchasing behavior in consumers. Current SME reports provided by FAEDPYME indicate that it is necessary to provide information for SMES so that they can to challenge their problems with knowledge derived from their own studies in the main competitive factors in which they develop. The actions that can be considered apart from technological innovation are actions of the current segment, in which marketing has generated typologies of consumers that have allowed, generate scales that this work considers should also be applied to SMES.

According to Raúl G. River, to understand brands have to analyze the concept of divergence, this is an analogy to what happens in the world of products and prices, eventually categories diverge and divided into two or more categories, generating infinite opportunities for the creation of brands, this principle is not a novelty, since it was generated by Charles Darwin in his book and is an essential concept in the two themes: the origin of species and brands, the interaction between evolution and divergence provide models for understanding the universe and branding as it also marks evolve to become stronger and dominant (G, 2005).

The role played by the name; is very important, usually the single name is the main reason for the success of the brand, the most effective is to generate a theory of how to build a brand. Naturally there are brands and brands, most of them are worthless, some are worth something and a few are among the most valuable assets that a company can have. The brand value is determined by what dominates the segment, that's mean dominates its category, such as Coca-Cola dominates the category of soft drinks.

In the cycle of introducing a product, it is necessary to take care of the target market, where brand awareness must be created among consumers and stimulate product testing, that is, the initial purchase of an item by a consumer. This generates large expenditures on advertising and promotion to stimulate *primary demand*, desire for the product class, not by specific brand, since there are few competitors with the same product or as more competitors launch own products and product advances its life cycle, attention of the company focuses on creating a *selective demand* preference for a specific brand (Kerin, Hartley, & Rudelius, 2009).

From the point of view of marketing, trying to understand consumer buying habits of brands is critical; it is more effective to attract new buyers, however, factors of abundance of options in several categories of products must be considered, availability of information about them, similarity of many offers, demand of value in exchange for what is paid and lack of time to find a brand, they decrease loyalty to specific brands in numerous product categories (J. & Olson, 2006).

Obviously you cannot sell a product if we do not aware of it before, an important strategy goal to raise awareness of the firm and its products, marketing communications should be designed to raise awareness primarily for new products and brands, stimulating judgments that allow purchases. An organization sells globally, creating awareness as a primary goal in its market communications. This is make building positive images, identifying prospects, building relationships and retaining channels consumers (Donnelly, 2006).

The people have typed in different ideas to consider your own purchase clothing, and that one of these characterizations are buyers who have characteristics of brand awareness, this work represents the attempt to find information about how men and women with the feature mentioned identify, allowing establish the following hypothesis:

Hi: Women have more features brand conscience than men when shopping for clothes in SME's.

Methodology

The research is carried out with survey applications, so the methodology is divided into sections that explain how it was done. It is expected to satisfy the replicability criterion (Salkind, 1999).

Sample

Participants are people community of Saltillo, Coahuila, a sample of 250 subjects, the following characteristics are selected: men and women, in a proportion of 44% male and 56% female with ages d e 18, to a range of 27 years, with the characteristic of client, known as retail store, this has the characteristic that they are businesses that are located in shopping centers and geographically in the center of the city of Saltillo, and Ramos Arizpe, Coahuila, department stores were excluded, men and women surveyed are employees at various businesses in the city, the instrument was applied for random form at places where small businesses were located clothing, is considered a sampling error of .05 and 95% confidence (Cochran William, 1984).

Operational definition of the variables

The operational definition of the variables is given as follows:

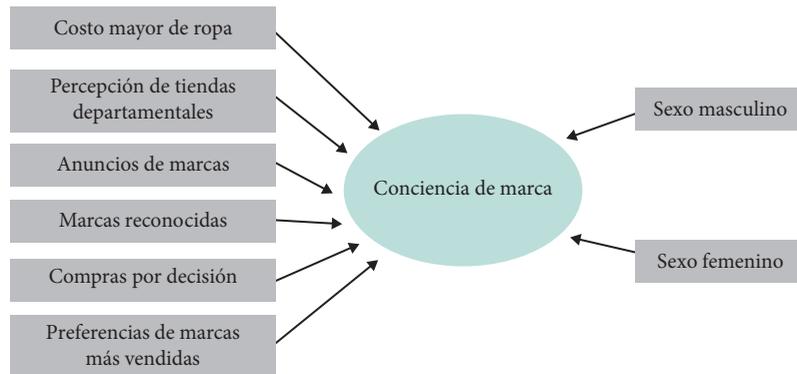
- Categorical variables:
 - **Gender:** defined as sexual characteristics observed in the subject.
 - **Marital status.** - defined in three categories, married, single and another that can be free or divorced union.

- **Seniority in the workplace:** defined as the time that subjects have been working in the company.
 - **Colony:** defined as the name of the colony where they currently live.
 - **Profession:** defined as the activity to which the respondent
 - **Where to buy:** defined as retail store selling all kinds of brands or department store brands.
- Complex variable indicators: Aware of the Brand
 - **Increased cost Dress:** defined as the user's opinion that believes that higher quality must be higher cost.
 - **perception of department stores: defined as** stores look nice and specialty selling best clothes
 - **Ads Brand:** defined as more brands appear in the ads are the best options for buying clothes.
 - **Renowned brands:** defined as the best option for buying because their brands are recognized more often.
 - **User shopping decision:** defined as the most expensive brands on the market are purchased by the user's decision.
 - **Brand preference:** in user opinion, this would rather buy more clothing brands sold.
 - **Design:** this section establishes the situational and observational moment of the variables used by the researcher, its graphic and explained expression inform the reader about how the variables were ordered to develop the research. This section also places on the operational, functionality, execution and expository derivation of the research process. It also allows to be informed about the way in which the research will be analyzed, and how the questions of the research will be answered same (Arnau, 1990; Kerlinger & Howard, 2002).

Research design

It is observed in Figure 1, the research design is exploratory, complex variables that are measured summation scale, and try to test whether the indicators that the literature on brand awareness defined, are related with the construct, these variables are defined in paragraph operational definition of variables. Therefore, the analyzes to be performed are descriptive and normality tests then apply a discriminant analysis (Hair, 2001) which works with variables measured in interval with summative scale, which will establish the construct relations and how it works divided by a categorical variable.

Figure 1. Arrangement of situational variables.



Source: Kerlinger and Lee (2002).

Instruments

The instrument used is the scale of Chengedzai *et al.* consumers (Chengedzai, Manillall, & Lawrence, 2015). The instrument consists of two main parts: the first are established the signalitics corresponding to the colony where the respondent lives variables, age, sex, profession the years have working in business, marital status, education level, the second part of the instrument is divided in constructs: fashion conscious, hedonistic brand conscious, innovative, quality conscious; Undecided, and Loyalty to the Brand. These constructs only brand awareness to discriminate which are more representative items for men and women, who make purchases in stores SME's analyzed (Nunally, 1987).

Process

An application survey Chengedzai *et al.*, people who are now working and can make purchases of clothing, held the sample was 250 subjects with approximately 56% of women and 44% men, the surveys in different parts of the city of Saltillo, you were surveyed by people who came to buy clothes in retail stores, which were located s in the southeast of the State of Coahuila, specifically in the city of Saltillo and Ramos Arizpe.

Results

A discriminant analysis is made, to find the linear combination of independent variables of brand awareness that best discriminates the group formed by the variable sex of the people who go to retail stores to buy clothes.

Table 1. Test Results.

Box M	31,649
Approx.	1.0 68
F	gl1 twenty-one
	gl2 212086.524
S.I.G.	.050

Table 1 shows results of the M Box test and its transformation to an F statistic, rejects null hypothesis of equal variance-covariance matrices and concludes that the groups vary some more than others.

Table 2. Test equality of means groups.

		Lambda de Wilks	F	gl1	gl2	S.I.G.
1	Higher cost clothing equals higher quality clothing	0.973	6.819	1	248	0.029
2	Departmental and specialty store offers better clothing	0.974	6.517	1	248	0.011
3	Brands advertised best option clothing	0.969	7.642	1	248	0.015
4	Recognized brands are better for me	0.943	8.028	1	248	0.007
5	Face clothes are bought by decision	0.969	8.053	1	248	0.005
6	Preference for buying best-selling branded clothes	0.984	3.977	1	248	0.047

Table 2 is the univariate ANOVA analysis, and determines the F values, there are differences between means is preliminary evidence that the groups differ in variable is selected classification.

Table 3. Wilks ‘ Lambda.

Function test	Lambda de Wilks	Chi squared	gl	S.I.G.
1	.932	17,269	6	0.008

Table 3 shows the Wilks ‘ Lambda with the near unity value; the chi - square statistic indicates that the null hypothesis of equality of means centroid, multivariate means between groups is rejected, with less than .05

significances, which denotes that the groups of the independent variables do not have equal averages.

Table 4. Functions in group centroids.

Sex Gender	Function
	1
Woman	.3 46
Man	-.20 4

Table 4 shows the location of the centroid of the gross discriminant function is a single function, the highest average values correspond to the male and have negative discriminant sign, and the lowest female and have a positive sign.

Table 5. Canonical discriminant function coefficients standardized.

		Function
		1
1	Bedding most cost equals higher quality	-0.089
2	Department store and specialty gives major clothes.	0.485
3	Brands me most or option to purchase clothing advertised	0.410
4	Brands recognized are better for me.	-.636
5	Vintage clothing shop care decision	0.551
6	Preference to buy best - selling sea ca	0.402

Table 5 shows the coefficients results standardized canonical discriminant function, and according to Table 2, the centroids for discriminating female functions have positive sign and discriminating against male gender are centroids having negative sign. Therefore, subjects who present increases above the mean will belong to the female gender, while those with a negative sign will belong to the male gender. According to these results we can say that women who shop at retail stores, consider: clothes expensive purchase decision, department stores offer better clothing brands most heavily advertised are the best choice for buying clothes, and they have a preference for buying clothes from the best-selling brand. The male believes that brands are best for them, and better quality clothes should be higher cost.

Table 6. Matrix structures.

		Function
		1
5	Expensive clothes are bought by decision	0.667
2	Department store and specialty offers best clothes	0.600
6	Preference for buying best-selling brand.	0.469
3	Brand of clothing best option is announced	0.382
1	Bedding equid cost is worth more to higher quality	0.317
4	Brands are better for me.	-0.039

Table 6 shows the correlations between discriminating variables and standardized discriminant function, is the gross relationship between each variable and the discriminant function, which allows, in this analysis the purchase shear is related to the highest value. 667; the purchase of clothing in department and specialty stores offers better clothing presents a correlation of .600; preference for buying best-selling brand presents a correlation of .469; This indicates that for both men and women these variables must be considered as an important part of a model where brand awareness is analyzed in clothing.

Conclusions

According to these results we can say that people who shop for clothes in SME's, also called retail stores, women consider: clothes expensive purchase decision, department stores offered best clothes, which the brands that advertise the most are the best option for buying clothes, and they have a preference for buying clothes from the best-selling brand, It was also found, in the present work, that the male sex considers that the recognized brands are better for them, and that the higher quality clothes must have higher cost. This indicates that for both men and women these variables must be considered as an important part of a model where brand awareness in identifying type of shopper in a store SME's is analyzed; also it allows you to examine the influence of gender in the type of buyers identified in the scale of Chengedzai, and the research that identified seven types of buyers and where the variable fashion conscious, broken down by the gender of the client. This allow small business owners make marketing strategies focused on the type of consumer analyzed; the value of the study is that these results can allow sellers to understand and predict the behavior of consumer buying clothes in businesses where marketing has little use and sometimes not even there a marketing strategy development.

