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Managerial skills as a business competitiveness strategy in small and medium enterprises (SMEs)

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ABSTRACT   The objective of this research is to measure the influence of managerial skills as an internal factor for business competitiveness as perceived by entrepreneurs of small and medium enterprises (SMEs) in Hermosillo, Sonora, Mexico. For this purpose, a mixed methodology was used in order to collect, analyze and link the quantitative and qualitative data and provide greater scientific evidence to the research. The first phase was exploratory and included an interview with an expert panel using the Delphi method in order to contextualize the problem to analyze and validate the measurement instrument. In the second phase, 108 SMEs were sampled and a statistical analysis was carried out through structural equation models (PLS). The conclusions showed that managerial skills are an internal factor of SMEs that significantly influence their business competitiveness.

KEYWORDS   Business competitiveness, manager, managerial skills, small and medium enterprises.

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Habilidades gerenciales como estrategia de competitividad empresarial en las pequeñas y medianas empresas (Pymes)

RESUMEN Esta investigación tiene como objetivo medir la influencia de las habilidades gerenciales como factor interno en la competitividad empresarial que perciben los empresarios de las pequeñas y medianas empresas (Pymes) de Hermosillo, Sonora, México. Para tal efecto, se utilizó una metodología mixta con el fin de poder recolectar, analizar y vincular los datos cuantitativos y cualitativos, y responder al planteamiento de la investigación con mayor evidencia científica. La primera fase fue exploratoria mediante entrevista a panel de expertos usando el método Delphi, para contextualizar la problemática objeto de análisis y validar el instrumento de medida. En la segunda fase se muestrearon 108 Pymes y se realizó un análisis estadístico utilizando modelos de ecuaciones estructurales (PLS) para obtener resultados. Las conclusiones demostraron que las habilidades gerenciales son un factor interno de las Pymes que influyen considerablemente en su competitividad empresarial.

PALABRAS CLAVE competitividad empresarial, gerente, habilidades gerenciales, pequeñas y medianas empresas.

Habilidades gerenciais como estratégia de competitividade empresarial nas pequenas e medias empresas (PME)

RESUMO Esta pesquisa tem como objetivo medir a influência das habilidades gerenciais como um fator interno na competitividade empresarial percebida por empresários de pequenas e médias empresas (PME) em Hermosillo, Sonora, México. Para isto, foi utilizada uma metodologia mista a fim de recolher, analisar e vincular os dados quantitativos e qualitativos e responder à abordagem de pesquisa com maior evidência científica. A primeira fase foi exploratória por meio de entrevistas ao painel de especialistas usando o método Delphi para dar contexto à problemática a analisar e avaliar o instrumento de medição. Na segunda fase foram amostrados 108 PME e foi realizada uma análise estatística usando equações estruturais (PLS) para obter resultados. As conclusões demonstraram que as habilidades gerenciais são um fator interno das PME que influenciam consideravelmente a sua competitividade empresarial.

PALAVRAS CHAVE competitividade empresarial, gerente, gestão, pequenas e médias empresas, habilidades gerenciais.

Introduction

Today, organizations are part of a heterogeneous business context which is characterized by economic events such as globalization, competitiveness, new technologies and the proliferation of complex and unpredictable environments. It is a context characterized by continuous change that forces organizations to adapt in order to compete both in international and domestic markets (Gómez, 2008).

This creates a global dynamics that forces organizations either to be competitive or to disappear. In this sense, business competitiveness has become a requirement for the survival of companies (Artail, 2007). Understanding this is particularly important for SMEs, which due to their structural characteristics tend to be at a disadvantage with respect to large companies, since they have more resources and capacities at their disposal (AECA, 2002).

Given this situation, the current market dynamics requires the development of productive sectors and managerial skills become a source of competitive strategy by promoting decision-making and market differentiation (De Meuse, Dai & Wu, 2011).

The need to do new things properly and proactively becomes a challenge for the companies that compete in the global market. It is no longer about having had an advantage in the past. It is necessary to generate results that put the organization at an advantage in an uncertain space (Eisenman, 2012). In this sense, it is assumed that through competitive strategies an organization's management can develop a wide range of alternatives that allow it to leverage its strengths and opportunities in order to generate competitive advantages (Spendlove, 2007).

This research aims to analyze the importance of managerial skills as a strategic resource for an organization and as a valuable source of value creation in today's organizations and the development of their capacity to compete in order to lead the market through continuous creation and business competitiveness. The objective of this work is to measure the influence of managerial skills as an internal factor of business competitiveness as perceived by entrepreneurs in SMEs in Hermosillo, Sonora, Mexico by means of a causal statistical model. The conceptual framework and the methodology used will be presented in the following four sections. Data analysis and results will be explained then as well as the conclusions and some recommendations and social implications will be given.

