

MEASURING THE COMPETITIVENESS LEVEL IN FURNITURE SMEs OF SPAIN

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ABSTRACT

The first decade of the 21st century is characterized for businesses uncertainty, market globalization, and a higher level of competitiveness, what makes small and medium enterprises rethink their strategies and adjust it to changes and requirements, such as market, clients and customers. Also, the market pressure about customizing even more the products and services demanded by consumers, is taking enterprises to adopt competitiveness as a strategy, which allows cost reductions through an efficient use of technology in the organization. Hence, in this empiric study trough a sample of 322 enterprises of the furniture industry in Spain, the effects of the competitiveness are analyzed in these companies. Results show that financial performance, cost reduction and the use of technology impact positively on the competitiveness level of companies, whereby could be considered that competitiveness is a good company strategy.

Keywords: *Competitiveness, financial performance, cost reduction, technology.*

1. INTRODUCTION

In the current literature commonly is considered to small and medium-sized enterprises (SMEs) sector that contributes a significant percentage to the economic growth of any country, that they contribute with about 80 percent of global economic growth (Jutla *et al.*, 2002). Also, in emerging countries or industrial growth SMEs employ a high percentage of workers, and it is the sector that generates the greater opportunities for employment and labor development (Singh *et al.*, 2010). In the manufacturing sector, SMEs are generally supplying of parts, components or sub assemblers of large companies due mainly that can produce these materials with a high level of quality and at a price much lower compared to large companies, which affects its level of competitiveness (Singh *et al.*, 2008).

On the other hand, the globalization of markets and the uncertain business environment have increased the level of competitiveness, which is putting increasingly greater pressure organizations to acquire and to increase their competitive advantages. Therefore, manufacturing SMEs are not exempt from this pressure, therefore Drihlon and Estime (1993) considered that the acquisition of a higher level of competitiveness isn't a requirement only for SMEs, but also for large enterprises, because to survive and thrive in the current 21st century organizations will have to make greater efforts to acquire or improve constantly its competitive advantages, and as a result,

their level of competitiveness (Grennan et al., 1997), because it can provide them a higher level of growth and performance (Peters & Austin, 1985).

In this way, the high levels of global competition in the current market is along the majority of SMEs or participate exclusively in a local market, in which both their products and their sales are usually heavily segmented in one part of the market (Singh et al., 2006). Therefore, the liberalization of world trade is causing increasingly are more companies, both producers of manufacturing as providers, seeking to establish themselves in the markets of emerging countries, which means that local SMEs will have serious difficulties to survive, grow, and achieve a higher level of competitiveness (Singh *et al.*, 2007).

At the same time, this atmosphere of high global competition demands SMEs a higher level of capacity to maintain or increase steadily the performance of the business and the processes of manufacturing (Denis & Bourgault, 2003). Similarly, Vos (2005) considered that the managers or owners of SMEs management skills are very limited, by which it must be improved so that companies are able to successfully implement business strategies that will improve their competitiveness. However, such organizations have a number of limitations such as e.g. shortage of resources, structure organizational flat, lack of trained personnel and low level of innovation that is necessary to reduce or eliminate that SMEs are in a position to increase its level of competitiveness (Singh *et al.*, 2010). There are several disagreements about the competitiveness measurement, due the used indexes and interpretations have generated polemic (Ezeala-Harrison, 2005). Also, studies of competitiveness have a tendency to use economic parameters as synonymous, as trade performance and real exchange rates (Cas, 1988), terms of trade (Arndt, 1993), relative labor costs (Rao & Lampriere, 1992), growth in GDP per capita (WEF, 2001) and growth of productivity factor (Porter, 1990; Markusen, 1992; Dollar & Wolf, 1992; Ezeala-Harrison, 1995).

In this sense, most of the works emphasize the measurement of trade performance, which does not adequately reflects the competitiveness in national and international business levels (Ezeala-Harrison, 1999; 2005). So, this empirical study contributes to the use of a scale to measure the SMEs competitiveness, regardless of trade performance.

2. LITERATURE REVIEW

In trying to measure competitiveness, immediately raises two problems: what competitiveness level should be tested? Should the measurement of competitiveness be at enterprise, industry, national or international level? This generate an interest among researchers, academics, professionals, entrepreneurs, politicians and students is the competitiveness to business level, because is essential to review the macro-level measure of competitiveness (Gorynia, 2005), this analysis is not possible to do in short term, but rather in long term and this can favor the organization flexibility (Buckley et al., 1988).

Similarly, exists in current literature a complexity in the measurement of the term competitiveness, as some researchers competitiveness can be viewed as the ability of a good performance (Garengo et al., 2005; Choudhary, 2001; Garg et al., 2003; Vastag & Montabon, 2001), for others it is the generation and maintenance of competitive advantages (Kim & Arnold, 1996; Carpinetti et al., 2000; Fleury & Fleury, 2003; LAU, 2002; Lagace & Bourgault, 2003), for some more is a process of benchmarking (Denkena et al., 2006;) Local et al., 2006; Ribeiro & Cabral, 2006; St - Pierre & Delisle, 2006), for others is the trade performance and trade terms (Cas, 1988; Arndt, 1993), for some others are labor costs and the growth of GDP (Rao & Lampriere, 1992; WEF, 2001), and for others is factor productivity growth (Porter, 1990; Markusen, 1992; Dollar & Wolf, 1993; Ezeala - Harrison, 1995).