Finally, the analysis is considered as part of the process of entrepreneurial culture in SMEs.

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Perception of Social Human Rights in University Students as a Basis for Working to Strengthen Social Entrepreneurship in Public Policies

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Abstract

The issue of human rights is too broad, as it includes transcendental elements to improve the quality of life for all people in our community and other countries. For this reason, the support and work of governments, civil society, the private sector and other countries as well, is basic. Recognition of DESCAs (economic, social, cultural and environmental rights) is comparatively recent. Social entrepreneurs are people willing to establish solutions for society, even if it means breaking the current schemes. This research is based on an instrument validated by experts, which was used previously in the consolidation of the human rights development plan for the state of Zacatecas. The instrument was applied in university students of the Academic Unit of accounting and administration of the Autonomous University of Zacatecas, with the objective of knowing the perception of the chosen dimension for this study: social human rights. Through Factorial Exploratory Analysis, two factors related to basic rights were found: health and drinking water. Research in these areas will allow educational

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improvement and innovation actions that strengthen public policies, thus generating professionals involved in social entrepreneurship.

Keywords: *Social human rights, social entrepreneurship, public policies.*

Introduction

Nowadays the world crosses for dizzy processes of change. The present research allows the understanding of university students with regard to the perception of Human rights, which on having been considered and recreated by authorities and community leaders, allow a suitable construction of them. Human rights are a series of “Laws” that govern around the world, embodied in numerous documents proceeding from the “Universal Declaration of Human Rights”, protected by the UNO in 1948 (Salvador, 2003). On the other hand, the issue can be contained in several spheres of the perception, being able to be ethical, legal, environmental, social and/or economic. However, the perception is directly related to the way each individual understands and behaves, being necessary conceptual knowledge.

At present, although too often ignored, they are considered in the Constitutions and laws of the different countries. There is a vision of the human being in which the dignity, equality, and freedom of every person are defended, as well as the need for peace and cooperation between the states. They are based on the inalienable dignity of the person, permanently and universally, that is, no one can be deprived of them, they must be considered in the legislation, serving to plan both the social and the political, taking into account the justice code of nations and international law (López, 2014).

Human rights are defined as inherent in the person, irrevocable, inalienable, non-transferable and inalienable; they are universal and egalitarian, incompatible, historical, timeless and independent of social contexts. They are norms that seek to protect the dignity of human beings, they govern the way in which individuals live in society, their relationship with governments and vice versa (Nogueira, 2007). In this sense, forcing governments to take measures and preventing them from taking others; likewise, individuals have responsibilities when making use of them and must respect those of others; they are inherent, they are simply born with them as a result of common humanity; inalienable, you cannot renounce them or deprive of them; they are equal, none is superior to another; it is not possible to treat them separately or in different categories (Galvis, 2007).

On the other hand, the recognition of the DESCAs (economic, social, cultural and environmental rights); is respectively recent. In the international field, these rights are established in different international treaties, one of the most representative is the International Covenant on Economic, Social and Cultural Rights of the year 1966 (INEHRM, 2015). In the Inter-American System for the Protection of Human Rights, these rights are recognized in the Protocol of San Salvador or Additional Protocol to the American Convention on Human Rights in the area of Economic, Social and Cultural Rights.

Likewise, in the 4° constitutional article an important number of rights is established, among which are: 1. Equality between women and men. 2. Decide in a free, responsible and informed way about the number and spacing of your children. 3. To be able to access a nutritious, sufficient and quality food. 4. Enjoy the protection of your health by the State.

5. To be able to develop in a healthy environment. 6. Enjoy access, disposal and sanitation of water. 7. Enjoy decent and decent housing. 8. The right of girls and boys to attend to the best interests of children in all decisions and actions of the State. 9. Your right to access culture and to participate in a cultural life through the enjoyment of goods and services provided by the State is recognized. 10. Finally, your right to physical culture and to the practice of sport is foreseen. (Terán, 2008). The economic, social, cultural and environmental rights are aimed at achieving greater equality among all people, for which it is essential that they have a quality education and adequate food, that enjoy a good state of health, safety social and housing, who have access to culture and, very importantly, have a job capable of allowing them to enjoy a decent standard of living (Duce, 2010).

In the case of Mexico, we find in The National Development Plan 2013-2018, the assumption that the task of development and growth corresponds to all actors, sectors, and people of the country, originates the route that the Government of the Republic has drawn to support that together we get Mexico to reach its maximum potential. To achieve this, national goals are instituted, in which social development is found for an inclusive Mexico; Considerable Mexicans face a series of factors that keep them in vicious circles of development, where opportunities for progress are scarce. On the other hand, income inequality, the violation of human rights, discrimination and limited access to health services and decent housing, in terms of social justice, constitute an important barrier to productivity and economic growth in the country.

Thus, five national goals are established that propose the objectives, strategies, and lines of action to achieve them. As well as the indicators to follow up on each of them. Among which stands out: the one of a Mexico in peace that guarantees the advance of democracy, the governability and the security of its population, strengthen institutions through dialogue and the construction of commitments with political and social actors, the formation of citizenship and social co-responsibility, respect and protection of human rights, the eradication of gender-based violence, the fight against corruption and the promotion of greater accountability, all aimed at the consolidation of a full democracy (Solís, 2008).

Likewise, the 2017-2021 State Development Plan of the State of Zacatecas establishes central objectives to increase employment, housing, and education opportunities; guarantee respect for their human rights and provide conditions of security, justice, equity, human, social and economic development, in accordance with international protocols and with general, federal and state legislation in force in our national and local territory, without forgetting their correspondence with the legal dispositions in force in each municipality of the entity. Public policies should permeate

the transversal approach, so that all programs, projects, and actions are inclusive and guarantee the right to education, health, justice, employment, public services, that is to say the full exercise of political and citizen rights, in general to a dignified and full life in which by itself or collectively, people fully develop their capabilities and demand the rights that concern them (Zacatecas, 2017).

In this sense, with the recognition of the Federal Government for the actions taken in favor of the protection of individual guarantees, the State Plan for Human Rights was established. The aforementioned in the presence of the Undersecretary of Human Rights of the Ministry of the Interior, Roberto Campa Cifrián, and in the same act, the chief executive gave the president of the state council of consultation and citizen participation, in the month of March of this year, a document that brings together the feeling of civil society in the field of human rights, it also gathers the proposals of the participants made in the forums carried out and the results of the application of the statistical instrument.

Said state plan is a guide to improve the actions that the state government carries out to guarantee the protection and dissemination of Human Rights in the entity, it was accomplished thanks to the coordinated work between the different spheres of government, the Autonomous University of Zacatecas and the organizations of civil society, during nine regional and one state forums. In addition, the Human Rights Program (2016) was prepared with the methodology of the United Nations Organization and the support of the Federal Government. Zacatecas is consolidated as a leading state in the respect of human rights and the orientation of cross-cutting public policies of the Government to the strengthening of human rights (Zacatecas, 2017).

Likewise, the program integrates four specific objectives: a) Strengthening a human rights culture, b) Institutionalizing the human rights approach, c) Strengthening the right to equality, and d) Strengthening the exercise and enjoyment of human rights linked to justice and public security systems. One of the priorities of the human rights policy of the Government of the Republic is aimed at strengthening the lines of action in all states, and with this program that is already nine and it is expected that this year all will be completed. The recommendations that were received by the Inter-American Commission on Human Rights were to elaborate this type of programs in the Federal Entities; that is why, we have worked hard to achieve this goal, and with work in communities and municipalities has opened the door to dialogue between society and the Federal Government. The progress of the nation is determined by the development of the enjoyment and exercise of human rights of each person, the challenge is to make valuable and measurable policies, and one of the values of this program is focused on achieving this goal (Zacatecas, 2017).

In this sense, in order to approach the issue of public policies, we recall the statement that these are the “succession of decisions, actions, intentionally related, dispossessed by different public and eventually private actors whose resources and institutional and other links vary in order to

solve precisely a politically determined problem as a collective. This set of decisions and tasks give rise to formal facts, with a variable demand, destined to change the behavior of social groups that supposedly cause the collective problem to be solved (group-object) in the interest of social groups that suffer the negative effects of the problem in question” (Gasté-lum, 2009). The author states that public policy takes legislative and administrative action to be carried out since it is related to the responsibilities of the governing bodies.

Which places us in the plane of the roles of the different actions of the public authorities so that the integral development of a public policy can be generated. In our country, we rescue the approach that states that the issue of public policies in Mexico are recent in its development, since it occurs in the eighties, modifying elements of public administration. Likewise, from the public administration, a process has taken place for “the rational choice in politics and in policies: democracy and the efficiency of public management” (Camou, 1994). The author emphasizes that not all situations become public, they become situations that are the object of governmental exercise; the “agenda” of government, highlights the way in which the agenda for public policy of governments is built, for which democratic procedures add dialogue, which originates the incorporation of social demands.

To the extent that more actors are included in the construction of public policies, it is feasible that a greater benefit is obtained, the truth is that there are factors that in numerous occasions are determinants in the dynamics of the results of the planned policy, as being in the political or economic environment. The truth is that when conceiving itself with more actors and with the same favored ones, there is an element that strengthens the democratic processes, which benefits the own results of public policy. On the other hand, human rights practically refer us to more or less indefinite notions of justice, also to be placed in political-legal texts of Universal or International Declarations, projects, and initiatives of governments; institutional devices of different levels (international, national, sub-state); management of civic organizations, social movements, complaints or abuses of authority.

From a historical point of view, the dispute over the conceptualization of human rights is based on constitutionalism, in addition, there is a broad debate about its moral and ethical character, at the same time that the legal application framework is the form of making them real. Human rights are fundamental ethical requirements that all human beings have, without exception, because of their unique belonging to the human race, and that they are backed by values whose notions have historically become norms of international and national law which are considered as parameters of justice and political legitimacy (Solís, 2008).

In this sense, social entrepreneurship is a phenomenon that began to be heard at the end of the 20th century and the beginning of the 21st century. Its perspective lies in the possibility it provides to address social problems, primarily poverty, through the conception of ventures or companies

that provide products or services in traditional markets with the interest of achieving the fulfillment of a social mission (Yunus, 2008; Portales & Arandia, 2015). Likewise, they are distinguished from other ventures in their *raison d'être*, since customary undertakings satisfy the needs of clients or consumers to conceive an economic wealth, social enterprises seek to create social and/or environmental value through commercial means. The generation of wealth is conceived as a way to extend the impact and scalability of the social cause (Chambers, 2014; Dees & Elias, 1998; Santos, 2012).