Theoretical-conceptual framework and hypothesis formulation

Literature review

Strategy is a vital management tool to determine a company's orientation, as it facilitates its transformation and adaptation to the reality of a competitive environment (Hudson & Smith, 2007). Authors such as Garrido (2003) and Thompson & Strickland (2004) see strategy as an administrative process that involves understanding the organization to visualize its future through innovation and creativity, which implies the use of conceptual and practical tools in order to create advantages for success and closely monitor the environment.

It is interesting to incorporate a philosophical vision of management based on strategy. According to Romero (2001), Dess & Lumpkin (2003), Garrido (2003) and Thompson & Strickland (2004), if a company's vision, mission, objectives, principles, values, strategies and planning are taken into consideration, the conjunction of these elements results in a philosophy that provides dynamism to the organization. It can be said that this philosophy becomes a quality to survive and progress in the presence of a strategy as long as competitiveness is seen as intrinsic to a company's organizational capacity (Antonorsi, 2004) to then specify its management's actions.

In order to focus on the concept of strategy as a source of competitive advantage, Lloyd-Reason & Mughan (2002) suggest that the managers' behavior should be based on conceptual thinking as an essential tool to manage and understand the organization. Their behavior should also possess a strategic vision to understand the influence of the environment in the organization and their managerial skills should allow them to make assertive decisions based on environmental information and conditions.

Currently, personal, interpersonal and managerial skills for management are becoming increasingly important in companies and organizations. In this sense, Goyal (2013) states that people with excellent personal skills reach the peak of their

personal and organizational effectiveness, since interpersonal skills allow workers to interact successfully in an increasingly challenging and changing work environment.

Agolla & Van Lill (2013) state that the main internal factors of innovation for organizations are organizational strategy, organizational climate, strategic leadership, entrepreneurial capacity and intangible resources. Certainly, motivation, leadership, decision making, delegation and conflict management are some of the interpersonal skills that effective management has to put into practice.

Zahra, Neubaum & Naldi (2007) suggest that today's changing world requires managers with skills that are necessary to achieve competitive results: excellent interrelationships with their workers, suppliers, customers and all those who are part of the value chain. In addition to skills and aptitudes, current managers must have practical knowledge in the fields of economics, finance, commerce, law, marketing, human management and they must be fluent in two or more languages.

Mitchelmore & Rowley (2013) integrate the previous models of business competencies in order to develop a business competency framework. They emphasize that management is a key factor for business competitiveness and it must have the following elements: entrepreneurial skills, business and competency-based management.

Tonidandel, Braddy & Fleenor (2012) conducted a study with the purpose of examining the relative importance of the four dimensions of managerial skills (technical ability, administrative ability, human ability and citizen behavior) to predict the effectiveness of management. Their objective is to explore whether the relative importance of these skill dimensions varies according to gender or levels of organizational hierarchy. The researchers found that only the hierarchical level is a significant moderator of the skill-effectiveness relationship.

For their part, Koenigsfeld, Youn, Perdue & Woods (2012) classify managerial competencies into five domains: conceptual-creative, managerial, administrative, interpersonal and technical. Teamwork, communication, coordination, execution and continuous learning are critical competencies for the success of middle managers (Xuejun Qiao & Wang, 2009).

The changes suffered by organizations undoubtedly affect their workers' actions. Therefore, there is a need to guarantee that they will contribute in the best way possible to the results expected by the company. Hence, managers must have the ability to get the best from workers, while at the same time promoting their professional satisfaction. Therefore, it is essential that all managers are willing to take on these challenges and this implies having the basic and essential competencies for successfully working in today's organizations (Spendlove, 2007).

The influence of managerial skills on the business competitiveness of SMEs

Managerial skills, according to Longenecker, Moore, Petty & Palich (2009), are formed by the set of knowledge, skills, abilities, behaviors and aptitudes needed by someone to be efficient in a wide range of managerial tasks in diverse organizations. On the other hand, it cannot be ignored that people resort to various skills in their daily lives, including those that are necessary to be efficient in their personal relationships, recreational activities and work tasks. Our focus will be managerial competencies and their relationship with business competitiveness.

In this regard, it is important to point out that these competencies are varied, since their behavior can be analyzed from multiple points of view and their definitions may have heterogeneous nuances. Competency-based management implies adopting an approach that goes beyond the traditional personality trait approach, which is based on a series of important advantages both for the organization and the person (Bateman & Snell, 2005).