The great diversity of competitiveness measurements used by researchers and academics, suggest an idea of the complexity of the concept and the variation in its measurement. However, many of these measurements include implicitly or explicitly, among other factors, employment, quality of employment generation, distribution of income and extensive objectives (Gorynia, 2005). However, in the literature are published few research papers that describe the measurement of the competitiveness at the enterprise level (Porter, 1990, 1998; Hamel & Prahalad, 1990; Casson, 1991; Hill & Jones, 1992; Stalk et al., 1992; Faulkner & Bowman, 1995; Rumelt, 1997; Rugman & Hodgetts, 2000; Gorynia, 2005).

Thus, in terms of establishing the measurement of business competitiveness is clear performance measurement should be organization-wide and not just in any functional area (Buckley et al., 1988). This may be feasible if used to the performance of the market share, which is a quantitative variable key in the results of such measurement, and often used in the literature for this purpose (Gorynia, 2005). However, too complicated a

possible explanation for the performance of the market share of the multi-products of transnational corporations or corporations, whose results vary according to the type of product (Kirpalani & Balcome, 1987;) Buckley et al., 1988), and facilitates its explanation in small enterprises that regularly cater to very specific market niches (Buckley et al., 1988;) (Gorynia, 2005).

Thus, one of the studies that analyze more retail business competitiveness is the one presented by Ezeala-Harrison (2005), who believes that competitiveness can be measured through seven indexes: 1) nature of competitive advantage, 2) capacity for innovation, 3) the brand extension, 4) restriction of the regulations of the environment, 5) quality in the education of mathematics and science((6) quality in the education system, and 7) ease of access to credit. Another study of the measurement of business competitiveness is also presented by Fendel and Frenkel (2005), who did not specify how should perform the measurement only have eight rates for their calculation: 1) physical infrastructure, 2) human capital, 3) efficiency of goods market and (d) work, 4) efficiency of financial market, 5) technological development, 6) opening and market size((7) sophistication of business, and 8) innovation, thereby reducing its application.

Similarly, another important study published in literature is developed by Gorynia (2005), who proposes a model for the measurement of business competitiveness developed in the following way: $EC = \{DCCP-DFCC-DCCP'-DCS\}$, where DCCP = differences in current competitive position, DFCC = differences on the future competitive position, DCCP' = differences in the current competitive potential, DCS = difference in the competitive strategy. Another important proposal is the one presented by Singh et to the. (2006), who developed a structural index of competitiveness in which quantifies the level of competitiveness of companies, but do not specify clearly how to measure this level.

There's no doubt, that the study by Buckley et al (1988) moreover to be the most accepted and used by researchers and academics, it is the most complete, the reporting a measure of competitiveness in four levels (product, company, industry and nation), and the simplest measure and interpret. These researchers differentiate three groups essential business competitiveness: 1) competitive performance, 2) competitive potential, 3) management and processes. This categorization known as the 3 Ps, describes the three representations of processes of business competitiveness, starting with the measurement of the potential that describes the entries in the operation, performance measurement, the results of the operation and the measurement of processes of management of the operation. From this perspective, the competitiveness cannot be considered as a static concept, but rather a process in motion (Buckley et al., 1988). Figure 1 shows the interrelationships between measurements of business competitiveness.

The question you can do now about this interrelationship it is possible to measurements that alone can explain the dynamics of business competitiveness? If it is only considered the performance measurement, the issue of the sustainability of such performance would be unanswered, that may be several doubts on its management and support of the competitive potential, which is part of the planning process to improve competitiveness (Buckley et al., 1988). Also, when only taking into account the measurement of competitive potential, in no way this potential can be considered as competitiveness. Therefore, it is necessary for the achievement of the measurement of business competitiveness ignore these possibilities, and consider three factors that the Elimination of any of them can lead to distorted results (Buckley et al., 1988).

Thus, in terms of establish measuring business competitiveness is clear that performance measurement must be across the organization and not just in any functional area (Buckley et al., 1988). This is feasible if used in the performance of market share, which is a key quantitative variable in the results of this measurements, often used in the literature for this purpose (Gorynia, 2005). However, it is too complicated a possible explanation for the performance of the market share in the multi-product or multinational companies, the results could vary according to type of product (Kirpalani & Balcome, 1987; Buckley et al., 1988), and facilitate an explanation in SMEs that regularly serve to specific niche markets (Bucley et al., Gorynia, 2005).

In the specific case of the manufacturing industry, the performance of the market share of companies depends widely on providers, who often have a strong influence on the success of the products, the return of capital and the sales, and these variables have gained importance as a way to measure the financial performance of the Organization (Dröge & Germain)2000; (Corsten & Felde, 2005).