Thus, there is currently no consensus definition of social entrepreneurship (Austin *et al.*, 2006; Chambers, 2014; Dacin, Dacin & Matear, 2010; Portales & Arandia, 2015), which is why other approaches have emerged to their understanding (Bacq & Janssen, 2011; Defourny & Nysens, 2008). Furthermore, these approximations agree on the ability of entrepreneurs and social enterprises to create organizational projects that generate economic, social and, in some cases, environmental cases at the same time (Bacq & Janssen, 2011). Causing a tension between the fulfillment of the social mission and the operation of the commercial structure that is indispensable to generate sufficient inflows and maintain the operation, increasing the impact it generates in the long term (Chambers, 2014).

In addition, the role of the entrepreneur is too important because through the process, is influenced by the social context in which it is immersed, affecting socio-economic, cultural, technological and political factors in the process of recognition of an opportunity (Marijek *et al.*, 2004). One of the peculiarities that these projects show is the interest in addressing problems or phenomena that are diagnosed from a local perspective, however, their characteristics and conditions are comparable with other contexts, mainly in developing countries. In this sense, social entrepreneurship is a way of addressing local problems with organizational schemes, dynamics and social innovations that are built from this logic (Portales & Arandia, 2015).

It is important to recognize that social entrepreneurship can develop in different sectors. Austin, Stevenson, and Wei-Skillern (2006), define it as “a transforming activity, of creating social value, that takes place within and through the non-profit, business and government sectors”. The foregoing agrees that social entrepreneurship is not separate from commercial entrepreneurship, but coexists. Likewise, the difference between social and commercial ventures is not dichotomous, but rather as a continuum that goes from the purely social to the strictly economic. However, elements in common between both coexist.

Human activity shows economic realities, economic activity generates social value (Austin *et al.*, 2006: 3). On the other hand, to arrive at a correct definition, it is pertinent to examine the definition proposed by Martin and Osberg (2007). For those who understand social entrepreneurship, as a specific type of entrepreneurship that seeks solutions for social problems through the construction, evaluation and monitoring of opportunities that allow the generation of sustainable social value, achieving new and constant balances in relation to social conditions, through

the direct work carried out by non-profit organizations, companies or government agencies.

In this sense, in a world of constant change, evolution and economic uncertainty, it is essential to deploy a series of capacities, tools, and attitudes in order to meet the requirements demanded by the new society. The focus should be placed on the learning of life and the acquisition of entrepreneurial skills, mainly in the development of university education programs (European Higher Education Area, 2012). Numerous international organizations call on Higher Education institutions to take entrepreneurial education to express and anticipate social needs (UNESCO, 2009). According to different authors, the social entrepreneur aims to achieve a social mission, through the use of management tools that respond to social problems and business challenges. It is an agent of change that creates and promotes social values, has the ability to look for events at the service of its mission.

It is induced in a process of continuous innovation, adjustment, learning, and action without being considered limited by existing resources. It also shows a high level of commitment towards the population it serves and the results achieved. The ultimate goal of the social enterprise is the creation of a sustainable change in the lives of people and their impact, rewarding the entire community, above individual interests. The entrepreneur is an insistent individual who detects problems and creates solutions, taking the initiative to proceed according to that idea, gathers resources and builds organizations to safeguard and commercialize the idea, provides energy and a sustained approach to overcome resistance, and that continues to refine, improve, and amplify that idea until what was once a secondary idea has become a new norm (Sáenz & López, 2015).

In addition, Institutions can be defined as “a system of social patterns, respectively organized, that expresses sanctioned behavior, in order to satisfy and respond to the basic needs of a society”. Therefore, the basic needs of society covered by the institutions are conservation, maintaining order in a group and motivating its members through a system of values and objectives that specify the purpose of life in society. By meeting needs, institutions direct human actions for the good of the community. So the most elementary functions of these are religion, government, economics, and education.

For centuries, man has transferred his knowledge to the following generations in various ways, from the traditional oral in which each person communicated through the spoken word their knowledge, it is up to that moment when formal education institutions are created when the opportunity is offered to the students to learn in a specific place, with programs specially designed for educational training, with professors who facilitate and impart their knowledge. Education originates with the purpose of offering to any person, the necessary tools to form a future, obtain knowledge and promote conditions to compete in the work and daily life. The first public universities emerge for this purpose (Pineda, 2001).

Likewise, a significant element in organizational behavior is perception understood as the process of thinking in which people receive in-

formation through the five senses, select, organize and interpret giving a meaning to reality. The interpretation of sensory stimuli that a person receives will bring a response, either manifest (actions) or disguised (motivation, attitudes, and feelings) or both. Each one chooses and organizes the sensory information in a different way, thus it reaches different interpretations and answers. It is considered that differences in perception helps explain why workers act differently in the same situation. So they perceive the same situation independently and behavioral responses depend to a large extent on those perceptions. Therefore, according to the theory, perception is important since the behavior of people is based on their perception of reality. (García, 2009).

Materials and Methods

The investigation according to the intervention of the researcher was observational, because there was no intervention, perspective to obtain the data on the research (primary), cross-sectional because only one occasion was measured during the months of March and April 2016. The research level was explanatory, multivariate (Hair *et al.*, 2010). The purpose of the study was to know the perception of social human rights of the students of the Accounting and Administration Unit Academic. The instrument used was the survey (INEGI, 2013), applied face to face, prepared by experts of the Human Rights Commission of the State of Zacatecas (CEDH), staff of the general secretariat of the state government, the attorney general's office of the State and Teachers of Accounting and Administration Unit Academic of the Autonomous University of Zacatecas; the dimensions chosen in the same, were for consideration of those already mentioned as some of the most significant, taking into account the recommendations of Human Rights of the United Nations Organization to Mexico (Anaya & García, 2014).

The validity of content (juice of experts) was carried out by personnel of the commission of human rights of the Secretariat of Mexican Republic Government; the instrument was applied originally for the production of the Zacatecas's State Program of Human rights between November and December 2015 in the municipalities of the mentioned state. A scale was in use type Likert of 5 points, using the following values: 1 = nothing, 2 = something, 3 = totally, 4 = doesn't know, 5 = doesn't answer. The sample of study with 90 % of confidence and 10 % of mistake, 185 surveys, stratified by semester.

The instrument is based on the dimension: social human rights with 17 items, when conducting the research it was taken into consideration that the respondents proceeded to answer the human rights instrument, advised by the applicator thereof and, where appropriate, clarify the conceptual doubts that arose during the process by the respondents. To evaluate the reliability and validity of the scales, an Exploratory Factor Analysis was performed, using the method of principal axes and maximum variance, varimax normalization, applying Cronbach's Alpha for each factor

found. The results achieved were analyzed, using the statistical program SPSS, version 21, the methods of descriptive statistics and exploratory factor analysis of data help to present the data in such a way as to highlight its structure. Table 1 summarizes the most relevant aspects of the research carried out.

Table 1. Research data sheet.

Characteristics	Poll
Universe	1040 students
Scope of study	Academic Accounting and Administration Unit UAZ
Sample Unit	Student
Method of collecting information	Personal survey
Sampling procedure	Personal interview with the selected students
Sample size	185
Sampling error margin	$\pm 10\%$ at a global level for a confidence of 90% $p=q=0.5$
Fieldwork date	March -April 2016

Source. Own elaboration. Calculation of sample size.

Results

Descriptive analysis. The answers expressed were coded according to the answers indicated by the respondents, to later empty the data in a registry table, with this being able to apply the corresponding analysis of descriptive statistics. The methods of descriptive statistics help to display the data in such a way as to highlight its structure. There are several simple and efficient ways to organize the data in graphs or tables that allow showing the most outstanding characteristics. The other way of representing the data is to summarize them in one or two numbers that characterize the set with the least possible distortion of information (Berenson, 1982).

Frequencies were obtained corresponding to the education of the parents of the respondent, which are presented in Table 2, with the purpose of further analysis, proceeded to classify them in basic, secondary and higher education. In basic education the first four levels are grouped, 43.4% was found; for secondary education, 25.8% were considered high school, 30.8% were higher education, and basic education was predominant in the parents, but the next highest observed was higher education.

Table 2. Parental Schooling in Ranks.

		Frequency	Percentage	Valid percentage	Accumulated percentage
Valid	Basic educations	79	43.4	43.4	43.4
	Middle education	47	25.8	25.8	69.2
	Higher education	56	30.8	30.8	100.0
	Total	182	100.0	100.0	

Source: Statistical package SPSS version 21. <http://www.spss.com/>.

Exploratory factor analysis. With the factorial analysis, it can be determined, to how many independent dimensions can be reduced a certain number of variables measured -indicators- and that are related to each other (Hair *et al.*, 2010). For the present investigation they were eliminated with less than 40% correlation; having KMO = .789 being reasonably good (better between closer to 1), given that it must be between 0.5 and 1 to see the necessary variance it contains to group (Zamora & Chávez 2010). Bartlett's sphericity test allows differentiating the double hypothesis that the elements of the main diagonal of the matrix are the unit and the rest zero (H0: Correlation matrix is identity, H1: Correlation matrix is different from the one of identity).

By falling in the rejection area $p\text{-value} < 0.05$ (sig in SPSS), it is corroborated that it is different from the identity matrix otherwise it would indicate that there is no correlation structure between the variables involved (Zamora & Chávez, 2010; Hair *et al.*, 2010). After obtaining the rotated matrix, as shown in Table 3, in relation to the knowledge of social human rights, it can be observed how they were and how they were grouped according to the aforementioned variance and the method of maximum likelihood was extracted.

Table 3. The matrix of Rotated Factors.^a Knowledge of social human rights.

	Factor	
	1	2
Have basic service in you home	.514	
In your house has driving water		.802
Drinking water that reaches your home canbe used to wash dishes, clothes, take a bath (it is clean)		.799
In your house there is water regularly	.443	
Schools in your neighborhood or community have computers and internet	.459	
Health services in ypu community are of good quality	.808	
Health service are near where you live	.673	
When you get sick, ypu get the medicine you need	.628	

Extraction method: factorization of the main axis

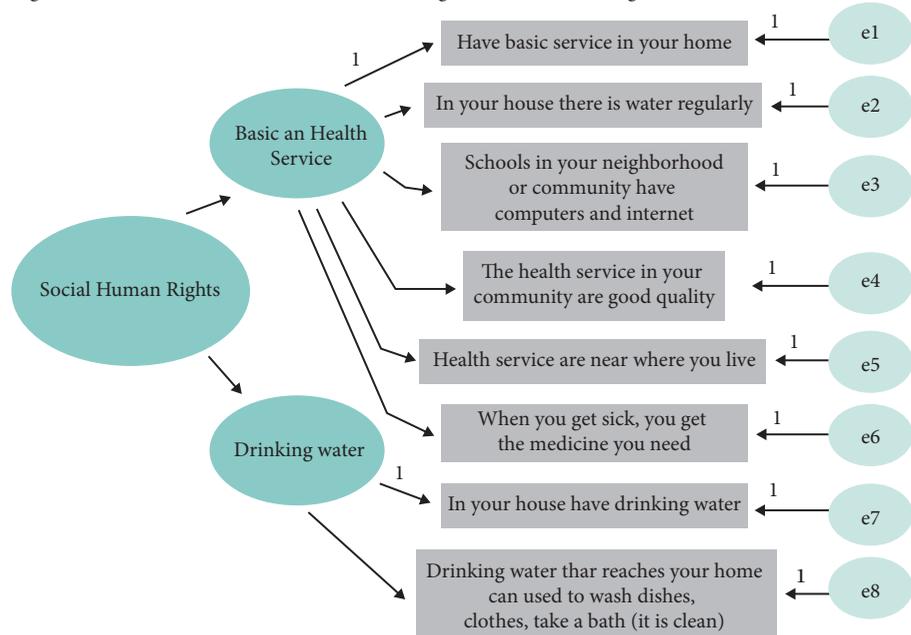
Rotation method: Varimax standardization with Kaiser^a

a. The rotation converged in 3 iterations

Source: Statistical package SPSS version 21. <http://www.spss.com/>.