Various studies such as those carried out by Samujh & El-Kafafi (2010), Barhem, Younies & Smith (2011), Tonidandel *et al.* (2012) and Kramar & Steane (2012) detail and classify in their conclusions the importance of developing managerial competencies as a strategic business must. Therefore, managerial skills are key to managing effectively Innovation + Development (I & D), since a manager's technical capacity is not enough to be an effective I & D manager. Differences in learning styles are fundamental in the acquisition of interpersonal skills, which can be directed to develop leadership competencies that contribute to the creation of competitiveness strategies (see, for example, Dreyfus, 2008; De Meuse *et al.*, 2011, Koenigsfeld *et al.*, 2012; Thorn, 2012; Tonidandel *et al.*, 2012; Zhang, Zuo & Zillante, 2013).

Based on the above, the model has five managerial skills:

1. *Operational and administrative*: the management's ability to have an administration model with a set of tasks and processes focused on the improvement of internal organizations in order to increase their capacity to achieve their purposes and their operational objectives.

2. *Strategic management*: the management must have the ability to create the process to formulate and implement actions. Through analysis and diagnosis of the organization's external and internal environment, it should highlight competitive advantages, seize opportunities or defend itself against threats posed by the environment in order to achieve its objectives.

3. *Strategic planning*: the management's ability to formulate, develop and implement the company's operational plans in order to achieve short or long-term objectives and goals.

4. *Globalization*: ability to make appropriate decisions with a high degree of confidence, which will allow the company to develop high negotiating capacity, financial analysis and extensive knowledge of methodologies for evaluating projects, processes and products.

5. *Human resources*: ability to identify the value of human resources and create strategies to enhance them as an intangible asset with the ability to support increased productivity, boost innovation and thus competitiveness.

In this work, the concept of competitiveness suggested by Aragón & Rubio (2006) was adopted. The authors defines it as a company's capacity to achieve a favorable competitive position that allows it to perform better than its competitors.

In this sense, the following work hypotheses are considered. They are based on the skills considered in the model proposed for the creation of a competency-based management profile:

H1: *Managerial competency skills, measured through the operational and administrative variable, affect business competitiveness directly and positively.*

H2: *The managerial competency skill, measured through strategic administration, has a direct and positive effect on business competitiveness.*

H3: *The managerial competency skill, measured through strategic planning, has a direct and positive effect on business competitiveness.*

H4: *The managerial competency skill, measured through the vision of globalization, affects business competitiveness directly and positively.*

H5: *The management competency skill, measured through the human resources variable, affects business competitiveness directly and positively.*

Given the work hypotheses, the proposed causal model would be reflected as shown in Figure 1. It establishes the influence of managerial skills on business competitiveness based on the theoretical support and the exploratory argumentation made by a panel of experts.

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FIGURE 1. Conceptual model

Source: Proposed model, own elaboration. 2015.

After arguing and supporting theoretically the proposed causal relationships, the following section explains in detail the analysis methodology with the aim of contrasting the hypotheses proposed.

Methodology

In order to contrast the hypotheses formulated, a series of actions carried out under two phases of a mixed investigation are developed. In the qualitative phase, an exploratory analysis was carried out based on a panel of experts (also known as Delphi method) with the purpose of validating the measurement instrument (apparent validity). The panel was composed of six experts belonging to three sectors related to SMEs: government, chamber and education, which were chosen according to the objective previously determined and criteria such as experience, position, responsibility, access to information, availability and SMEs-related characteristics. In this context, the importance of the so-called triple helix model (Mejía, 2004, González, 2009) conformed by university, industry and government must be highlighted. In short, the first phase is an open discussion panel.

Similarly, the second phase is a survey of experts through a semi-structured questionnaire. The objective of the questionnaire is to determine, based on the opinion of the experts, the influence of managerial skills as an internal factor for competitiveness of SMEs in Hermosillo, Sonora, Mexico.

The members of the research group compiled the information by using a structured questionnaire with personal interviews. The interviews were directed to the managers of SMEs affiliated to the National Chamber of Commerce, Services and Tourism (Canaco-Servytur)[1] and the National Chamber of the Transformation Industry (Canacintra)[2], based in Hermosillo, Sonora, Mexico.

Sample size (108 valid questionnaires, see Table 1) was obtained once the cleaning process was carried out. In this project and for the convenience of our research, a formula was used for a finite population and sampling without replacement:

$$n = \frac{NZ^2pq}{(Z^2pq) + [d^2(N-1)]}$$

TABLE 1. Data sheet

GEOGRAPHIC SCOPE	Hermosillo, Sonora
UNIVERSE	538 entrepreneurs
SAMPLING UNIT	SMEs affiliated to Canaco-Servytur and Canacintra
METHODOLOGY	Survey with semi-structured questionnaire
SAMPLING PROCEDURE	Finite sampling without replacement
SAMPLE SIZE	108 valid surveys
SAMPLE ERROR	± 5,0 %
CONFIDENCE LEVEL	90 %; pq = 0,5
FIELD WORK DATE	August-December, 2015

Source: Own elaboration, 2015.