Therefore, the financial performance can be an effective measure of market share (Buckley et al., 1988;) (Gorynia, 2005), and is generally defined as the return of capital, the return of sales and the improved measures for the comparison of the performance of enterprises (Corsten & Felde, 2005). Therefore at the moment you are in a position to raise the first hypothesis:

H1: Greater level of financial performance, greater level of business competitiveness

Simultaneously, the results achieved in the measurement of the performance of the market share, can lead to a notion of maintenance or improvement of the company's potential. Although the measurement of the potential makes it a little difficult, may be considered for a more effective measurement the cost reduction in the generation of new products and processes, as well as investment in technology (Buckley et al., 1988;) (Gorynia, 2005). However, the cost analysis can fail if they do not explain the performance of the organizations (Artto, 1987;) Buckley et al., 1988; (Gorynia, 2005).

This may be feasible for a company which has competitive costs but lacks a satisfactory return as a result of a poor market positioning or a bad image of their products (Buckley et al., 1988;) (Gorynia, 2005). In this sense, then really are costs competitive? If the performance of the companies is good, regardless of, for example, the competitiveness of low costs, this means that the company has chosen markets, strategy and other competitive means that have led to successful results (Artto, 1987).

In this sense, for the measurement of costs commonly costs are considered of purchases, including costs for coordination with providers, especially those with regard to the lifting of orders and transport (Williamson, 1985;) Cannon & Homburg, 2001; Corsten & Felde, 2005), from a perspective of the total costs, the costs of purchases are an important determinant of both the performance and the competitive potential of enterprises (Ellram, 1995). Therefore at the moment you are in a position to raise the second hypothesis:

H2: Greater level of cost reduction, greater level of business competitiveness

The management processes on the technology use or purchase can be part of the performance, closer to customers and enterprise development through an appropriate investment strategy (Buckley et al., 1988; Gorynia, 2005). This is possible if contrasted the results obtained, first with the appreciation of the goals of managers and, secondly, with the measurements proposed in Figure 1 (Buckley et al., 1988;Gorynia, 2005). Therefore, the technology use as an indicator of competitiveness is another of the variables used to measure processes, since various recent studies on competitiveness, have focused on the technological activity as a variable of competitiveness (Buckley et al., 1988; Gorynia, 2005).

Similarly, commonly measuring technology include expenditures on R&D (Pavitt, 1984;) (Cantwell, 1987), employing scientists and skilled engineers, patents numbers, copyright and licensing, and values of indicators of weight (Patel & Pavitt, 1987). However, these measurements have been supplanted by some notion of the results of the proceedings in the use of technology (Buckley et al., 1988; Gorynia, 2005). In addition to this, the different distributions within the R&D can collide with performance: a strong R industry-oriented could not have an impact for some time. A strong D industry-oriented may seem less advanced, but it can have a more immediate impact (Sciberras, 1986; Buckley et al., 1988; Gorynia, 2005).

This is the result of R & D which is important for the company regardless of the level of expenditure of money. Companies can do extensive expenditure of money in research and development, but may fail in the production of products which match the needs and requirements of the selected market (Buckley et al., 1988;) (Gorynia, 2005). Therefore at the moment this is the third hypothesis:

H3: Greater level of technology use, greater level of business competitiveness

3. METHODOLOGY

To respond to the raised hypotheses was applied an empirical study in small and medium-sized enterprises of the industry of furniture Spain in two stages. In the first of these was applied qualitative research through in-depth interviews with the managers of ten companies producing furniture of the community of Valencia, in order to have a greater understanding of the problems facing the furniture in Spain sector, and correctly define the instrument to collect information to be used in quantitative research.

Similarly, the procedure that was used to obtain the reference framework consisted in obtaining the directory of companies which had with 20 to 250 workers, counting for it with the support of the National Association of industrial and Spain furniture exporters (ANIEME) and of the international fair of the furniture of Valencia (FIM), getting a directory of 500 companies, which represented a little more than 38% of the total business population of furniture (1,300 companies). It is important to note that both companies associated with the ANIEME and exhibiting in the FIM, belong to several business organizations for which the study not focused

on a group or association in particular. Also, the survey was sent by ordinary mail to each of the 500 selected companies, of which there were 322 surveys validated with an error of 4.8% and a response rate of 53 per cent.

In addition, the level of business competitiveness was measured by three factors or dimensions financial performance, measured by means of a scale of 6 items and adapted from Buckley et to the. (1988), Dröge and Germain (2000), Corsten Felde (2005), and Gorynia (2005). Reduction of costs, measured by a scale of 6 items and adapted from Williamson (1985), (1987) Arto, Buckley et to the. (1988), Ellram (1995), Cannon and Homburg (2001), Corsten Felde (2005) and Gorynia (2005). Use of technology, measured using a scale of 6 items and adapted from Pavitt (1984), Sciberras (1986), Cantwell (1987), Patel and Pavitt (1987), Buckley et to the. (1988), Corsten and Felde (2005) and Gorynia (2005). All the items of the three factors are built by a level Likert type of 5 positions, with 1 = completely in disagreement to 5 = completely agree as limits.