In Figure 1, two factors predominate, the first of which groups the items that refer to basic services and health, the second of the factors groups the items that refer to enjoy access, disposition and water sanitation.

Figure 1. Model of dimension factors. Knowledge of social human rights.



Source: Statistical package AMOS of SPSS version 21. <http://www.spss.com/>.

To determine the reliability of the factors found, as shown in Table 4, we used the Cronbach’s Alpha index (Cronbach, 1951), Nunally (1987), and George and Mallery (2003), consider that $\alpha \geq 0.7$, to be acceptable while than for Carmines and Zeller $\alpha \geq 0.8$.

Table 4. Reliability dimension social human rights.

Factor	α of Cronbach
Basic and health services	.768
Drinking water	.807

Source: Statistical package SPSS version 21. <http://www.spss.com/>.

According to Churchill (1979), a measure is valid when the differences in the observed values reflect true differences only on the characteristics that are intended to be measured and not on other factors. Specifying that a measurement instrument is not validated, but an interpretation of the data coming from a specific procedure. The validity of construction or concept “is applied because a scale is not a set of issues or items unconnected, but an instrument designed to measure something concrete.” It aims to answer the question: which concept measures the scale. To test it, a confirmatory factor analysis must be done.

Conclusions

According to the particular objective, to determine the perception that the UACyA students of the UAZ have of the social human rights of the UAZ, once the multivariate technique of exploratory factor analysis was applied, it was found that the items that contribute the most to explain the factors (Uriel, 1995) are grouped into two, among which explain 58% of the total variance, being sufficient, according to the size of the sample for this statistical technique (Zamora *et al.*, 2010) the items that deal with basic services, if there are water regularly, schools and health services in the community of origin of the student, are grouped into the most important factor with approximately 42% of the total variance explained, which was named “basic services and health” and which has a reliability measured with Cronbach’s alpha (Cronbach, 1951) of .768, being acceptable according to Nunally (1987), the other factor (of minor importance) groups two items that they apply to drinking water and it is clean, named “potable water” with a reliability of .807 that shows a good internal consistency, highly correlated items.

When comparing the factors that in the present investigation resulted, relating to those of the study for which the instrument was originally designed, the State Program of Human Rights of the State of Zacatecas (Government of the State of Zacatecas, 2016) found that unlike the two factors grouped here, the inhabitants of the municipalities of the state of Zacatecas, have the perception regarding social human rights grouped into three factors, the first of them highly coinciding (basic services) and differing in the other two that deal with counting with decent work and earn enough to live as a second and have the medical service, attention and have the necessary medication, this could be explained while surveying the students of the UACyA, among these predominates being single and dedicate themselves in their most to study, so their perception of having a job and that this is well paid is not yet a priority. In the same way, mothers who were surveyed in the communities are users of health services.

The promotion of research in these areas, admits the debate and the admission of agreements regarding a framework related to the formation of social entrepreneurship, this will allow us to act on those factors that condition our lives, such as education and health, which create inequalities, unjust and unnecessary, the development and improvement of various conditions, for that reason the elemental strengthening of public policies in institutions, particularly in higher education.

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Market Orientation in Tourism Companies in Aguascalientes State

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Abstract

Companies with greater market orientation generally achieve a better performance, based on the fact that they keep on searching, analyzing and responding to information aiming to achieve better standards of customer satisfaction. For tourism companies, it is essential to have a good connection with their customers and to carefully take care of their customer's needs and desires, in order to achieve their preference, thus obtaining higher sales. This work aims to deepen the knowledge of market orientation or assimilation of the concept of marketing in tourism companies, analyzing the variations between different subgroups defined based on 9 factors that in the first instance have been considered as a source of these variants, 5 of them referred to the characteristics of the companies and 4 in relation to the characteristics of the CEO. Through the comparisons made, statistically significant differences were found regarding the work-field or specific activity of the companies or the age, seniority and training of the CEO. Such aspects should be considered when defining different marketing strategies. On the other hand, factors such as the seniority of the company, family owned vs. Non-family, the num-

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ber and type of establishments, the occupation of managerial positions and the gender of the general manager, slight differences were found in the mean values of the market orientation in the defined subgroups but these were not significant, so they are not quite relevant factors in the definition of marketing strategies. These results are useful for companies and agencies in the tourism field, for a better understanding of their levels of marketing implementation and for the delimitation of the most pertinent actions according to the characteristics of their businesses. To continue with the study of tourism companies, future studies will analyze the relationship of market orientation with variables such as innovation, entrepreneurial orientation and performance.

Keywords: *Market orientation, tourism company.*

Introduction

Market orientation (MO) is an area of study of marketing that had its peak in the nineties and arises as a solution to the need to operationalize the concept of marketing, so it can be considered as the implementation of such concept within organizations (Bigné *et al.*, 2001). There have been several theoretical proposals developed trying to understand the concept, being the most relevant those of Kohli and Jawoski (1990) and Narver and Slater (1990). In general, the theoretical proposals have been oriented in two senses and approaches: the behavioral approach and the cultural approach. The first, linked to the work of Kohli and Jawoski (1990), considers MO as a set of observable actions, and focuses its attention on three basic activities: i) the collection of information; ii) the dissemination of such information throughout the organizational structure; and, iii) the design and implementation of actions to meet consumer needs.

On the other hand, the second approach, also called the business philosophy approach, is related to the proposal of Narver and Slater (1990), and identifies MO based on the shared culture within the organization, which is formed from the values and concepts that privilege the client or user of the company and establishes three dimensions: customer orientation, orientation towards competition and inter-functional coordination. As observed and according to Bigné *et al.* (2001), both approaches are not exclusive but complementary and in an attempt to unify them, authors such as Codogan and Diamantopoulos (1995), have developed specific models trying to integrate the two dominant conceptualizations of MO and introduce an international dimension to their study. In their proposal, they highlight coordination as the fundamental element.

In spite of the above, several empirical studies continue adopting one of the two approaches mentioned above. Such is the case of this study, which has adopted a perspective of behavioral analysis of MO, due to the interest of identifying strategies and mechanisms that allow companies in the tourism industry to improve their performance. MO has also been

studied, in companies within the tourism industry and various published works give account of it.

Among these, we can mention the one developed by Qu, Ennew and Sinclair (2004), who despite of the limited understanding of the factors that influence MO, focused on analyzing the role played by government regulation and the structure of ownership in hotels and travel agencies of China; the study by van Zyl and Mathur-Helm (2007), who explored a conceptual model that considers the relationships between business leadership, MO, and orientation towards relational marketing in the performance of small tourism businesses in South Africa; the proposal of Chen and Myagmarsuren (2013), which, based on the adjustment-environment theory, determines the relationship between MO and performance with the modeling function of value offers from a sample of Taiwanese travel agencies.

In this regard, there has been much work developed by Spanish researchers, among which are the works of Polo, Frias and Rodríguez (2011, 2012a, 2012b, 2015), which analyze the MO concept in the rural tourism sector in Spain relating it to the performance of companies in this field; the one developed by Bigné *et al.* (2005), which analyzes MO from two perspectives: firstly its direct influence on the perceived performance of tourism agencies, as well as the indirect influence on performance through the perceived value of market information, and secondly, the effects on the perceived quality and the indirect influences derived from the use of measurement systems.

The work of Vega-Vázquez *et al.* (2016), which demonstrates the mediating role of MO between entrepreneurial intention and commercial results in hotels in southern Spain; the one developed by Campo, Díaz and Yagüe (2014), which analyzes MO within Spanish hotels and their impact on their performance; or the proposal of Bigné *et al.* (2001), that develops a scale to measure the concept of MO in the ceramic and tourism industries in Valencia, Spain in which application, no relationship between the variables that measure the size of the company and the level of MO are identified, whereas for travel agencies they conclude that most of them have some MO behavior.

However, in the literature review, few papers analyzing the issue of MO in Mexican companies were identified. Among these, we can mention the one proposed by Medina and Zizaldra (2013), which studies the MO case as a competitive advantage in Ciudad Juárez, Chihuahua hotels; the research by Hernández-León *et al.* (2016), which focuses on identifying requirements for formulating MO strategies in hotels in the state of Sonora; and the one developed by Medina, Larios and Zavala (2016), in which they analyze the MO that Comala has as a tourist destination from a cultural perspective. As observed, the investigation on MO has deepened in hotel companies but a comparison has not been made between the different sub-sectors of the tourism industry distinguishing the characteristics of each of the branches. This reflects the need to deepen on this issue in our country and is precisely what this work aims to provide.

Conceptual framework

Tourism represents an important driver of the Mexican economy; subsequently, the current federal administration has given it a priority role established in the National Development Plan 2013-2018. As an example of this, we can refer to the fact of the international tourist's arrivals from January to September 2017, which was 28.6 million, increasing by 12.3% over the same period of 2016. This meant an income of foreign currency exceeding 15 thousand 954 million during that period (increase of 9.6% over last year). In this way, the balance for international travelers registered a surplus of 8 thousand 271 million dollars, which means an increase of 15.4% over the same period of 2016 (SECTUR, 2017).

Similarly, the importance of tourism can be measured by the number of micro, small and medium enterprises that are related to this activity. According to the data of the last Economic Census (INEGI, 2014), particularly in the category of hotels and restaurants, of the 501,448 economic units identified in the country, 95.8% were micro businesses, 3.7% were small businesses and 0.3% were classified as medium-sized companies. It is important to highlight that only 881 (0.2%) were categorized as large companies. Something similar happens with the employed personnel, 1,943,437 jobs were reported, from which 61.9% are generated in micro businesses, 19.9 in small companies and 5.7% in medium-sized companies.

In the specific case of Aguascalientes, microenterprises represent the largest number of business units with 94.4% of the total reported by INEGI and generating about 40% of the jobs in the state (State Government, 2017). While the economic development of the state is based on the manufacturing industry and particularly the automotive industry, tourism means an important support for the economic development of the state. According to data from the Ministry of Tourism (Datatur, 2015), the total number of hotels in the state is 162, which means an offer of 6,003 rooms, there are 378 restaurants and cafeterias and 110 tourist-quality bars and nightclubs.

Methodology

In order to fulfill the objective of this work, the tourism companies located in the state of Aguascalientes, Mexico were defined as population, among which are those dedicated to the hotel industry, the food and beverage services, travel agencies and operators, centers of entertainment and transportation of passengers. Based on the data published by the Mexican Business Information System (SIEM, 2016), a representative sample of 122 companies was calculated with 95% of confidence and $\pm 5\%$ error, however, aiming to be to achieve greater effectiveness, 285 validated questionnaires applied to owners and / or CEO's of each of these businesses were obtained.