The information was obtained through responses to a questionnaire with closed questions. The interviewees had to show their level of agreement or disagreement with a series of statements by using a 7-point Likert scale. Specifically, the information provided by the manager referred to the influence of managerial skills as an internal factor of business competitiveness of SMEs in Hermosillo on the one hand and on the other, to the entrepreneur's sociodemographic characteristics.

Statistical data analysis

For statistical data analysis, the Structural Equation Model (SEM) was applied with the partial least squares (PLS) technique, using the

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1 Organization that represents, defends and promotes the state's business activities involving commerce, services and tourism by providing advice and quality attention to meet the needs of entrepreneurs, promoting the development of society and our region. http://www.canacohermosillo.com.mx

2 Organism that represents and defends the general interests of the transformation industry. It is an organ for consultation and collaboration in the design and execution of policies, programs and instruments that facilitate the expansion of the economic activity. It promotes the activities and the development of its affiliated companies. http://www.canacintrahermosillo.com/

SmartPLS 2.0 statistical software package (Ringle, Wende & Will, 2005). The following sections explain each of the statistical criteria proposed by the PLS technique in terms of the validity of the causal model proposed.

Validation of the measurement model

In order to validate the measurement model, the methodological actions described below were carried out.

Content validity of measurement scales

To this end, the specialized literature on managerial skills and business competitiveness was thoroughly revised with the aim of theoretically supporting the constructs and their indicators.

Apparent validity of measurement scales

It was verified that each measurement indicator actually reflected what was intended to be measured. The statements were adapted after the previous exploratory studies and then the statistical instrument was submitted to a panel of experts by means of the qualitative technique of the Delphi method in order to refine what was not related to the investigation. This allowed the authors of this document to guarantee obtaining satisfactory results, as proposed by Zaichkowsky (1985).

Individual validity of the indicators

For this statistical procedure, the individual reliability of the reflective indicators was checked. They must have a factor load (λ) equal to or greater than 0.707 for strong theoretical constructs (Carmines & Zeller, 1979) and equal to or greater than 0.550 for flexible theoretical models (Hair, Anderson, Tatham & Black, 1999). It should be borne in mind that factor loads that show that the variance shared between the construct and its respective indicators must be greater than the variance of the error by 50 percent. Considering the previous acceptance criterion ($\lambda \geq 0.550$), the reflective indicators that did not comply with the statistical rule were refined (see Table 2). The part of the variance that is explained by the construct (Bollen, 1989) was also calculated by means of the commonality (λi^2) of the manifest variables. Once the indicators were refined, a new estimation of the measurement model was carried out in order to establish their commonality. To determine the previous statistical procedure, the square of the correlation between the manifest variables and their own latent variable was estimated. For example, for the first indicator (OG3) there is a factor load of $\lambda = 0.661$, which represents a commonality of $\lambda^2 = 0.4369$, which indicates that

TABLE 2. Individual reliability of indicators

INDICATORS	INDIVIDUAL RELIABILITY
OG3: *"Ability to transcend from the logical to the abstract and find the true causes and solutions of a specific situation or problem, whose results are sustained with a high level of efficiency and reliability"*	($\lambda = 0,661$; $\lambda^2 = 0,4369$)
OG4: *"Ability to analyze, organize and present numerical data in an exact manner"*	($\lambda = 0,659$; $\lambda^2 = 0,4342$)
OG5: *"Ability to handle techniques that allow to formulate problems in such a way that they can be solved through arithmetic operations"*	($\lambda = 0,618$; $\lambda^2 = 0,3819$)
OG6: *"Ability to communicate orally and in writing with other people"*	($\lambda = 0,696$; $\lambda^2 = 0,4844$)
OG7: *"Ability to express effectively through a technical and professional language with a very spontaneous tone, according to level of training and experience, as well as the position occupied, which directly affects the worker's level of personal impact"*	($\lambda = 0,693$; $\lambda^2 = 0,4802$)
OG8: *"Exceeds customer's expectations, demonstrating total commitment in the identification of any problem and providing effective solutions for its solution"*	($\lambda = 0,697$; $\lambda^2 = 0,4858$)
OG12: *"Ability to reach agreements which are satisfactory for everybody"*	($\lambda = 0,681$; $\lambda^2 = 0,4637$)
PE18: *"Ability to improve the environmental performance of the organization's activities"*	($\lambda = 0,692$; $\lambda^2 = 0,4788$)
GL8: *"Extensive knowledge of international trade"*	($\lambda = 0,594$; $\lambda^2 = 0,3528$)
GL9: *"Ability to plan and develop commercial strategies, find commercial opportunities and new markets abroad to set prices and establish collection policies"*	($\lambda = 0,648$; $\lambda^2 = 0,4199$)

Source: Own elaboration based on the data collected, 2015.

