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APPLICATION OF A MODEL OF HUMAN CAPITAL TO PROMOTE THE COMPETITIVENESS OF SMALL AND MEDIUM ENTERPRISES

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ABSTRACT

Many small firms fail. Nevertheless, the contribution and impact that small and medium enterprises (SMEs) account for in the economy and employment in Mexico are substantial. These firms require innovation, opportunities, as well as systems management and internal spaces that allow them to generate greater growth. This paper proposes an innovative tool for directors and partners of this category of companies that are visionaries and are willing to learn. We adopt and adapt in their organizations a creative approach, through the active participation of human capital that will catapult their competitiveness.

JEL: M, M0, M00, M12

KEYWORDS: Competitiveness, Human Capital, Innovation, SME

INTRODUCTION

This research establishes the central axis competitiveness of SMEs in the manufacturing sector, using creativity as a core part of human capital. We argue its contribution is to achieve essential changes that benefit the activities of the company in innovation to achieve goals. According to Méndez (2009), motivation theory (in which the needs of accomplishment prevail over the needs of belonging), is designed to motivate constantly at work to generate a commitment to the company thereby adding value.

Currently small and medium enterprises (SMEs) form the center of the economic system of Mexico. Over 95% of businesses are in this category; according to the National Institute of Statistics and Geography (INEGI 2010). These businesses provide for 57% of the workforce. According to the Ministry of Economy (SE, 2011) these businesses contribute 44% of national GDP.

The importance of SMEs lies not only in possessing characteristics that affect the country's economy, but in their advantages relatvie to large companies. These advantages include: a) being more effective in creating jobs; b) having greater potential for innovation; c) having greater flexibility and structural adjustment; d) having greater ability to adapt its products and services to the needs of consumers; e) representing a counterweight to monopolies, f) providing a buffer for strong employment changes (Rothwell, Sulivan and McLean, 2005). Despite the strengths of SMEs, their mortality rate is alarming. About 70% of SMEs created in Mexico close within a year (Office of the President, 2006). From trade liberalization, Mexican companies are exposed to a competitive environment characterized by the entry of new international competitors. For businesses no matter their size, possessing resources, market, industry or technological understanding of the new world order is essential. It is not sufficient to improve the old ways of operation and management. Success also requires incorporating elements that enable a sustainable future development and growth under the new social dynamic: "Innovation is the key" (Peters, 2005).

This research proposes a Model of Human Capital Competitiveness (MCCH), which supports employers (SMEs) and provide an opportunity to allow employees to participate in the development of the company. This particiption improves competitiveness and is done through innovation, membership with a commitment to get involved and supported participation in the company. This document is divided into 4 parts. The first provides a brief description of the problem to be examined and presents in detail the MCCH Model proposed for SMEs. In the second part, the estimation methodology is presented. The third section presents correlation results obtained for application of the Model between February and September 2013. Finally, the fourth part concludes the paper.

LITERATURE REVIEW

Competitiveness

We begin by clarifying, in a company framework, what is meant by competitiveness. The concept of competitiveness was established in the seventeenth century by theories of international trade supported by the major classical economists of the time. The essence of these theories focused mainly on economic aspects (Lombana and Rozas, 2008). The term competitiveness is used with a variety of shades in business, socio-economic and political-government media. Still, in different disciplines, competitiveness is understood as a capacity. The ability to produce is conceived as the fitness or suitability of a person or organization to do something. In this case, when we talk about competitiveness, it is to be fit to compete. It occurs when two or more people aspire to the same thing.

To deepen our understanding, we examine the definition of competitiveness by the Dictionary of the Spanish Language (2001). The following meandings are offered f. Competir.2 capacity. f. Rivalry for a single purpose. For present purposes we, the Encyclopedic Dictionary Ocean competitiveness describes the concept as "Rivalry between companies seeking greater profit in the same market" (Ocean Publishing, 2003). The Dictionary of Economics and Finance Eumed.net, points to the following sense of competitiveness. It is said that a company or industry is competitive when it is able to adequately compete in the market. [competitive edge], (Eumed.net., 2010). The same semantic catalog refers to the competitive sense which can adequately compete in a market without being at a disadvantage to others. This adjective applies equally to business, technical or products. [competitive]. So is a variation on the concept. Competitiveness is the ability of a company or country to achieve performance in the market relative to its competitors. Competitiveness depends on the relationship between the value and quantity of the product offered and to obtain the necessary inputs (productivity), and the productivity of the other bidders in the market. The concept of competitiveness can be applied to both a company and a country. (Gómez, 2005).