Was carried out to assess the reliability and validity of the scale of measurement of the level of business competitiveness, a Confirmatory Factorial analysis (CFA) with the method of maximum likelihood and EQS 6.1 software (Bentler, 2005;) Brown, 2006; (Byrne, 2006). Also, the reliability of the scale of business competitiveness was assessed through the alpha Cronbach and the reliability index measurement of the level of business competitiveness, was made a Confirmatory Factorial analysis (CFA) with the method of maximum likelihood and EQS 6.1 software (Bentler, 2005;) Brown, 2006; (Byrne, 2006). Also, the reliability of the scale of business competitiveness was assessed through the alpha Cronbach and the composite reliability index (CRI) (Bagozzi & Yi, 1988), and rates of statistical adjustment that were considered were the NFI, NNFI, IFC and RMSEA (Bentler & Bonnet, 1980;) Byrne, 1989; Bentler, 1990; Hair et al., 1995; Chau, 1997; (Heck, 1998). The NFI, NNFI and CRI values between 0.80 and 0.89 represent a reasonable accommodation (Segars & Grover, 1993) and a value equal to or greater than 0.90 is evidence of a good fit (Jöreskog & Sörbom, 1986;) Byrne, 1989; Papke-Shields et al., 2002).

The results of the implementation of the CFA are presented in table 1 and suggests that the measurement model provides a good fit of the data ($S-BX^2 = 260.166$; $df = 132$; $p = 0000$;) NFI = 0.939; NNFI = 0.940; CRI = 0.948; (and RMSEA = 0.078). As evidence of the convergent validity, the CFA indicates that all items of the related factors are significant ($p < 0.01$), the size of all standardized factorial loads are exceeding 0.60 (Bagozzi & Yi, 1988), all the values of the scale exceeded the value recommended 0.70 for the alpha Cronbach and the CRI, which provides evidence of reliability and justifies the internal reliability of the scale of the business competitiveness (Nunally & Bernstein)1994; Hair et al., 1995), and the Variance Extracted Index (VEI) is greater than 0.50 in all factors (Fornell & Larcker, 1981). See table 1.

With respect to the evidence of the discriminant validity, measurement of the scale of the level of business competitiveness was through two ways which you can see in more detail in table 2. First, the range of 95% of confidentiality, none of the individual elements of the latent factors of correlation matrix contains the value 1.0 (Anderson & Gerbing, 1988). Second, the variance extracted between each pair of factors is higher than its corresponding VEI (Fornell & Larcker, 1981). Therefore, based on these criteria one can conclude that the different measurements made on the scale show enough evidence of reliability and convergent and discriminant validity. See table 2.

4. ANALYSIS AND DISCUSSION

Was analyzed the theoretical model of enterprise competitiveness level using the of Structural Equations Model (SEM) software EQS 6.1 (Bentler, 2005;) Byrne, 2006; (Brown, 2006). Also, a SEM was conducted to check the structure of the theoretical model and results to contrast the raised hypotheses. The nomological validity of the theoretical model was analyzed through the performance of the chi-square test, in which the theoretical model was compared with the measurement model, not finding significant differences (Anderson & Gerbing, 1988;) (Hatcher, 1994). The results of this analysis are presented in table 3.

With regard to the hypothesis H1, the results obtained ($\beta = 0.372$, $p < 0.01$), indicate that financial performance has significant effects on business competitiveness. As for the hypothesis H2, the results obtained ($\beta = 0.376$, $p < 0.01$), suggest that reducing costs also have significant effects on business competitiveness. Finally, the results obtained in the H3 hypothesis ($\beta = 0.354$, $p < 0.01$), suggest that the use of technology also has significant effects on business competitiveness. In short, you can check the three variables being analyzed are good predictive of the level of business competitiveness.

5. CONCLUSION

It exists in the current literature, a strong debate between researchers and scholars on the various proposed scales to measure the level of competitiveness at the enterprise level, and there is a general consensus on a scale that really measured in all its dimension business competitiveness. However, the results obtained in this study provide enough empirical evidence to conclude that the financial performance, cost reduction and the use of technology are three dimensions that can be measured without any problem the level of competitiveness in SMEs, and is a reliable scale that can be used in future studies.

Similarly, it can also be concluded the scale proposed by Buckley, Pass and Prescott (1988) proves to be a scale with a high level of reliability and validity to measure the competitiveness at the enterprise level. Therefore, if organizations want to acquire, maintain or increase their level of competitiveness, first they will significantly improve its financial performance, reduce their costs as much as possible and make more efficient use of technology that have. Also, companies will have to align, and incorporate these three variables within their business strategies, that these variables have a similar impact on the measurement of the level of competitiveness, i.e., cannot give preference to any of them or simply to discard it because the results may not be expected or be distorted.

On the other hand, given the uncertainty that is currently in business and the growing pressure of the market so that enterprises, especially small and medium-sized enterprises, acquire or improve significantly their level of competitiveness, and be able to maintain its market position, competitive advantages or even survive in a highly globalized economy, it is necessary that companies rethink their business strategies and implement focused strategies to make or strengthen collaboration with its suppliers and customers, as this can significantly improve your return on investment, increase sales and increase their profits, which can be translated as one both significant increase in the market share as in the financial performance of the organization.

In this sense, commonly the participation of market performance and the financial performance of the companies, mainly SMEs, have a heavy dependence on the suppliers who have organizations, because it is precisely in the majority of cases suppliers contributing their experience, skills and knowledge of the market so that products of SMEs have a good acceptance in the increasing market or expanding sales. Therefore, the participation of providers is an essential element in the success of organizations both in the survival of the same, so it has to seek greater collaboration with providers if you want to increase the level of competitiveness.