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43.69% of the variance of the manifest variable is related to the profile skills by managerial competencies construct.

Validity of constructs through convergence and statistical divergence

In order to determine this statistical test, the reliability of the construct was analyzed through the measurement of Cronbach's alpha coefficient (α) and the composite reliability coefficient of the construct (ρc), with the aim of demonstrating the internal consistency of the indicators that measure the reflective constructs. Despite the fact that 0.700 is an acceptable value for Cronbach's alpha and for composite reliability in the first stages of the investigation, for more advanced stages the acceptable values are between 0.800 and 0.900. Values of 0,600 or less indicate lack of reliability (Henseler, Ringle & Sinkovics, 2009, p. 299). Table 3 shows that Cronbach's alpha is greater than 0.700 in all cases (Nunnally, 1978; Sanz, Ruiz & Aldás, 2008). Regarding the composite reliability coefficient or Spearman's rho coefficient, the values of all the reflective constructs are higher than 0.600 (Bagozzi & Yi, 1988; Chin, 1998; Steenkamp & Geyskens, 2006). Likewise, it was verified that all the composite reliability coefficients were higher than Cronbach's alpha values of 0.70 for each of the constructs proposed (Fornell & Larcker, 1981). In the same way, the coefficient of the average variance extracted (AVE) must be greater than 0.500 (Bagozzi, 1981;

Fornell & Lacker, 1981) and must be significant at the 0.01 level (Sanzo, Santos, Vázquez & Álvarez, 2003), which indicates that more than 50% of the construct variance is due to its indicators. Therefore, it could be said that the constructs proposed in the model have a satisfactory internal consistency (see Table 3).

To assess construct validity, two fundamental analyzes were carried out:

1) *Convergent validity* (Fornell & Larcker, 1981) has been calculated by analyzing the average extracted variance (AVE) for the reflective constructs. The AVE coefficient provides the amount of variance that a reflective construct obtains from its indicators in relation to the amount of variance caused by the measurement error. As shown in Table 3, the AVE coefficient for the constructs with reflective indicators must be greater than 0.500 (Bagozzi, 1981; Fornell & Larcker, 1981), which indicates that more than 50% of the variance of the construct is due to its measurement indicators. The previous analysis demonstrates the convergent validity of the model proposed.

2) *Discriminant validity* determines if the construct proposed is significantly distant from other constructs it is theoretically related to (Roldán, 2000). In this sense, the values of the correlation matrix between constructs, which is formed by the square root of the AVE coefficient that must be greater than the rest of the same column, were examined. That is,

TABLE 3. Reliability of constructs

INDICATORS CONSTRUCT	CRONBACH'S ALPHA (A)	COMPOSITE RELIABILITY (P_c)	AVERAGE VARIANCE EXTRACTED (AVE)
Operational and administrative (OG1; OG2; OG9; OG10; OG11)	0,8483	0,8916	0,6223
Strategic administration (AE1; AE2; AE3; AE4; AE5; AE6; AE7; AE8; AE9; AE10; AE11; AE12; AE13; AE14; AE15; AE16)	0,9667	0,9699	0,6683
Strategic planning (PE1; PE2; PE3; PE4; PE5; PE6; PE7; PE8; PE9; PE10; PE11; PE12; PE13; PE14; PE15; PE16; PE17)	0,9708	0,9734	0,6834
Globalization (GL1; GL2; GL3; GL4; GL5; GL6; GL7; GL10; GL11; GL12; GL13; GL14)	0,9509	0,9572	0,6516
Human resources (RH1; RH2; RH3; RH4; RH5; RH6; RH7; RH8; RH9; RH10; RH11; RH12; RH13; RH14; RH15; RH16)	0,9734	0,9758	0,7167
Business competitiveness (CE1; CE2; CE3; CE4; CE5; CE6; CE7; CE8; CE9; CE10; CNVC1; CNVC2; CNVC3; CNVC4; CNVC5; CNVC6; CNVC7; CNVC8)	0,9726	0,9749	0,6839

Source: Own elaboration based on statistical analysis on SmartPLS 3.0.

the AVE coefficient of the latent variables can be greater than the square of the correlations between the latent variables, which indicates that the greater the variance portion between the components of the latent variables, the greater the differences between the blocks of indicators (Chin, 2000; Sánchez & Roldán; 2005; Real, Leal & Roldán, 2006). According to Sánchez & Roldán (2005), for discriminant validity to be obtained, the indicators on the diagonal must be greater than the indicators below the diagonal (see Table 4). As shown in that table, all the indicators comply with the statistical criteria proposed in previous paragraphs. Therefore, the discriminant validity of the different constructs that are part of the PLS model proposed is guaranteed.