The questionnaire used to collect the data is made up of several sections, the first one asks for information that allows companies to be clas-

sified according to factors such as the specific activity or industry, years of operation, family or non-family owned, managerial control systems, the sort, age, seniority in the position and formation of the CEO, such factors allow us to make a comparison between subgroups of companies.

Another section of the questionnaire allows detecting the level of market orientation that companies present, considering that market orientation can be measured through several observable behaviors or activities in relation to obtaining market information, its distribution through the organization and its use to undertake more relevant market actions (Kohli & Jaworski, 1990). The presence and intensity of these behaviors have been captured through 14 items that measure the generation of intelligence, 9 items that measure the dissemination of intelligence and 7 items that measure the response of the company, all of them integrated into a Likert scale of 5 points, where 1 equals to “totally disagree” and 5 equals to “totally agree” in relation to a series of affirmations about the marketing practices that are carried out in the company.

Using the SPSS v22 software, the responses were integrated to obtain the mean values of the market orientation and subsequently, after defining subgroups based on the mentioned factors, the mean values of this variable were calculated in a particular way in each subgroup, as well as the level of significance of the differences between these values among the subgroups, all of these represents valuable information for a better understanding of the way in which market orientation is being developed in these companies, and to be able to suggest some differentiated and pertinent strategies and actions with the ultimate goal of improving their performance. This information is shown in the following section through a series of graphs and tables.

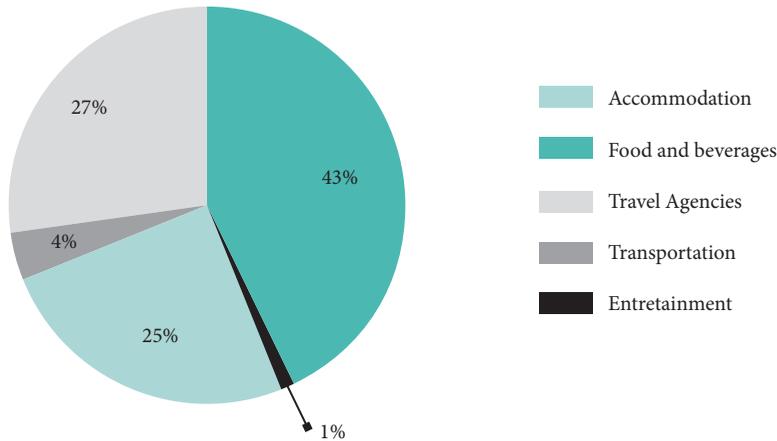
Results

The following is a description of the participating companies based on 9 different factors, 5 related to the company (turnover, seniority, family ownership, number of establishments and occupation of management positions) and 4 related to the personal characteristics of their manager or general director (gender, age, seniority in the position and level of training). We can then see the average values of market orientation that each of the defined subgroups show, highlighting the higher and lower values, as well as the aspects in which a statistically significant difference was found.

First, it is shown in figure 1 the distribution of the 285 tourist companies under study from their industry branch, finding that 43% are food and beverage businesses, among which are restaurants, cafés, bars with food sales and other similar businesses; 27% are travel agencies and operators, integrating both those that make sales to the public and wholesale intermediaries installed in the State of Aguascalientes, 25% belong to the lodging business (accommodation), which includes chain hotels, local companies, with a diversity of quality categories or distinctive, 4% are foreign passenger

transport businesses, considering some that perform route services and others that specialize in rentals; and 1% corresponds to entertainment organizations that receive visitors thus favoring the tourism activity.

Figure 1. The tourist companies by industry branch or main activity.



Source: Own collection.

The level of market orientation in tourism companies is presented with an average of 3.86 on a scale that ranges from 1 = totally disagree with the presence of behaviors that denote a greater focus on the consumer and up to 5 = totally agree that in the company such behavior can be observed. In the analysis by activity or industry branch, 5 groups were defined, finding a higher level of market orientation in the entertainment businesses (3.99), while the lowest average is observed in the travel agencies (3.84). The differences found between the groups are statistically significant ($p < 0.05$), which implies the need to implement differentiated marketing strategies based on the specific activity carried out (Table 1).

Table 1. Level of market orientation depending on the industry branch of tourism firms.

Industry Branch	Cases	Mean	Sig.
Food and Beverages	122	3.85	
Travel Agencies	76	3.84	
Accommodation	72	3.88	0.026**
Transportation	12	3.94	
Entertainment	3	3.99	
Total	285	3.86	

Statistically significant differences between groups: (*): $p < 0.1$, (**): $p < 0.05$, (***): $p < 0.01$.

Source: Personal Collection.

Below we can see the composition of the tourism companies based on their age. As it can be seen, 29% belong to companies between 6 and 10 years old, 24% are between 0 and 5 years old, 19% are between 11 and 15 years old, 10% have remained in the market between 16 and 20 years old, 8% are between 21 and 25 years old, 7% are over 31 years old and 3% have between 26 and 30 years in the market (Figure 2).

Figure 2. Age of tourism companies in Aguascalientes.

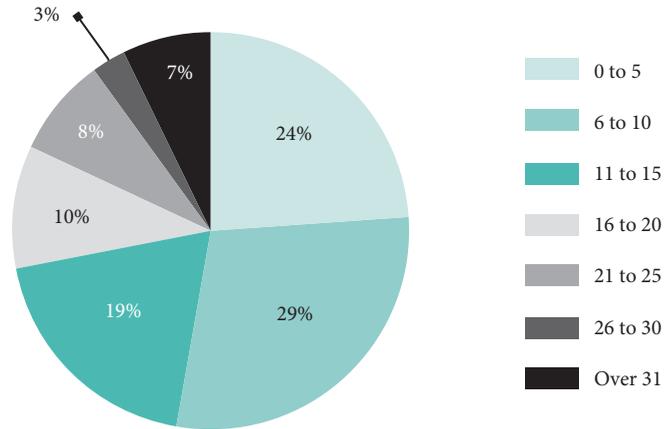


Figure 1.2 Source: Own Collection.

Based on the analysis by groups defined by the age of the companies under study, it is observed that those between 21 and 25 years in the industry have a greater market orientation (4.16), while the lowest level it is among those that are 6 to 10 years old (3.84), however the differences detected are not statistically significant (Table 2).

Table 2. Market Orientation in tourism companies based on their age.

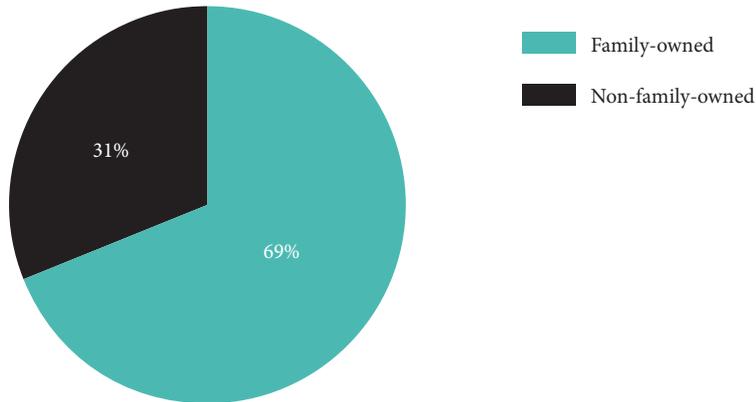
	Number of cases	Mean	Sig.
1- 0 to 5 years	69	3.84	0.476 (n/s)
2- 6 to 10 years	82	3.79	
3- 11 to 15 years	54	3.93	
4- 16 to 20 years	29	3.86	
5- 21 to 25 years	23	4.16	
6- 26 to 30 years	7	3.97	
7- Over 31 years	21	3.73	
Total	285	3.86	

Statistically significant differences between groups: (*)p<0.1, (**):p<0.05, (***)p<0.01.

Source: own collection.

Figure 3 shows the composition of the tourism businesses based on ownership of the business, defining two groups, family-owned businesses and non-family-owned businesses. As can be seen, 69% of the businesses are family owned, while 31% are non-family owned.

Figure 3. Family-owned vs. Non-family-owned tourism companies



Source: own collection.

The level of market orientation is slightly higher in non-family companies (3.89) than in family businesses (3.85), however these differences are not statistically significant (Table 3).

Table 3. Market orientation of tourism businesses according to their family nature vs. not familiar.

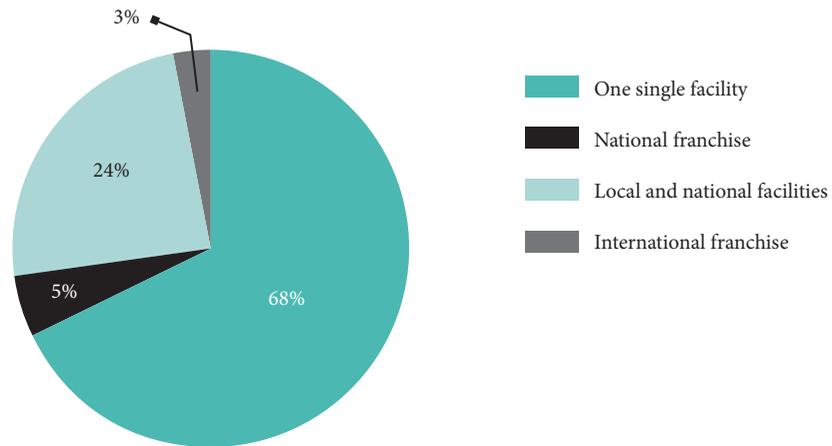
Ownership	Cases	Mean	Sig.
Family-Owned	196	3.85	0.660 (n/s)
Non-Family	89	3.89	
Total	285	3.86	

Statistically significant differences between groups: (*):p<0.1, (**):p<0.05, (***):p<0.01.

Source: own collection.

In relation to the number and type of businesses within the participating companies, 68% of the 285 tourism companies have a single facility, 24% have more than one facility and the same owner and located at a local or national level, 5% corresponds to national franchises and 3% to international franchises (Figure 4).

Figure 4. Number and type of establishments.



Source: own collection.

In the following table 4, we can see that the level of market orientation shown by the national franchises is the highest in the different subgroups analyzed (4.20), likewise the lowest level of market orientation is observed in companies with only one establishment (3.80), however, the differences found are not statistically significant.

Table 4. Source: Market orientation according to the number and type of business in tourism companies.

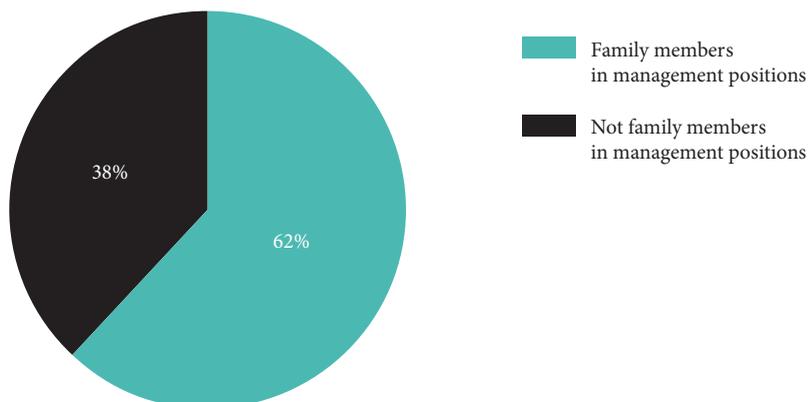
Business Type	Cases	Mean	Sig.
One single facility	194	3.80	0.146(n/s)
Local and national businesses	69	3.96	
National franchise	13	4.20	
International franchise	9	4.01	
Total	285	3.8648	

Statistically significant differences between groups: (*): $p < 0.1$, (**): $p < 0.05$, (***): $p < 0.01$.