According to Morales and Pech (2000), the term competitiveness is applied to a company, an industry or a country. Even though it may be argued that the general idea of the concept is similar among scholars, it is not easy to find absolute agreement as to its definition. In fact, Porter (1980) recognizes that its meaning may be different when you talk about a company, a nation or even according to the specialty or approach that defines it. For Müller (1995, p. 138) it is the "set of skills and qualifications required for the exercise of jurisdiction." We add that competitiveness should result in a being or entity that has competitive advantage over its rivals.

Meanwhile, Porter (1995) states that competitiveness is determined by productivity and defined as the value of output produced by a unit of labor or capital. Productivity is based on the quality of products (which in turn depends on the price) and in production efficiency. On the other hand, competition occurs in specific industries, not all sectors of a country. Similarly, Ivancevich, Lorenzí, Skinner & Crosby, (1996), cite the following definition: National Competitiveness, insofar as one nation, under free and fair market is able to produce goods and services that can successfully overcome the test of international markets, maintaining

and even increasing real income of its citizens. Porter (1995), noted that competitiveness is determined by productivity, defined as the value of output produced by a unit of labor or capital. To talk about competitiveness, we should examine the company and the industry and identify factors that determine which companies create added value, how that value is sold in the market, and whether these factors really are sustainable in the medium and long term.

It is possible to see some consensus among researchers by pointing out that company competitiveness is determined by three factors relative to the country where the company (country effect or effect area) is located and the sector of operation (industry effects or industry effects) (Galan and Vecino, 1997). It is appropriate to indicate that the three effects described in the preceding paragraph have an additive character, so that the impact on the competitiveness is the sum of each of the effects (Salas, 1993).

Martinez (2010), in his article A Model of Corporate Competitiveness, demonstrates the validation of competitiveness through internal resources of the company. The goal is to achieve a competitive advantage by streamlining resources to achieve company goals. The term competitive ability, or fitness of a person or organization, implies systematically gaining a comparative advantages to other similar firms. This process enables the firm to achieve, sustain and improve a specific position in the socioeconomic environment. As is well known, competitiveness affects how to approach and develop any business initiative. The development necessarily requires changing attitudes in those who lead companies to move from a defensive posture to a more open, expansive and proactive approach. The comparative advantage of a company is its ability to incorporate policy resources, techniques, methods, processes, procedures, etc., of which competitors lack or that they possess to a lesser extent. This process allows generating profit and higher yields than those otherwise possible.

De la Fuente (2009), notes that a company will be very competitive if it is able to obtain a high yield because it uses resources more efficiently than its competitors. Higher yields allowing the firm to either get more quantity and/or quality of products or services, or have lower production costs per unit. When concepts, competence and competitiveness are used by organizations, it employs a strategic approach on the idea of achieving improved efficiency and effectiveness. A company can be competitive on several factors, which are specified in the same dissertation De la Fuente (2009). A company is competitive on price when it has the ability to offer their products at a price that allows them to cover production costs and earn a return on invested capital. However, in some markets, prices of products that compete with each other may vary. A company can have the ability to bring a product to market at a competitive price, due to factors other than price, such as quality, image, or logistics. In these types of markets, if the company can sell its products and achieve profitability, the company is competitive in other factors. Price competitiveness is important in standardized goods and services. Competitiveness in other factors is important in markets for goods and services that may be differentiated by aspects like quality. (De la Fuente, 2009).

Benefits can be classified into comparative advantages and competitive advantages. Comparative advantages arise from the possibility of lower costs for certain inputs, such as natural resources, labor or energy. Competitive advantages are based on production technology, knowledge and human capabilities. Competitive advantages are created by investing in human resources and technology, and the choice of technologies, markets and products. To be competitive the realization of two fundamental tasks are required: self-study and comparative analysis of those considered competitors. In the first task, you must perform a situational analysis. The situational analysis seeks critical self-analysis through an objective inventory to identify factors, characteristics and elements of the person or organization. This allows firms to display a unique advantages. As a second task, you must study the advantages of competitors. The advantages are elements that allow greater productivity relative to competitors. There seems to be consensus among both academics business practitioners, on the prominent role competion plays in a company's technological knowledge, along with its ability to generate innovations (Gómez, 2008).

Technological factors along with the ability to innovate is a critical source of competitive advantage (Suárez, 2001).