Validation of the structural model

Regarding the validity of the structural model (Johnson, Herrmann & Huber, 2006), the empirical tests described below were carried out.

Check the explained variance (R^2)

The endogenous or dependent variables (R^2) must be equal to or greater than 0.100 (Falk & Miller, 1992). From this empirical criterion, all the constructs have a satisfactory predictive power for the proposed structural model (Table 5). All causal relationships proposed as hypotheses in the analysis models meet the acceptance criteria.

TABLE 4. Matrix of standardized correlations between the different latent variables

CONSTRUCT	1	2	3	4	5	6
Strategic administration (1)	**0,8174**					
Business competiveness (2)	0,7753	**0,8269**				
Globalization (3)	0,8572	0,7807	**0,8072**			
Operational and administrative (4)	0,8153	0,6772	0,777	**0,7888**		
Strategic planning (5)	0,907	0,7564	0,8836	0,8176	**0,8266**	
Human resources (6)	0,8671	0,7437	0,8525	0,724	0,8736	**0,8465**

Note: The indicators on the diagonal (in bold) represent the results of the square root of the AVE between the constructs and their respective measurements. The indicators below the diagonal are the correlations between the constructs. According to Sánchez & Roldán (2005), for discriminant validity to be obtained, the indicators on the diagonal must be greater than the indicators below it.

Source: Own elaboration based on the results obtained, 2015.

TABLE 5. Results of the statistical analysis

HYPOTHESIS	SIGN OF THE HYPOTHESIS	STANDARDIZED PATH COEFFICIENTS (B)	T VALUE (BOOTSTRAP)
H$_1$: Operational and administrative ⤑ Business competitiveness	+	0,041	0,2763***
H$_2$: Strategic administration ⤑ Business competitiveness	+	0,3174	1,5892 n.s.
H$_3$: Strategic planning ⤑ Business competitiveness	+	-0,0034	0,0181n.s.
H$_4$: Managerial competencies through the globalization variable ⤑ Business competitiveness	+	0,3779	2,2185**
H$_5$: Human resources ⤑ Business competitiveness	+	0,1196	0,6628 n.s.

Note: *** t value > 2,576 (p < 0,01); ** t value > 1,960 (p < 0,05); * t value > 1,645 (p < 0,10); n.s. = not significant

CONSTRUCT	EXPLAINED VARIANCE R²	*STONE-GEISSER* Q² TEST
Strategic administration		
Business competitiveness	0,6552	0,2661
Globalization		
Operational and administrative		
Strategic planning		
Human resources		

The Stone-Geisser test or the Q² parameter (cross validated redundancy) must be greater than zero for the construct to have predictive validity (Chi, 1998). However, Sáenz, Aramburu & Rivera (2007) consider that when Q² values are negative and very close to zero, the construct is within the recommended limits to have predictive power.

Source: own elaboration based on the statistical analysis on SmartPLS 3.0.

*Verify the standardized
regression coefficients (β)*

These factors must reach at least a 0.2 value to be considered significant (Chin, 1998). As can be seen in Table 5, the causal relationships proposed in hypotheses 2, 3 and 5 do not meet the empirical acceptance criterion.

Goodness of fit index (GoF)

Finally, after demonstrating the validity of the model, the goodness of fit index of the structural model, which was 0.6630 (see Table 6), was calculated. This result indicates that there is a good fit, which complies with the empirical criterion stating that goodness of fit must vary between 0 and 1. The higher the value, the better the index (Tenenhaus, 2008).

Contrast of work hypothesis

Once the measurement and structural models were validated, the results obtained were analyzed to compare the five hypotheses formulated in the model proposed, in order to justify and argue possible deviations from the expected results.

The results of the structural model show that hypothesis 4: "*The managerial competency skill, measured through the vision of globalization perceived by managers of SMEs of Hermosillo, Sonora, Mexico, affects business competitiveness directly and positively*" (**H4**: $\beta = 0.3779$; $p < 0.05$), as evidenced by the statistical parameters. Therefore, there are sufficient indications to accept hypothesis **H4**. However, there was not enough evidence to

approve the **H1** hypotheses ($\beta = 0.041$, $p < 0.01$): "*managerial competency skills, measured through the operational and administrative variable, affect business competitiveness directly*", **H2**: ($\beta = 0.3174$; ns): "*the managerial competency skill, measured through strategic administration, has a direct and positive effect on business competitiveness*", **H3** ($\beta = - 0.0034$; ns) : "*The managerial competency skill, measured through strategic planning, has a direct and positive effect on business competitiveness*" and **H5**: ($\beta = 0,1196$; ns): "*the managerial competency skill, measured through the human resources variable, affects business competitiveness directly and positively*". These results will be further explained in the discussion section.