Similarly, pressure companies maintain or improve their level of competitiveness, which currently have is leading organizations to search mechanisms that allow a reduction of its costs, as this may allow firms reduce the prices of their products and services without detriment to the quality of the same, which can lead to SMEs to implement innovation activities, or allocate a larger budget to activities of innovation and development of new products, allowing organizations to offer consumers products at prices much lower than its main competitors, which can significantly improve both the market share as the company financial performance.

Thus, reducing costs of organizations be achieved faster if companies implement strategies of collaboration with its suppliers, that an efficient and effective coordination with suppliers can reduce the lifting of orders and the delivery of both organizations providers of these customers and distributors, thereby reducing procurement costs and logistics of commodities costs. Therefore, the reduction of the costs of purchases is an essential variable that can have a significant positive impact both the performance and the competitive potential of enterprises.

In the same way, the appropriate use of the technology on which it counts the organization or the acquisition of new technology by the same, is an essential condition to ensure that companies are able to acquire or increase their level of competitiveness, because it is precisely through technology companies can reduce costs production and improve the Organization's processes, generating new products and make its distribution system. Therefore, the use of technology has become the current literature in the field of business sciences, as a key indicator of the measurement of the level of business competitiveness. In this sense, if companies want to improve their current level of competitiveness, additional and invariably to the above, not only they that make more efficient technology use with the Organization, but also acquire, improve or develop an equal or better technology as its main competitors.

Finally, it is important to recognize the main constraints facing this empirical study. The first and most important limitation which in our view is this work is the sample, since they were only considered to those companies who had between 20 and 250 workers, leaving out the sample to those companies of 1 to 10 workers accounting for a significant proportion of the population under study, for which in future studies would be

important to consider companies of lesser size to see how the measurement model behaves in business competitiveness.

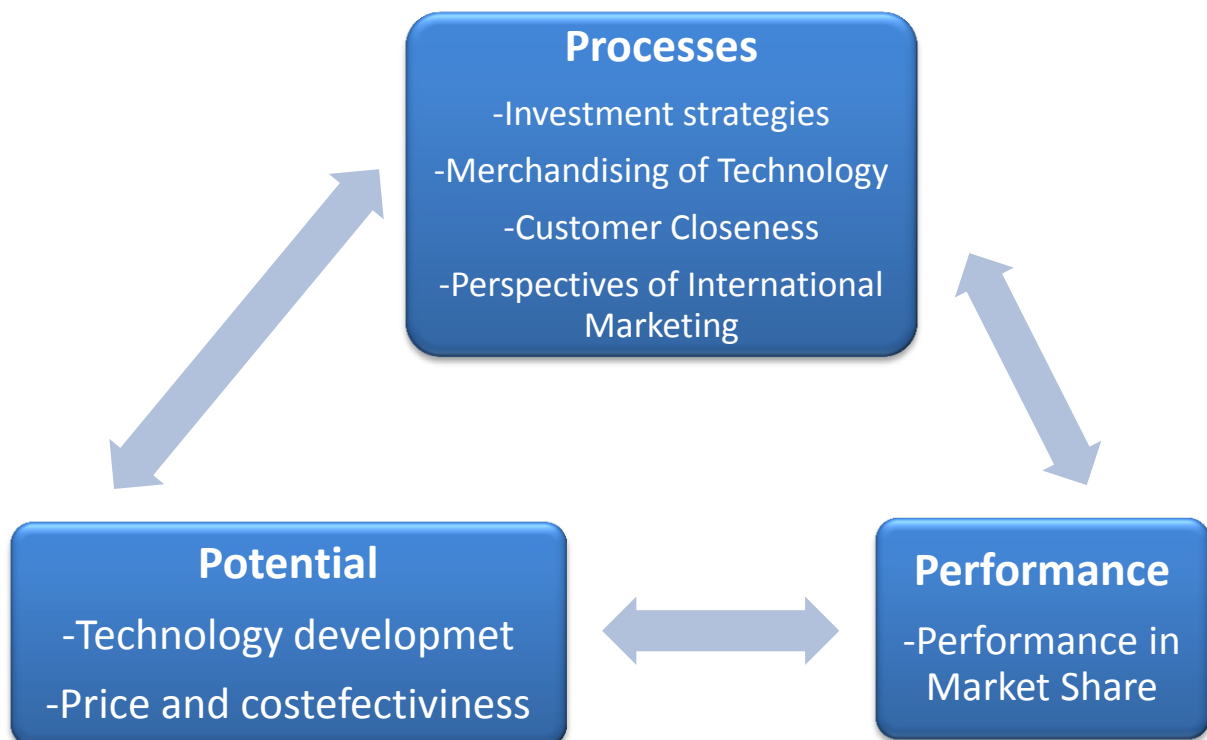
A second limitation is the scale used to measure the business competitiveness, since only three dimensions were considered so in future studies need to incorporate other dimensions to verify the results. A third limitation is the information obtained was only considered a part of the information of the financial performance, the reduction of costs and the use of measures technology through qualitative variables, so in future studies will need to incorporate hard data or quantitative variables to see if the same results are obtained or there are significant differences.