Source: own collection.

The distribution of tourism businesses in regards to the control of the business shows that 62% of the management falls on family members of the owners, while in 38% the management is occupied by non-family members, this information is concentrated in figure 5.

Figure 5. Managerial positions in tourism companies



Source: own collection.

The level of market orientation is very similar in the tourism companies where the managerial positions are occupied by family members of the owners (3.85) and in the companies where the management is occupied by non-family members (3.87), being these slight differences statistically not significant (Table 5).

Table 5. Market orientation in regards to the management control of tourism companies.

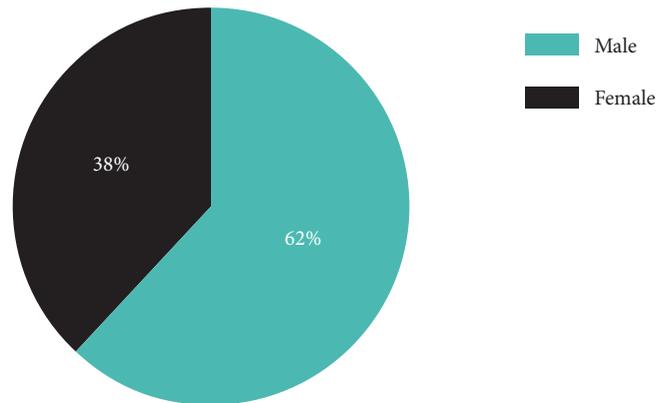
Management control	Cases	Mean	Sig.
Family members in management	177	3.85	0.825(n/s)
Non-family members in management	108	3.87	
Total	285	3.8648	

Statistically significant differences between groups: (*):p<0.1, (**):p<0.05, (***):p<0.01.

Source: own collection.

Out of the 285 companies participating in the study, 62% have a *male* general manager and the remaining 38% have a *female* one (Figure 6).

Figure 6. Gender of the general manager



Source: own collection.

In the analysis of the groups defined by the gender of the general manager of the business, the market orientation is slightly higher in companies where the general direction is occupied by a woman (3.93) than in those that are occupied by a man (3.83). These differences are not statistically significant (Table 6).

Table 6. Market orientation according to the gender of the general director of tourism companies.

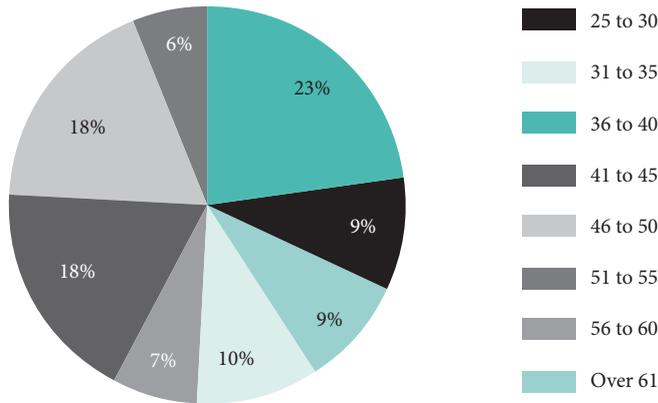
General Manager's Gender	Cases	Mean	Sig.
Male	178	3.83	0.283(n/s)
Female	107	3.93	
Total	285	3.86	

Statistically significant differences between groups: (*): $p < 0.1$, (**): $p < 0.05$, (***): $p < 0.01$.

Source: own collection.

The sample was also analyzed based on the age of the CEO of these companies, with 23% corresponding to business with a director aged between 36 and 40 years, 18% cases CEO's are 46 to 50 years old, 18% correspond to directors between 41 and 45 years and 10% corresponds to directors between 31 and 35 years. The rest of the information is shown in figure 7.

Figure 7. Age of the general manager.



Source: own collection.

When analyzing the level of market orientation in tourism companies based on the groups defined by the age of the CEO, it is found that the highest level is found in businesses with a general manager between 36 and 40 years old (4.11), while the lowest level is found among companies that have a CEO with an age of 61 and over (3.45). These differences are statistically significant, which indicates that the age of the director is an important factor in achieving greater market orientation and should be considered in order to implement different strategies in the marketing of the business ($p < 0.05$) (Table 7).

Table 7. Market orientation in tourism companies based on the age of the CEO.

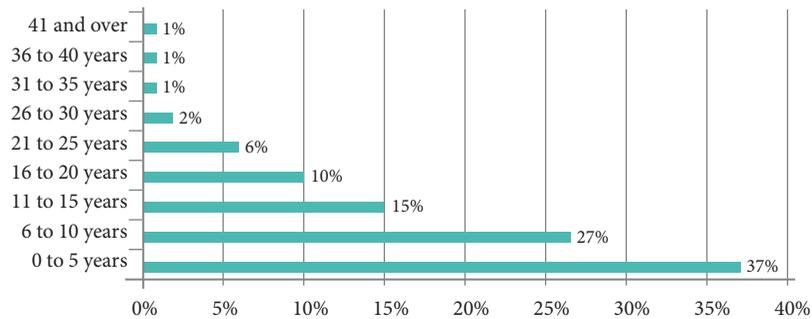
Age of the CEO	Cases	Mean	Sig.
25 to 30 years	25	4.05	
31 to 35 years	28	3.76	
36 to 40 years	64	4.11	
41 to 45 years	52	3.69	
46 to 50 years	52	3.99	0.002**
51 to 55 years	18	3.70	
56 to 60 years	20	3.82	
Over 61	26	3.45	
Total	285	3.86	

Statistically significant differences between groups: (*): $p < 0.1$, (**): $p < 0.05$, (***): $p < 0.01$.

Source: own collection.

In relation to the seniority of the CEO in the company, it can be seen that 37% have a seniority of 0 to 5 years, 27% have between 6 and 10 years, 15% from 11 to 15 years and 10% between 16 and 20 years. The complete information can be seen in figure 8.

Figure 8. Distribution of tourism businesses based on the seniority of CEO's.



Source: own collection.

When analyzing the level of market orientation in the groups of tourism companies defined from the seniority of the CEO in the business, it is observed that the highest level occurs when the CEO is between 21 and 25 years old (4.24) and the lowest level is found in the companies in which the CEO is 36 to 40 years old (2.40). These differences are statistically significant, which implies that the time spent working in the company by the CEO is an important factor to achieve a greater approach to the consumer ($p < 0.05$) (Table 8).

Table 8. Market orientation in tourism companies depending on the seniority of the CEO.

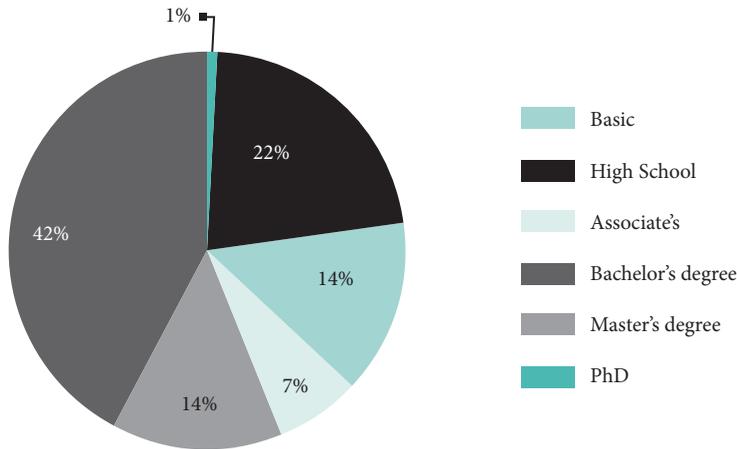
Seniority	Cases	Mean	Sig.
0 to 5 years	107	3.88	0.015**
6 to 10 years	76	3.82	
11 to 15 years	42	3.84	
16 to 20 years	28	3.95	
21 to 25 years	16	4.24	
26 to 30 years	7	3.77	
31 to 35 years	4	4.16	
36 to 40 years	3	2.40	
41 and over	2	2.90	
Total	285	3.86	

Statistically significant differences between groups: (*): $p < 0.1$, (**): $p < 0.05$, (***): $p < 0.01$.

Source: own collection

The distribution of tourism companies in the study in relation to the level of training of the CEO shows that 42% of them have a director with undergraduate or engineering training, 22% have a high school studies, 14% have basic studies and another 14% have a master's degree. These data can be analyzed completely in figure 9.

Figure 9. Distribution of tourism businesses according to the level of education of CEO's.



Source: Own collection.

When reviewing the level of market orientation in the groups of companies defined from the educational level of CEO's, it was found that the highest figures are found in business with a CEO with a master's degree (4.06) and very close to those who have a general manager with bachelor's / engineering studies (4.05), meanwhile the lowest level is found in companies where the CEO has a doctorate degree (2.92). The differences found are statistically significant, so the studies of the CEO is an important element to consider for the marketing of the business and its attention to the consumer ($p < 0.01$) (Table 9).

Table 9. Market orientation of tourism companies from the level studies of CEO's.

CEO's studies	Cases	Mean	Sig.
Basic	40	3.46	0.000***
High school	63	3.65	
Associate's degree	19	3.93	
Bachelor's degree	121	4.05	
Master's degree	40	4.06	
PhD	2	2.92	
Total	285	3.86	

Statistically significant differences between groups: (*) $p < 0.1$, (**) $p < 0.05$, (***) $p < 0.01$.

Source: own collection.

Conclusions and implications

Based on the analyzed information, it is possible to conclude the importance of knowing more deeply how market orientation is presented in tourism companies and their variations between subgroups defined from factors related to the business and the person who leads it, all of these aiming to be able to take different measures in order to increase the level of implementation of marketing in organizations and to promote a better performance.

Aspects like the industry branch, the age of the CEO, the seniority of the director in the company and his / her academic training are important for the delimitation of differentiated strategies, while factors such as the age of the company, family or non-family property of the business, the number and type of establishments, the occupation of managerial positions by family members and the gender of the general manager did not show statistically significant differences between the subgroups.

In this sense, and focusing on the factors in which there were significant differences, in terms of the industry branch it was found that the entertainment establishments have a greater success in the implementation of marketing (average MO = 3.99) unlike the travel agencies that have the lowest value (average MO = 3.84), which suggests, first of all, that travel agencies have an area of opportunity to strengthen their mechanisms for collecting information, dissemination in the organization and use to generate better answers for their customers. It is also important to acknowledge that it is useful to observe with greater attention the marketing practices that are currently being implemented by tourism companies classified as entertainment, with the objective of identifying the practices that have allowed them to have better results in their customer care activities, which can serve as a guide for companies of other tourist tours.