Likewise, in view of the greater relational equity perceived by the managers of SMEs in Hermosillo, Sonora, this fact increases skills levels for the improvement of managerial competencies, given that it has the expected effect (H4: $\beta = 0.3779$, $p > 0.01$). This confirms that at higher levels of relational equity, there is a positive and significant influence on business competitiveness of SMEs in Hermosillo, Sonora, Mexico.

Figure 2 shows the conceptual model and the work hypotheses based on the theoretical models proposed by the scientific community. This replicates and proposes new causal relationships to the case of managerial skills in the SMEs of Hermosillo, Sonora, Mexico.

Discussion and interpretation of results

The Delphi method allowed the contextualization of the problem to analyze as well as the

TABLE 6. Goodness of fit index (GoF)

CONSTRUCT	AVERAGE VARIANCE EXTRACTED (AVE)	EXPLAINED ARIANCE (R²)	GOODNESS OF FIT INDEX*
Strategic administration	0,6683		
Business competitiveness	0,6839	0,6552	
Globalization	0,6516		
Operational and administrative	0,6223		
Strategic planning	0,6834		
Human resources	0,7167		
Arithmetic mean	0,6710	0,6552	0,6630*

* Goodness of fit index (GoF) = √ (AVE)* (R²) (Tenenhaus *et al.*, 2005; Esposito *et al.*, 2008; Tenenhaus, 2008).
Source: own elaboration based on the statistical analysis on SmartPLS 3.0.

FIGURE 2. Final model for the development of managerial competencies for business competitiveness of SMEs Hermosillo, Sonora.

Source: own elaboration, 2015.

validation of the measurement instrument. To carry out this work, the triple helix model of relations between university, industry and government, widely used in innovation studies (Mejía, 2004, González, 2009), was reviewed. For this research, the main characteristic was the selection of experts from three sectors related to SMEs. Two of them belonged to the government sector (represented by the state of Sonora's Secretary of Economy and the Director of Nacional Financiera [NAFIN]). Two of them were from the industrial sector (represented by the President of the National Chamber of Commerce, Services and Tourism (Canaco-Servytur) and the President of the National Chamber of the Transformation Industry (Canacintra). This work was carried out with these two cameras. Two of the experts belonged to the education sector (academics that carry out projects with SMEs in higher education institutions). The fundamental interest of the application of the qualitative study (also known as Delphi method) is based on the opinions of a panel of experts (also known as the Delphi method), which was developed according to what was pointed out by Yáñez and Cuadra (2008) and Ortega (2008). The study was carried out in two stages: an open discussion panel and a survey through a semi-structured questionnaire.

Experts felt that managerial skills for business competitiveness are below average. In order to formulate strategies that maintain or increase a sustainable competitive advantage, SME managers need to develop information analysis skills. Managerial competencies provide such skills

through the work done by managers to acquire business strategies in order to achieve a competitive market advantage.

Once measurement and the structural model were validated, the results obtained were examined to contrast the research hypotheses formulated, and thereby justify and argue possible deviations from the expected results.

Strategic planning and strategic administration are different concepts (Ansoff, Declerck and Hayes, 1976), since working based on a shared mission, vision and values contributes to the definition of a business strategy that is the foundation for strategic planning (Román, Arbeláez, and Patiño, 2012). However, the results show that entrepreneurs perceive both concepts as similar, but as Martínez and Martínez (2009) state, content validity is a robust criterion against certain statistical analyzes based on covariance. This implies that although the study subjects confuse the concepts in practice, the theory differentiates them clearly.

For the proposed model, all the indicators comply with the empirical criteria suggested, except for the strategic administration and strategic planning constructs. Although they are different, according to theory are statistically similar by almost 91%. Martínez and Martínez (2009) assert that content validity acts as a robust criterion against certain statistical analyzes based on covariance.

The results of the structural model show that managerial competencies through the globalization variable as perceived by the managers of

SMEs in Hermosillo, Sonora, Mexico, have a significant influence on business competitiveness (**H4**: β = 0.3779; p < 0.05), possibly because managers are aware of current economic and market trends, as well as their obligation to help their organizations develop a strategic vision that allows them to face likely scenarios and make more suitable decisions, so that the obstacles that limit the efficient performance of their companies are solved.