A fourth constraint is that concerning the information requested, as the majority of the surveyed companies felt that this information is highly confidential and private, so the information provided does not necessarily reflects the reality of companies. A fifth and final limitation is that polls approached only managers or owners of companies, whereupon it was assumed that they have a good knowledge of the information requested, and this can differ significantly if it were ask to managers or responsible for marketing and production. Therefore, in future studies, it is important that consideration should be the opinion of the customers and suppliers of companies to contrast the information obtained.

Finally, it is important to go beyond the technical results and discuss in greater depth: what effects should in SME manufacturing if a more quantitative scale is used to measure the business competitiveness? What results would be in SME manufacturing if applies a more sophisticated model for the measurement of business competitiveness? What specific activities of the financial performance, the reduction of costs and the use of technology are those that most affect business competitiveness? These and other questions that may arise can be answered in future research.

EXHIBITS

FIGURE 1 Relationship among the corporate competitiveness measurement



Fuente: Buckley et al. (1988)

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

Variable	Indicator	Factor Loading	Robust T- Value	Cronbach's Alpha	CRI	VEI
Financial Performance	DF1	0.863***	1.000 ^a	0.918	0.924	0.672
	DF2	0.852***	26.783			
	DF3	0.931***	35.407			
	DF4	0.857***	28.444			
	DF5	0.709***	19.562			
	DF6	0.674***	17.360			
Cost Reduction	CC1	0.873***	1.000 ^a	0.940	0.940	0.724
	CC2	0.905***	54.614			
	CC3	0.775***	23.726			
	CC4	0.804***	28.721			
	CC5	0.870***	37.520			
	CC6	0.870***	37.520			
Technology Use	UT1	0.822***	1.000 ^a	0.929	0.929	0.688
	UT2	0.839***	25.269			
	UT3	0.928***	32.674			
	UT4	0.863***	30.903			
	UT5	0.750***	17.669			
	UT6	0.761***	23.421			

$S-BX^2$ (df = 132) = 260.166; $p < 0.000$; NFI = 0.939; NNFI = 0.940; CFI = 0.948; RMSEA = 0.078

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

*** = $p < 0.01$

Table 2. Discriminant Validity of the theoretical model measurement

Variables	Financial Performance	Cost Reduction	Technology Use
Financial Performance	0.672	0.239	0.111
Cost Reduction	0.423 - 0.555	0.724	0.079
Technology Use	0.259 - 0.407	0.203 - 0.359	0.688

Diagonal represents Variance Extracted Index (VEI), Meanwhile over the diagonal the part of the variance is shown. (The correlation table). Underneath diagonal, there is an estimation of the correlation among the factors with a confidence range of 95%.

Table 3. SEM Results of the Theoretical model of business competitiveness

Hypothesis	Structural Relationship	Standardized Coefficient	Robust T- Value
H1: Greater level of financial performance, greater level of business competitiveness.	Financial P. → Competitiveness	0.372***	25.511
H2: Greater level of cost reduction, greater level of business competitiveness.	Cost Red. → Competitiveness	0.376***	36.420
H3: Greater level of technology use, greater level of business competitiveness.	Technology → Competitiveness	0.354***	20.987
$S-BX^2 (df = 128) = 254.403; p < 0.000; NFI = 0.931; NNFI = 0.940; CFI = 0.950; RMSEA = 0.078$			

*** = p < 0.01

REFERENCES

- Anderson, J. and Gerbing, D. (1988), "Structural equation modeling in practice: a review and recommended two-step approach", *Psychological Bulletin*, 13, 411-423.
- Arndt, H.W. (1993), Competitiveness, *Discussion Paper*, 20, Center for Economic Policy Research, Australian National University.
- Arto, E.W. (1987), "Relative total costs: an approach to competitiveness measures of industries", *Management International Review*, 27(2), 47-58.
- Bagozzi, R.P. and Yi, Y. (1988), "On the evaluation of structural equation models", *Journal of the Academy of Marketing Science*, 16(1), 74-94.
- Bentler, P.M. (1990), "Comparative fit indexes in structural models", *Psychological Bulletin*, 107(2), 238-246.
- Bentler, P.M. (2005), *EQS 6 Structural Equations Program Manual*, Encino, CA: Multivariate Software.
- Bentler, P.M. and Bonnet, D. (1980), "Significance tests and goodness of fit in analysis of covariance structures", *Psychological Bulletin*, 88, 588-606.
- Brown, T. (2006), *Confirmatory Factor Analysis for Applied Research*, New York, NY: The Guilford Press.
- Buckley, J.P., Pass, L.C. and Prescott, K. (1988), "Measures of international competitiveness: a critical survey", *Journal of Marketing Management*, 4(2), 175-200.
- Byrne, B. (2006), *Structural Equation Modeling with EQS, basic concepts, applications, and programming*, 2th edition, London: LEA Publishers.
- Byrne, B.M. (1989), *A Primer of LISREL: Basic Applications and Programming for Confirmatory Factor Analysis Analytic Models*, New York, NY: Springer.
- Cannon, J.P. and Homburg, C. (2001), "Buyer-supplier relationship and customer firm costs", *Journal of Marketing*, 65(1), 29-43.
- Cantwell, J. (1987), "Historical trends in international patterns of technological innovation", University of Reading, *Discussion Paper in Economics*, Series A, 191.
- Carpinetti, L.C.R., Gerolamo, M.C. and Dorta, M. (2000), "A conceptual framework for deployment of strategy-related continuous improvements", *The TQM Magazine*, 12(5), 340-349.
- Cas, A. (1988), "Productivity growth and changes in the terms of trade in Canada, In: Feenstra, R. (ed.), *Empirical Methods for International Economics*, Cambridge, Mass: MIT Press.
- Casson, M. (1991), *Global Research Strategy and International Competitiveness*, London: Basil Blackwell.
- Chau, P. (1997), "Reexamining a model for evaluating information center success using a structural equation modeling approach", *Decision Sciences*, 28(2), 309-334.
- Choudhary, B.V. (2001), "Flexibility and related issues in evaluation and selection of technological systems", *Global Journal of Flexible Systems Management*, 2(2), 11-20.
- Corsten, D. and Felde, J. (2005), "Exploring la performance effects of key-supplier collaboration: an empirical investigation into Swiss buyer-supplier relationships", *International Journal of Physical Distribution & Logistics Management*, 35(6), 445-461.