Innovation

We can not ignore the fact that, despite the large increase in studies addressing the role and nature of innovation, researchers have not yet reached a generally accepted definition of the concept. The word innovation is complex and somewhat confusing. However, some researchers ttempt to find a common denominator among many definitions, the concept of Zaltman (1973), Damanpour (1991), Nadler and Nadler (1994), Longenecker (2001). Oslo Manual (OECD) (2010) defines innovation as the introduction of a new or significantly improved product (good or service), process, marketing method or organizational method in the firm's internal practices, the organization of the workplace or external relations. This is a more limited assertion than proposed by Schumpeter, but in public politics it is often used as an analytical framework for reflection, analysis and formulation of policies. A number of scholars point out that this statement should be expanded to include organizational and service innovations Everett (2004), Minzberg (2000) and Miller (1999). Policy makers at all levels of government seek ways to understand the role of innovation in development of modern societies and frameworks on which to build their policies. They often start with products, processes, markets, resources and organizations. However, innovation is not only an economic phenomenon, but also a social phenomenon. Rogers (1983), in his book Diffusion of Innovations, discusses how they communicate, adopt and adapt innovations. In particular, the author distinguishes between an inventor, the individual who generates a new idea, and the innovator who spread the idea to those who implement it. Innovation is largely a matter of communication and other invention. In most cases innovation is perceived as a technological innovation.

Innovation is a competitive advantage that all actors should encourage: educational institutions, businesses and government agencies. This should be done not by decree, but through strategic plan generation and promoting innovation, convinced by the concept that competitive advantage is urgent. (Gonzalez, 2008). For many years the technology policy was under the umbrella of industrial policy or research and therefore education. When innovation policy emerged as a distinct field, the belief that innovation is derived naturally and without problems of scientific discovery, for example the linear model of innovation, was expanded. Acurdo with Gonzalez (2008), argue the current basis is developed from new frameworks such as institutional and evolutionary economics, theories of interactive learning, interactive innovation model or network and linking supply with demand. All these developments are the basis an innovation systems approach, which provide a conceptual framework for understanding the complexities of the innovation process, institutional arrangements that may affect the firm, and contribute to extend the sphere of creation of innovation policies.

Human Capital

The term human capital emerged during the Industrial Revolution, eighteenth century, as economists such as Adam Smith sketched the need to make a thorough study, not only of technical factors and production processes, but also of human resources in establishing the rules of functioning of a company or an economic system (Definitions ABC, 2013). However, human capital gradually achieved each of the areas of economic life. It was understood that he who has direct responsibility, with their skills, abilities, talents and limitations-running tasks, processes, and activities is responsible for the correct running of the organization. With the passage of time, and according to the humanist tradition, the human factor ceased to be considered a resource. This occurred because people, not individuals or entities, lease or sell their labor to the company. This perception is related to the irrefutable fact that the human being can not be reduced to numbers and quantifiable economic statistics or mathematical terms, but it must be especially understood as an entity individually rational, unique and unrepeatable nature.

The more added value held by the staff of an organization, ie, the better trained or prepared the human component is to perform the specific tasks that correspond to each of its members. Before proceeding, we repair the known idea that human capital refers to the heritage concept. A factory, company or institution esits in relation to the training of staff that serves. The human capital term represents the value of the total employees, including each and every one of its levels of an organization. It is based on their academic qualifications, knowledge, skills and abilities. The human capital of a company is without a doubt one of the most important elements when assessing the overall performance of the same.

This was not always so. In the late twentieth century, precisely in the 80's, almost all employers were more concerned with technology and reduced labor cost. This result was expected due to the high costs of acquiring new technology and maintenance that had to do with technical expertise. Added to this parts, which were scarce and expensive, caused problems for SME entrepreneurs who had to do without labor (human capital). It is no accident that many entrepreneurs came to understand that human capital is irreplaceable. The realization started the era of continuing education and training to motivate and achieve the desired results.

It is well known that new ideas emerge when people from different disciplines with thier experience and knowledge, collaborate in the process (De Bono, 2006). This theory, proposed by De Bono (2006), gives support to the research presented and through imaginary colors and hats, which tells us how the human mind works to generate new ideas. The hierarchy is used to record motivational factors for the benefit of all components of the organization. We note that it is easy to remember the function of each if the color and partnership recalls. It transpires that people need to have higher qualities to compete and to achieve. It is necessary to be creative every day in the activities performed continuously (Reeve, 2002).