Similarly, regarding the age of the CEO, it was found that the highest level of market orientation is found in tourism companies with CEOs with a range of 36 to 40 years of age (mean MO = 4.11) and the lowest value was found in the group of 61 years and over (average MO = 3.45), in terms of the seniority of the CEO it was observed that the group of businesses with a CEO that has been in the company between 21 and 25 years has more market orientation (average MO = 4.24) and the group in which the director has between 36 and 40 years in the company has the lowest market orientation (average MO = 2.40). Finally, the groups of companies where the CEO has a master's degree (average of MO = 4.06) and bachelor's degree or engineering (average of MO = 4.05) present the highest levels of market orientation, while in companies where the CEO has doctorate studies present the lowest level (MO = 2.92).

Some practical implications derived from the personal characteristics of the general director of tourism businesses point to the need to reconsider the desirable profile of this position, in order to promote a better definition and implementation of marketing practices, to be preferably occupied by people with a Master's or bachelor's / engineering degrees,

who are young people but at the same time have enough experience in the operation of such companies. On the other hand, the factor “gender” is not very relevant in the profile of the CEO, since the differences found are not significant between companies that are led by a man or a woman.

Finally, it is important to point out the need to increase the studies about tourism companies and the ways in which they can be strengthened to improve their performance, since tourism is a fundamental sector in the economy of the State of Aguascalientes, the country and worldwide, and represents a key factor due to its contribution in the generation of wealth and as a trigger for social development.

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The Use of Agile and Cascading Models and Methodologies in the Creation of Innovative Companies: Startups

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Abstract

In the current literature of the business and management sciences, various researchers, academics and professionals in the field of business, have considered that information technologies play an essential role in companies, regardless of the size they have and the sector that they belong, since an adequate implementation of information technologies in business processes will allow companies to improve their level of performance and competitiveness. Therefore, the essential objective of this study is to analyze the use of different models and methodologies of the creation of innovation through the uses of information technologies. The results obtained indicate that there are several models and methodologies, including agile and cascading, that could significantly improve the results of the companies.

Keywords: Agile and cascading models, methodologies, creation, innovation.

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Introduction

The technological advance and the use of information technologies in daily life have led to the proliferation of businesses in the area of technologies without an adequate structure in their processes generating a greater expense in the long term. Therefore, the importance of applying a methodology in their business processes, and thus achieve competitiveness and quality worldwide. The diversity of existing methodologies in the industry has grown considerably and even more in the area of information technologies, where it paves the way to 21st century businesses, such as Ecommerce, Network Marketing, Startup, Freelance, to name a few. As mentioned by Muñiz (2017), “in a scenario in constant evolution as the current one, we will only succeed in companies and managers that are able to generate experiences in their clients, strengthening their relationship with the strategy, processes and equipment of the organization.”

This chapter shows the implementation of different useful tools in the development and management of an innovative startup project or company, based on the analysis of the concept of entrepreneurship. The characteristics of methodologies such as Six Sigma, SCRUM, CMMI are analyzed as well as the integration of these methodologies in the development of an innovative Startup company. The use of these methodologies in the creation of a company implies a philosophy of innovation of quality. The proposal of integration of methodological tools allows structuring a business model adding a proposal of value for the clients, as well as obtaining better results with the launch of products or services.

Literature review

Entrepreneurship

Entrepreneurship is understood as the attitude and aptitude that people have to venture into a new project where they can see their ideas and opportunities crystallized. Entrepreneurship is a concept widely used in the business world, because it is related to the aspects that give rise to a new company, new products or innovation. Entrepreneurship is essential in societies, because it allows companies to seek innovations and transform knowledge into new products. There are even higher level courses that aim to train qualified individuals to innovate and modify organizations, thus modifying the economic scenario.

In recent years, the factors that condition the creation of a company have become more relevant (Bruno & Tybjee, 1982; Gartner, 1985; Jackson & Brophy, 1986; Dubini, 1989; Veciana, 1988, 1999; Ragab, 1992; Gnyawali & Fogel, 1994; Malecki, 1997), not only related to legal issues, public policy and support instruments, but also related to issues in a social and cultural context. The perceptions of the new entrepreneurs about their firm conviction and viability about creating a company have to do, to a large extent,

with the socio-cultural environment and can significantly affect the decision to become an entrepreneur.

In several countries of the world, the government and non-governmental organizations have been developing in the last decades various programs aimed at the promotion and creation of new companies. Likewise, an effort is made to progressively reduce the barriers to their creation; however, despite these efforts, a high percentage of new companies disappear in the first years of their creation (over 60% interrupted their activities in the first 5 years).

If we start from the base of the support measures that are granted, such as: efficient information services, consultancies, training for entrepreneurs, channels accessible to required financing and the improvement of administrative and legal conditions, as well as the favorable attitude of the society can favor the creation of companies, having a positive impact on employment generation, economic growth and innovation. So to consider the creation of new companies as the engine of economic and social development will lead to take into account all the factors that in some way or another affect the business activity.

In the field of research, institutional economic theory considers, in its general assumptions, not only economic issues, but also the political and socio-cultural aspects that affect the behavior of individuals, and some authors consider it as the most appropriate framework to analyze the influence of environmental factors in the creation of companies. This theory develops a very broad concept of institution, in which institutions were visualized as a set of implicit or explicit rules that regulate the decision making by individuals and that to a certain extent can limit, voluntarily or involuntarily, the ability to choose.

The organizations or bodies will be constituted “by groups of individuals united by a common purpose in order to achieve certain objectives.” These include policies (for example: companies, unions, NGOs, etc.), social organizations (for example: schools, universities, etc.) “(North, 1993b: 3). In this way, organizations and their entrepreneurs participate, among others, in political, economic, social and educational activities, these agents being the ones that drive institutional change.

It is necessary to make it clear that even when entrepreneurs play an important role as promoters of institutional change, both formal and informal rules, as well as the application or implementation thereof, greatly condition their performance. This institutional structure determines the type and specific characteristics of the organizations while the entrepreneurs of these organizations induce, guide and direct institutional change.

Thus, the entrepreneur as responsible agent and promoter of the emergence of new companies will be conditioned by factors, whether formal or informal, that have to do with his environment and will be responsible for implementing a series of rules and regulations, as well as observing a series of informal norms attributed to his learning and the process of interaction in society.

From this perspective, it can be established that the emergence of new companies is given by:

- Government policies, referring to the legislation that regulates the environment of business activity, as in the more specific field of tax incentives and administrative procedures that are directly related to the creation of a company.
- Global support programs for small and medium-sized enterprises (SMES) and the creation of a company.
- Specific programs to support new entrepreneurs: services and information programs, advice, training, etc. as well as support for the acquisition of loans, grants, venture capital, guarantees.
- The culture of society with respect to the development of business activity and entrepreneurship in a given society.
- Social prestige of the entrepreneur.
- Support from family and friends to the idea of starting a business.
- Socialization process
- Attitudes of society towards the creation of companies: perception of desirability, perception of viability and intentionality of the members of a determined society towards the creation of new companies.

Therefore, the values and attitudes of society towards business activity will condition the degree of desirability of creating a company, while the facts and examples of companies and entrepreneurs that make the possibility of successfully founding it seem favorable, favorable legislation and the adequate mechanisms to support new companies will influence the degree of viability, the spirit, the tradition and the business culture, and the credibility of the event of founding a company. The ability to be an entrepreneur can be reinforced by specific education and training in business creation.

Startup

The consumption habits of people and the mentality of the new entrepreneurs have made the business world evolve. Information technologies are part of daily life in most activities that are developed in all areas, new entrepreneurs have been able to enhance human interaction with technologies to innovate and define successful business ideas (Alvarez, 2013). Startup deals with a recent business model with acceptance in the business world and its main characteristic is to be generally related to an innovative technological idea. It is a company in its early stage; created or not by an entrepreneur. Unlike a SME, Startup is based on a business that will be scalable faster and easier, making use of digital technologies. This type of company seeks to create a new business model. Your initial intention is to create a novel product or service (USIL, 2017).

The International Business School (2017) publishes that an entrepreneur looks for business opportunities, how to make it profitable and chooses proven and sustainable business models, investing based on a business plan,

his intention is to create a viable business in a set timeframe. For its part, the founder of a Startup seeks to create something innovative, with possibilities of being successful, and if not, it usually provides a valuable idea.

The term Startup only applies when the project is starting. Once it has escalated, it will no longer be called Startup. The main technological giants that started in this way are: Facebook, Airbnb, Uber; these companies were successful and therefore no longer considered within that category. The operation and organization of these companies are different from the traditional structures of a business. One of the most important aspects is the human organization, which consists of **several professionals specialized in different sectors** (marketing, programmers or researchers, among others) internet (Siqueira, 2015). Some of the essential features of Startups are shown in Table 1.

Table 1. Characteristics identified in companies Startup.

Feature	Meaning
Innovative, multidisciplinary companies of creative young people.	They take risks and look for disruptive formulas to solve problems. The variety of professional profiles enriches the corporate structure. Some of the most demanded profiles in them are: engineer, commercial, lawyer or programmer.
Direct contact with the client and a methodology close to trial and error.	Two factors that allow the Startup to find new and innovative solutions to the needs of consumers.
They learn from mistakes to evolve.	Usually, they debate between evolution and disappearance.
Growth capacity	It is a constant in Startups, and if they achieve success, they are able to replicate their business model in different markets.
Good communication and high level of motivation.	The work environment is usually characterized by a high level of motivation and satisfaction on the part of all team members.

Source: Own elaboration, with information from Siqueira (2015).

The expert suggests that aside from type of entrepreneurship and the forms of investment that are sought for a Startup, sight of three elements must not be lost for the project to work and not remain in the statistics, which indicate that before two years 75% of the enterprises in Mexico fail (Dorantes, 2017). Based on Dorantes (2017), these three elements are:

- **Identify the problem and commit to it:** the expert stresses that a Startup is called to understand the whole philosophy around a problem and to solve it.
- **Build the team:** businesses of this type require people who complement each other.
- **Leave the environment:** in order to mature, it is important to have frequent contact with potential clients, understand what they are looking for and what the expectations are and, above all, to recognize the target audience.

Financial support of Startups

Siqueira (2017) publishes that, although they are small companies, the characteristic of Startups is that they usually have a low cost of implementation; in this way they attract private investors who provide the entrepreneur with capital, experience and a network of contacts. The characteristics of this type of investor condition to be part of the business and generally invest money in different startups trusting that some of them reach success and go from being a project of great potential to a consolidated company.

OECD (2016) publishes that Startups at some point in their growth need markets, institutions and networks for their creation and expansion. In the innovative dynamism of a country, an important factor is the creation of new innovative companies. The emergence of Startups through innovation increases competition for the introduction of new products, services, creates new markets and offers innovative solutions to emerging problems which rejuvenates the business sector. The creation and expansion of startups depend on multiple factors, such as: the existence of a scientific base, a business-friendly environment and a financial sector available to invest in medium-term high-risk projects.

There is no single and optimal formula for promoting this type of company, each ecosystem develops its own approach in line with the characteristics of its country, scientific, technological, productive system and vision of development. The instruments for startups are differentiated according to the gap over which they act (financial, information, demand, culture, regulatory framework) and according to the stage of development of the companies (OECD, 2016).