- Denis, L. and Bourgault, M. (2003), "Linking manufacturing improvement programs to the competitive priorities of Canadian SMEs", *Technovation*, 23(8), 705-715.
- Denkena, B., Apitz, R. and Liedtke, C. (2006), "Knowledge based benchmarking of production performance", *Benchmarking: An International Journal*, 13(1/2), 190-199.
- Deros, B.M., Yusof, S.M. and Salleh, A.M. (2006), "A benchmarking implementation framework for automotive manufacturing SMEs", *Benchmarking: An International Journal*, 13(4), 396-430.
- Dollar, D. and Wolf, E.N. (1993), *Competitiveness, Convergence and International Specialization*, Cambridge, MA: MIT Press.
- Drihlon, G. and Estime, E. (1993), "Technology watch and the small firm", *OECD Observations*, 182(June/July), 31-34.
- Dröge, C. and Germain, R. (2000), "The relationship of electronic data interchange with inventory and financial performance", *Journal of Business Logistics*, 21(2), 209-230.
- Ellram, L.M. (1995), "Total cost of ownership", *International Journal of Physical Distribution & Logistics Management*, 25(8), 4-23.
- Ezeala-Harrison, F. (1995), "Canada's global competitiveness challenge: Trade performance versus total factor productivity measures", *American Journal of Economics and Sociology*, 54(1), 57-78.
- Ezeala-Harrison, F. (1999), *Theory and Policy of International Competitiveness*, Westport, CT: Praeger Publishers.
- Ezeala-Harrison, F. (2005), "On the competing notions of international competitiveness", *Advances in Competitiveness Research*, 13(1), 80-87.
- Faulkner, D. and Bowman, C. (1995), *The Essence of Competitive Strategy*, London: Prentice Hall International.
- Fendel, R. and Frenkel, M. (2005), "The international competitiveness of Germany and other European economies: The assessment of the global competitiveness report", *Intereconomics*, 40(1), 29-35.
- Fleury, A. and Fleury, M.T. (2003), "Competitive strategies and core competencies: perspectives for the internationalization of industry in Brazil", *Integrated Manufacturing Systems*, 14(1), 16-25.
- Fornell, C. and Larcker, D. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, 18, 39-50.
- Garengo, P., Biazzo, S. and Bitici, U.S. (2005), "Performance measurement systems in SMEs: a review for a research agenda", *International Journal of Management Review*, 7(1), 25-47.
- Garg, V.K., Walters, B.A. and Priem, R.L. (2003), "Chief executive scanning emphases, environmental dynamism and manufacturing firm performance", *Strategic Management Journal*, 24(8), 725-744.
- Gorynia, M. (2005), "Competitiveness of firms from Ziemia Lubuska and Poland's accession to the European Union", *Journal for East European Management Studies*, 10(3), 195-217.
- Greenan, K., Humphreys, P. and McIvor, R. (1997), "The green initiative: improving quality and competitiveness for European SMEs", *European Business Review*, 97(5), 208-214.
- Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C. (1995), *Multivariate Data Analysis with Readings*, New York, NY: Prentice-Hall.
- Hamel, G. and Prahalad, C.K. (1990), "The core competence of the corporation", *Harvard Business Review*, 68(2), 5-6.
- Hatcher, L. (1994), *A Step by Step Approach to Using the SAS System for Factor Analysis and Structural Equation Modeling*, Cary, NC: SAS Institute Inc.
- Heck, R.H. (1998), "Factor analysis: exploratory and confirmatory approaches", in Marcoulides, G.A. (Ed.), *Modern Methods for Business Research*, Mahwah, NJ: Lawrence Erlbaum Associates.
- Hill, C.W. and Jones, G.R. (1992), *Strategic Management Theory: An Integrated Approach*, Boston: Houghton Mifflin Co.
- Jöreskog, K.G. and Sörbom, D. (1986), *LISREL VI: Analysis of Linear Structural Relationships by Maximum Likelihood, Instrumental Variables and Square Methods*, Mooresville, IN: Scientific Software.
- Jutla, D., Bodorik, P. and Dhaliqal, J. (2002), "Supporting the e-business readiness of small and medium-sized enterprises: approaches and metrics", *Internet Research: Electronic Networking Applications and Policy*, 12(2), 139-164.
- Kim, S.J. and Arnold, P. (1996), "Operationalising manufacturing strategy: an exploratory study of constructs and linkage", *International Journal of Operations & Production Management*, 16(12), 45-73.
- Kirpalani, V.H. and Balcome, D. (1987), "International marketing success: on conducting more relevant research", In: Rosson, J.P. and Reid, D.S. (eds.), *Managing Export Entry and Expansion*, New York, NY: Praeger.
- Lagace, D. and Bourgault, M. (2003), "Linking manufacturing improvement programs to the competitive priorities of Canadian SMEs", *Technovation*, 23(8), 705-715.
- Lau, R.S.M. (2002), "Competitive factors and their relative importance in the US electronics and computer industries", *International Journal of Operations & Production Management*, 22(1), 125-135.