Technical or Professional Training of Human Capital

The training of workers or employees is important. It is necessary to adjust the characteristics of each person in each office designated to make the company more functional and meaningful. For the purposes of our argument, we should not overlook that preparation of people in their working environment allows them more skills to generate better ideas, and create different ways to develop their work more efficiently. According to Nadler y Nadler (1994) there are three areas of activity in the development of human resources (HR): Training, Training and Development. These activities are defined as follows: Training is focused on improving the current or future performance of a person in his current job or workplace.

Development focuses on possible future performance in posts not yet appointed in the same organization or the market in general. Today's employers are seeking staff prepared skilled technicians, upper medium grade studies, preparation of undergraduate levels that are competitive workers, to meet new challenges and adapt quickly to change (Fayol, 1995). As a corollary of this arguement, we note that Human Capital, through their ideas, thoughts, innovations and creativity, is able to influence positive results of companies. It is the fundamental basis of these results, to generate profits and achieve goals. All these reasons require the assertion that the human factor is the the most valuable of the organization’s resources. Human capital development provides opportunities for each person in the firm (Conde, 1996).

The Theory of Human Capital as a new conception of labor input mainly developed by Roobins (1999). The essence of this theory is the basic idea of considering education and training of the organization as an investments by rational individuals, to increase production efficiency and income. The Human Capital Theory, using micro foundations, believes that the economic agent (individual) makes the decision to invest in their education (further education or not). The arbitrator or judge is the relationship between the benefits you will get in the future if it incurrs and the investment costs (for example, the opportunity cost of forgone salary to be studying and direct costs, cost of studies). The individual and firm will continue to explore whether the net present value of costs and benefits is positive (Robbins, 2004).

The Theory of Human Capital argues the economic agent is rational. The agent invests for himself. This investment is based on a calculation. Robbins (2004) contends this theory can distinguish between general training and specific training. The first was acquired in the education system as a student and aims to increase productivity or individuals. Those individuals increase the average and marginal productivity in the economy. Funding for this training is done by individuals, because usually companies have no incentive to finance that spending given that human capital has no collateral. Put another way, business owners do not have the certainty that if it incurrs the education cost that workers will use their acquired knowledge to the service of the company. Workers may leave the company to enforce their knowledge in another firm willing to reward them with better wages. Given this problem of asymmetric information, the acquisition of education at this level of training should be funded by the individual or by a government agency. Now, as to whether specific training makes sense in the case of a durable relationship between worker and employer, there are two possibilities: the entrepreneur finances the investment or costa are shared with the employee.

The Model of Human Capital Competitiveness

Businesses must create sustainable competitive advantages. One of these advantages is talent with the skills required to focus on customer satisfaction, self-improvement and continuous renewal. Fernández (2005), argues competencies arise from business strategy and can be measured. Competencies should be observable, aligned to strategy and generate competitive advantages. The challenge for Human Resource Managers is to understand the needs of their customers and to make a significant and tangible contribution to the business respond to your problems. These challenges and opportunities are specific. The Human Resorce Manager must change its role from operational support to become business partner. The management of human capital is to create and maintain competitive advantage. The willingness to invest into human capital performance is centered in order of importance. Firms desire commitment results in attitude (desire to belong), commitment based on loyalty (I belong) and programmatic commitment (but it will cost me belong). We can reaffirm that human capital is essential for the organization to achieve its goals.

The Model of Human Capital Competitiveness (MCCH), is a proven tool that supports entrepreneurs, especially the SMEs owners. These owners, in turn, can provide opportunities for employees to participate in development of the company through innovation, with a broad sense of belonging and commitment to get involved. With their active participation, not only occupationally speaking, they support the company competitiveness. The MCCH is intended to provide greater opportunity for people who provide services within the company, in any of the existing hierarchical levels, to contribute to the innovation process. This generates improvements that benefit the company. All people who develop an activity within an organization, enterprise or institution, should be creative and make improvements to and for the workplace, in which they provide their personal services. This, allows them to keep their own jobs and generate business opportunities for growth and opportunities for development within the same.

Human capital is the most valuable resource of the organization, it is constantly investing in training, whether provided by the employer or in a self-commitment to excel through education. It is therefore important to encourage, providing greater benefits and incentives to staff to provide ideas and to be creative in their work areas and rewarding performance. Most important is that the employer is satisfied with the staff working with him and has great potential to achieve organizational objectives. Within this framework, the proposed model is presented for consideration. Variables of innovation and organizational are used in subsequent research resources. Human capital acts as a fundamental part in the development of these. Figure 1 shows the Model for Human Capital Competiticeness MCCH.