Lean startup methodology

This methodology is applied mainly to launch startups in the technology innovation sector. Initially it was a good practice of a company in Silicon Valley, San Francisco, USA. and it has grown and matured into a methodology for innovative companies. It consists of developing a business model where it is worked on a prototype implement it and see the different contingencies that may arise and the needs of customers, instead of trying to predefine all the different aspects from the beginning and calculate them in detail. The objective is to eliminate inefficient practices and focus resources and efforts on increasing the value of the product or service (Garcia, 2015).

Lean Startup seeks to establish agile development methodologies so that the product or service remains in constant development until finding the right business model. One of the essential philosophies of this system is that a finished product is not necessary, it's possible to start with a minimum viable product (pvm) to adapt the process to the needs of the modifications and the needs of the clients (Flores, 2013). The objective of this methodology is to reduce the risk in the launching of new products and

services. Learning from the client becomes the main key, and the faster and cheaper, the better (García, 2015).

The Lean Startup philosophy according to Garcia (2015) is based on three pillars:

- *Validated learning*. Startups do not exist only to create things, earn money and serve clients, they are created to learn and build a sustainable business. This learning can be validated scientifically through the implementation of experiments with a certain frequency, which allows entrepreneurs to check each element of the business vision.
- *Iteration: cycle build-measure-learn*. The main activities are converting ideas into products, measuring how customers respond and deciding whether to make changes or maintain the strategy.
- *Experimentation and innovation accounting*. It is necessary to focus on how to measure progress, establish milestones, and prioritize work to improve results and quantify innovation.

To talk of innovative companies is to consider companies that incorporate innovative methodologies for the realization of different processes; one case is the use of agile principles in development, creation and logistics processes, which allows them to become companies with higher levels of efficiency and functionality.

SCRUM

One of the most popular agile methodologies implemented in innovative companies or startups is SCRUM, which is an adaptation methodology, iterative, fast, flexible and effective, which guarantees transparency in communication between the actors participating in a project and creates an environment of collaboration and shared responsibility. This methodological tool can be implemented in the creation of products and development of services and projects in any type of industry and requires the collaboration of the members involved. Each of the projects in any organization are affected by time, cost, quality, resources in general and organizational capacities limitations, this makes planning, execution and administration complex.

A characteristic of this methodology is that it works in collaborative teams with multifunctional and self-organized teams. The development of work in projects with the SCRUM methodology is divided into short work cycles called Sprints. The activities are carried out by some actors with defined roles and activities. The main roles are three, which are mandatory to achieve the good performance of any project. These roles are known as core roles and are: Product Owner, Scrum Master and Scrum Team. Another important actor in this methodology is the stakeholders, which are the people or organizations affected by the activities and decisions of a company, it is they who must clearly understand the SCRUM principles to be a success in any organization.

The principles of SCRUM are its foundation and are applicable to any type of project or organization and must be respected in order to guarantee the appropriate application. The methodology integrates its principles in the SBOK guide and these are applicable to portfolios, programs and/or projects of any size and complexity sector, products, services or any result delivered to stakeholders. The principles of SCRUM are: Empirical Process Control, Self-Organization, Collaboration, Value-based Prioritization, Time Boxing, and Iterative Development.

Following are some of these principles.

The principle of Empirical Process Control is that decisions are made based on observation and experimentation, rather than detailed initial planning, this process is based on three main ideas: Transparency, Inspection and Adaptation. Transparency, allows all phases of any process to be observed by any person. This methodology promotes an easy and transparent flow of information throughout the organization and creates an open work culture. Inspection is represented by the following actions, such as the use of Scrum board and other information radiators that show the progress of the Scrum Team in completing the tasks of the current sprint, as well as the feedback of the client and other stakeholders during the processes of development and prioritization of activities.

This phase is also characterized by the review and approval of deliverables by the Product Owner and the customer. The Scrum team and stakeholders learn through transparency and inspection to make improvements in work already in progress. Adaptation. Scrum Team members discuss the impediments to completing their tasks and seek help from other group members. Scrum Team members with more experience become mentors.

Self-Organization. This feature is very important in innovative companies or startups; for this the employees are self-motivated and seek to accept greater responsibility. The preferred leadership style is Servant Leadership, which emphasizes obtaining results and focuses on the needs of the Scrum Team. Benefits of self-organizing teams. These teams believe in what is done and have a shared responsibility and ownership. Motivation leads the team to a level of better performance and creates an innovative and creative environment that leads to growth. An important aspect in this methodology is collaboration, which refers to the main Scrum team, which works and interacts with stakeholders to create and validate the results of the project and thus meet the objectives set in the project vision.

Results

The collaborative work is observable in innovative companies and they gather some basic characteristics such as:

- Awareness. Be aware of the work of others.
- Articulation. The work must be divided into units among the members of the team and once the work has been done, reintegrate it.
- Appropriation. It is the adaptation of technology according to the situation.

Scrum is driven by the objective of offering maximum business value in a minimum period of time. To achieve this, we have Iterative Development of Deliverables. This model is flexible and supports changes, the User Stories at the beginning of the project are high-level functionalities, and are known as Epic(s). Epics are usually large enough to be completed in a sprint, so they are divided into User Stories. Once a company is in operation, it can implement different tools and models that support its performance and competitiveness, such is the case of the model CMMI.

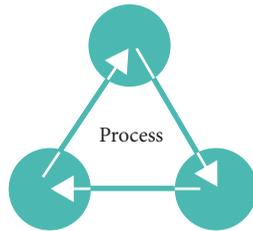
Capability Maturity Model Integration (CMMI)

The complexity of the products requires an integrated vision of the functioning of organizations. CMMI can reduce the cost of process improvement in companies that depend on multiple functions or groups to achieve their objectives.

CMMI. Capability Maturity Model Integration.

It is a model that contains the best practices and helps organizations improve their processes. It is a model that ensures quality and seeks the continuous improvement and maintenance of the quality of products and services of organizations through the analysis and redesign of the processes that exist in an organization. The Software Engineering Institute (SEI) has found several dimensions on which an organization can focus to improve its business (Chrissis, Konrad & Shrum, 2007). Figure 1. It illustrates the three critical dimensions that organizations focus on: people; procedures and methods; tools and equipment.

Fig. 1 The Three Critical Dimensions.



Source: Own elaboration.

The most important initial step for process improvement is to encourage the support of the organization through strong sponsorship from senior management. To obtain this sponsorship, it is often beneficial to expose the performance results experienced by other organizations that have used CMMI to improve their processes (Gibson, Goldenson & Kost, 2006).

Brief history of CMMI.

Since 1991, CMMs have been developed for countless disciplines. Some of the most notable include models for engineering systems, software engineering, software acquisition, development and product and process development integration. The CMMI project was created with the intention of solving the problem of using multiple CMMs. The combination of different models allowed organizations to improve their processes with integrated models and the combination of existing model materials. In 2000 the first CMMI model (V1.02) was published, which was designed to be used by development organizations in the search for process improvement.

Subsequently different versions were created, specifying CMMI model for development, the CMMI model for acquisitions and the CMMI model for services, which was built on the other models, was called version 1.2. In 2008 the development of version 1.3. was started, which guarantees the consistency between the three models (Chrissis *et al.*, 2007). Version 1.3 of CMMI for Acquisition CMMI-ACQ, groups the process areas into the following categories: Process Management, Project Management, Support, Acquisition Engineering (Gallagher, Phillips, Richter, Shrum, 2011)

CMMI for Services CMMI SVC, is a model that helps service provider organizations to establish and manage successful services. [Forrester 2011, SEI 2010a]. This model offers the possibility of deciding on the services and standards that can be offered, ensuring that what it takes to offer the service is available and implements a new system, modifies or eliminates an existing one.

Six Sigma

The Kaizen Institute in its portal (2015), comments on the origin of this methodology, which was developed by Motorola in the 1980s, created by

the engineer Bill Smith and in 1991 was implemented as a process improvement methodology in Allied Signal but it is not until Jack Welch uses it in General Electric, when it is known internationally. This methodology focuses on the reduction or elimination of defects or failures in the development of a product or customer service (Pande, 2002). The goal of Six Sigma is to reach a maximum of 3.4 defects per million events or opportunities (DPMO), a defect for Six Sigma is any event in which a product or service fails to meet customer requirements (Lean Solutions, 2017).

Six Sigma is a data-driven, customer-focused, results-oriented application that uses statistical tools and techniques to systematically eliminate defects and inefficiencies to improve processes.

The word Sigma (σ) is Greek, it represents a unit of statistical measurement that defines the standard deviation of a population, and it is the variability or dispersion of a data set and is calculated with the standard deviation.

The Six Sigma approach is to discover the causes of the problem, symbolically represented by $Y = F(X)$. Where: Y represents the problem that occurs because of (s) X. Six Sigma has the following characteristics:

- Customer-focused
- Focused process
- Data-based / factual
- Incredible performance gains
- Structured improvement deployment
- Validation through key business results

The objectives of Six Sigma are:

- Variation reduction
- Elimination of defects
- Performance improvement
- Improvement in customer satisfaction
- Strengthening the bottom line

In general, most companies are regularly located at level 3 sigma, with 6.7% defects in their processes, their goal would be to move to level 6 as shown in table 2.

Table 2. Levels of Six Sigma.

Sigma Level σ	% Defects	Performance
6	0.00034%	99.9997%
5	0.0233%	99.98%
4	0.6210%	99.3%
3	6.6807%	69.15%
2	30.9%	31%
1	69.1%	6.7%

Source: Own elaboration.

The Six Sigma methodology is a process of systematic, scientific and fact-based improvement, it is a DMAIC (Define, Measure, Analyze, Improve and Control), where improvement technologies are applied. The decade phase description and the roles that are presented in the DMAIC process are shown below based on the 6Sigma study Targeting Success manual.

- **Define:** Determine the problem or defect and program participants.
- **Measure:** Measure the result (Y) to determine the current performance process.
- **Analyze:** Identify the X, real causes of the problem or defect.
- **Improve:** Determine the process by eliminating the defects.
- **Control:** Take measures in order to guarantee the continuity of the improvement and value it in economic terms and customer satisfaction.

Six Sigma Roles

- **Executive Leadership:** Responsible of ensuring that everyone understands the vision of the organization, sponsors and owners of processes
- **Champions:** They are chosen by the executive leadership, organize and direct the initiation, deployment, and implementation of Six Sigma throughout the organization.
- **Master Black Belts:** They are internal experts selected by the champions. They manage the selection of projects and the human resources.
- **Black Belts:** Responsible for carrying out the activities assigned by the Champions and the executive leadership.
- **Green Belts:** Part-time workers in the implementation of Six Sigma.
- **Project Team:** They are the employees that work in the Six Sigma project.

Key Stakeholders

- **Customers:** Important people whose requirements must be considered.
- **Employees:** People involved in the Six Sigma project.
- **Suppliers:** People who provide inputs to the process.
- **End users:** People who use the product or service.

The application of this innovative methodology that involves the whole organization, uses general methods, statistics and technologies makes it an important tool in companies that have a strong relationship with information technologies such as Startup especially in the area of software development. We can conclude that the use of information technologies has made the business world evolve with the application of methodological tools and models that provide the best practices, help organizations to improve their processes and guarantee continuous improvement. New entrepreneurs rely on agile methodologies for the creation and development of their products and services following innovative business models.

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