- Markusen, J.R. (1992), *Productivity, Competitiveness, Trade Performance and Real Income*, Ottawa, Canada: Economic Council of Canada for Minister of Supply and Services.
- Nunnally, J.C. and Bernstein, I.H. (1994), *Psychometric Theory*, 3rd Ed. New York, NY: McGraw-Hill.
- Papke-Shields, K.E., Malhotra, M.J. and Grover, V. (2002), "Strategic manufacturing planning systems and their linkage to planning system success", *Decision Science*, 13(1), 1-30.
- Patel, P. and Pavitt, K. (1987), "The elements of British technological competitiveness", *National Institute Economic Review*, November, pp. 72-83.
- Pavitt, K. (1984), "Sectoral patterns of technical change: Towards taxonomy and theory", *Research Policy*, 13, 10-15.
- Peters, T. and Austin, N. (1985), *A Passion for Excellence*, Oxford, MA: Collins.
- Porter, M.E. (1990), *The Competitive Advantage of Nations*, London: Macmillan.
- Porter, M.E. (1998), *Competitive Advantage: Creating and Sustaining Superior Performance*, 2nd Ed., New York, NY: The Free Press.
- Rao, P.S. and Lampriere, T.L. (1992), A comparison of the total factor productivity and total cost performance U.S. and Canada industries, *Working Paper*, Economic Council of Canada.
- Ribeiro, L.M.M. and Cabral, J.A.S. (2006), "A benchmarking methodology for metal casting industry", *Benchmarking: An International Journal*, 13(1/2), 23-35.
- Rugman, A. and Hodgetts, R.M. (2000), *International Business. A Strategic Management Approach*, Harlow: Pearson Education Limited.
- Rumelt, R.P. (1997), "Towards a strategic theory of the firm" In: Foss, N.J. (ed.), *Resources, Firms and Strategies. A Reader in the Resource-Based Perspective*, Oxford: Oxford University Press.
- Sciberras, E. (1986), "Indicators of technical intensity an international competitiveness: a case for supplementing quantitative data with qualitative studies in research", *Research and Development Management*, 16(1), 3-19.
- Segars, A.H. and Grover, V. (1993), "Re-examining perceived ease of use and usefulness: a confirmatory factor analysis", *MIS Quarterly*, 17(4), 517-525.
- Singh, R.K., Garg, S.K. and Deshmukh, S.G. (2006), "Competitiveness analysis of a medium scale organization in India: a case", *International Journal of Global Business and Competitiveness*, 2(1), 27-40.
- Singh, R.K., Garg, S.K. and Deshmukh, S.G. (2007), "Strategic development for competitiveness: a study of Indian auto component sector", *International Journal of Productivity and Performance Management*, 56(4), 285-304.
- Singh, R.K., Garg, S.K. and Deshmukh, S.G. (2008), "Strategic development by SMEs for competitiveness: a review", *Benchmarking: An International Journal*, 15(5), 525-547.
- Singh, R.K., Garg, S.K. and Deshmukh, S.G. (2010), "The competitiveness of SMEs in a globalized economy: observations from China and India", *Management Research Review*, 33(1), 54-65.
- Stalk, G., Evans, P. and Schulman, L.E. (1992), "Competing on capabilities: the new rules of corporate strategy", *Harvard Business Review*, 70(2), 57-69.
- St-Pierre, J. and Delisle, S. (2006), "An expert diagnosis system for the benchmarking of SMEs performance", *Benchmarking: An International Journal*, 13(1/2), 106-119.
- Vastag, G. and Montabon, F. (2001), "Linkages among manufacturing concepts, inventories, delivery service and competitiveness", *International Journal of Production Economics*, 71(1/3), 195-204.
- Vos, J.P. (2005), "Developing strategic self descriptions of SMEs", *Technovation*, 25(9), 989-999.
- Williamson, O.E. (1985), *The Economic Institutions of Capitalism*, New York, NY: The Free Press.