The **H1** (β = 0.041; p < 0.01) hypothesis has been rejected: *"Managerial skills, as measured through the operational and administration variable, affect business competitiveness directly and positively"*, possibly because entrepreneurs of SMEs exercise business management in accordance with their training and experience, using their own strategies, making use of a technical and professional language with a spontaneous tone and not relying on numerical analysis for offering effective solutions to problems with workers or clients. However, the current environment of the country's economy requires greater management innovation and participation in the constant search for strategies that promote company development and growth to face current competitiveness.

Concerning the non-significance of **H2**: (β = 0.3174; ns): *"The managerial competency skill, measured through strategic management, has a direct and positive effect on business competitiveness"*, the result seems reasonable because the manager's professional training and ambition make him disregard the company's macro environment. The lack of creativity, entrepreneurial spirit and innovation on the part of management means that decision making is not effective and nowadays a proactive manager is needed, as foresight is one of the basic characteristics to face today's changing world.

In regards to **H3** (β = - 0.0034; ns): *"The managerial competency skill, measured through strategic planning, has a direct and positive effect on business competitiveness"*, the non-significance apparently occurs because the SME manager does not develop formal alternatives to improve the company's organizational performance. The competitive environment requires business success, which requires the management to analyze the real context faced by the organization.

Regarding the non-significance of **H5**: (β = 0.1196; ns): *"The managerial competency skill, as measured through the human resources variable, affects business competitiveness directly and positively"*, the result seems reasonable because for the

SME manager socialization and teamwork of employees are not relevant. Also, personal judgments and discipline methods are used to measure worker performance. Speaking about the importance of human resources means distinguishing the contributions that they have made in the current world, mainly in the business world. Currently, being a bridge between the needs and interests of a company and its staff has contributed significantly to raising the level of competitiveness in each organization that aims to structure and direct the efforts of a number of people around its growth and the professional and even personal growth of each individual that is part of it.

Conclusions and business implications

Today's business managers must be able to combine managerial skills, creativity and entrepreneurship within a perspective that can embrace design and production, tradition and innovation, reality and vision everyday life and the future, all at the same time (Eisenmann, 2012).

The results of the first model in terms of the impact of managerial competencies on business competitiveness, most of the indicators in the operational and administrative competencies decrease. In the strategic planning skill, only one is eliminated and two are removed in the globalization skill. All the indicators were kept in the rest of the constructs, which shows their importance in the appreciation of the human resources and business competitiveness constructs and demonstrates a greater willingness of the SME managers to evaluate business competitiveness more objectively, which is reflected in the strength of the indicators.

The statistical results show that for the SME manager, strategic management and strategic planning are similar. However, Hitt, Duane & Hoskisson (2008) mention that strategic management is a state of culture that affects all company areas. They define strategic planning as a process that generates competitive advantages and gives long-term sustainability to the company. A company can have strategic planning and not be strategically managed, but if it has that culture, strategic planning becomes a daily and natural responsibility and a commitment of its managers and directors (French, Kelly & Harrison, 2004). The SME entrepreneur has to understand that in

order to achieve strategic planning it is necessary to establish the habit of creating, analyzing and using regularly critical information for decision making, to generate strategic thinking in the staff that makes decisions, and, above all, to encourage an environment in which non-traditional thinking becomes a vehicle that promotes creativity, innovation and sustainable development.

The results obtained in this research highlight that for SME entrepreneurs in the city of Hermosillo, Sonora, Mexico, it is important to recognize with scientific support the need to seek business excellence through the achievement of sustained advantages in the market, because excellence is associated with business competitiveness and in order to achieve it is necessary to have a dynamic management that is updated and has operational and managerial skills, strategic management, strategic planning, globalization and human resources, always open to organizational and technological change.

Bearing this scenario in mind, it is necessary to include measures aimed at the business competitiveness of SMEs in the state of Sonora, Mexico. First, SMEs must be supported to progressively overcome productive deficiencies through the improvement of business management, expanding their options to face international competition. A strategy could be the adoption of managerial skills. Secondly, it is necessary to move forward with integrated initiatives that aim to produce structural changes in these businesses.

Therefore, the conclusion is that strategic planning in business management will determine the actions that the management must carry out to achieve the organization's objective, because it will determine the route to follow to carry out its activities. When strategic planning has not been defined, a company's behavior will be incongruous and sometimes even chaotic, since the direction to be followed or what is to be achieved have not been defined. The value of the strategy comes from developing the managerial ability to intervene in a complex system with limited information and thereby produce a predictable and desirable change in the system's balance.

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