Figure 1: Model of Human Capital Competitiveness

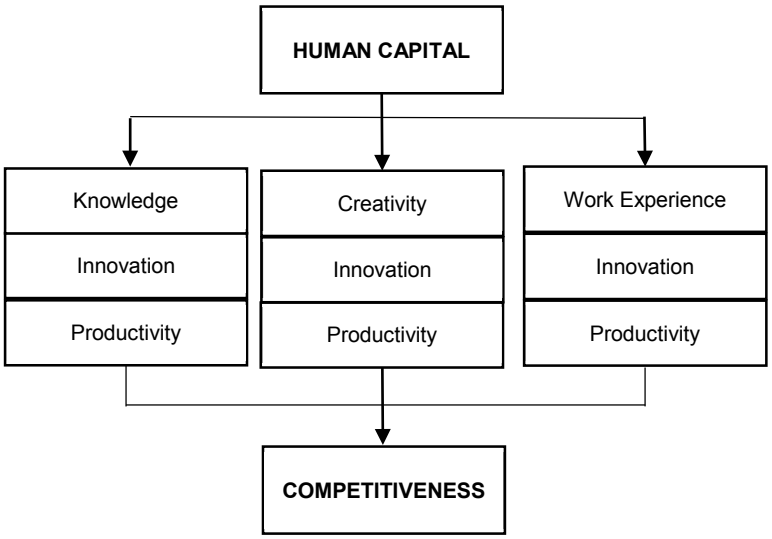

Figure 1 shows the Model for Human Capital Competiticeness MCCH. Source: Prepared

The model has four variables to consider. The most important variable is competitiveness, which indicates the results presented by SMEs in the market along with its scope and its survivability. The market contemplates Human Capital as the main independent variable. Its dimensions, knowledge, creativity and work experience reaches an optimal level of innovation, generating the appropriate technology for each company. Measurement, adjustment and implementation of the model allows distributed according to the availability of company resources. This process allows for the efficient development of the organization, and is achieved by increasing productivity. The creativity of human capital allows the firm to efficiently develop each of its activities, tasks, processes and tasks to improve the performance of SMEs companies

Limitations

The researchhas limitations. The first limitation is in the form of answering surveys. As many of the company staff members attributed not responding to lack of time. The second limitation is the lack of commitment by the employer to improve results because they viewed management as thinking of sales and profits, regardless of the capabilities of its staff. To overcome this situation requires providing greater diligence in all functional areas of the company, so that the opportunities for the company in the market are identified and involve all employees and changes through their proposals. It is employees who are in touch with reality. This entrepreneurial attitude also increase the sense of belonging of its employees to the organization. The third limitation is the distrust of the employer to use or seek new strategies or actions. Following Peter Drucker, "Where there is a successful business someone once made a courageous decision."

METHODOLOGY

The methodology used here is quantitative, non-experimental, cross-initiated research. It is exploratory and descriptive and concludes in a correlation analysis. The study focuses on the application of human capital to develop competitiveness, with the proposal of a model. We consider three diminsions of human capital (knowledge, creativity and work experience), that can generate greater innovation and increase productivity to enhance competitiveness. The method used was approached from a quantitative perspective, obtaining data through the instrument using a Likert scale with values 4-1 with an interpretation of strongly agree, to strongly disagree with subjective appearance. Data is bounded on the maximum score of each

variable for reasons of homogeneity of the set of variables. We transform the inputs to percentage scale, thereby not affecting the correlation analysis that is independent of scale. This process provides additional clarity in interpreting the data. The Likert scale consists of a set of items presented as statements to measure the reaction of the subject in three, five or seven categories for which subjects indicate their degree of agreement or disagreement (Castañeda, 1998). Overall the results of this study are based on a heterogeneous sample of a universe of 1,372 affordable units, the manufacturing sector. The sample consisted of 300 companies that were chosen by lot and have a number of options in all quadrants.

The present study was developed in the city of Celaya, Guanajuato, companies manufacturing SMEs. The development of this research was started in December 2012, with a review of the literature. In August 2013 a pilot study was conducted according to the needs of the study. In the months of September and October we conducted the survey to gather the information and analyze the reliability thereof. In November of the same year, the final instrument was developed, which was applied in December to validate the hypotheses.

For the final instrument a sample of participating companies was identified. The procedure was as follows: 1372 organizations of the total population were numbered and Microsoft Excell's random mathematical function was used. Among (1,372) total firms 300 were reandomly selected as the study sample companies according to the statistical formula for a finite binomial population, with a margin of error of 0.05% and a confidence level of 95% . Equation 1 shows the fomula used to estimate the sample size:

$$n = \frac{z^2_{\alpha/2} * (p * q)}{\frac{(N-1) * \varepsilon^2}{N} + \frac{z^2_{\alpha/2} * (p * q)}{N}} \qquad (1)$$

Table 1 shows the resulting computations. Importantly, the sample is close to the proportion given in the 2010 census which states that small businesses represent 92.2%, median 7.6%, as shown in Table 2. Data were obtained from the National Institute of Statistics, Geography (INEGI 2010) census data because in 2010, only preliminary data are not valid and still are made.

Table 1: Sample Size Determination

Universe	**Level Confidence**	**Error**	**Sample**
1372	95 %	0.05 %	300
Sample Size In Finite Normal Population			
N =	1372	n =300.29	
Error =	0.05		
alfa=	0.05		
$Z_{alfa/2}$ =	1.96		
P =	0.5		

Source: Murray (1997)

This research is submitted on a model of competitiveness of human capital (MCCH), which supports employers (SMEs) and allows the opportunity for employees to participate in the development of the company through innovation. Employees participate with a commitment of membership to be involved in each process and its participation underpin the company to be competitive. The motto is: unity is strength

to win, win. The authorial approach is to leave open the possibility of continuing on the same line of knowledge through new avenues, all without losing sight of improving the functioning of SMEs.

Table 2: Distribution of the Sample by Size of Organization

		Frequency	Percentage	Valid Percent	Cumulative Percentage
I earned	small	208	92.2	92.4	90.2
	medium	92	7.6	7.6	97.9
	Total	300	99.8	100.0	
omissions	system	1	0.2		
Total		300	100.0		

Source: Statistical Programme SPSS18

A measuring instrument for competitiveness as the dependent variable and human capital as an independent variable is developed. Within the proposed model we consider two independent variables to make it more meaningful, productivity and innovation. The instrument design began with an instrument pilot consisting of 15 items per factor and applied to a sample of 33 companies. The instrument performed an exploratory factor analysis to refine items of each factor and obtain the reliability index Cronbach's alpha for the final variables. The final instrument was applied to a sample of 300 companies. The results are described by means of descriptive statistics for each factor and for the total score of the instrument for testing hypotheses. I examine how independent factors correlate with the dependent factor. We also conducted a regression analysis to predict the degree of influence on the dependent variable by the independent variables taken together. All analyzes were conducted in December 2013 using SPSS18 program (Statistical Package for the Social Sciences, version 18, in Spanish). Regression analysis as part of validation has been recommended by Hernández, Fernandez and Baptista (2010), and is based on the notion of variance of common factors between components of a complex variable and the total validated.

Table 3 shows the Kaiser-Meyer-Olken and Bartlet Tests. The value for the Kaiser-Meyer-Olkin index was 0.912 indicating a good compact pattern correlations and rejected the possiblity that the correlation matrix for all item is singular (sphericity test, $p < 0.05$). Thus the data is suitable for factor analysis. Reliability was determined by calculating Cronbach's alpha coefficient. The method is used to achieve internal consistency measures in Hernandez *et al* (2006), instrument was made. The results show a score of 0.941 which represents reliability of 45 items, with a sample of 300 cases.

Table 3: Test KMO and Bartlett

Measure of Sampling Adequacy Kaiser-Meyer-Olkin.		0.912
Bartlett's test of sphericity	Chi-square approximate	5993.718
	Gl	990
	Sig.	.000

Source: Statistical Programme SPSS18

Table 4 shows a Pearson's Correlation analysis. Each variable is analyzed and shows the feasibility accepted, where we observe that there is a very high ratio of each.

Table 4: Correlation Factors

		Human Capital	Innovation	Productivity	Competitiveness
human Capital	Pearson Correlation	1	0.881**	0.552**	0.810**
	Sig. (bilateral)		0.000	0.000	0.000
	N		300	300	300
innovation	Pearson Correlation		1	0.633**	0.882**
	Sig. (bilateral)			0.000	0.000
	N			300	300
productivity	Pearson Correlation			1	0.729**
	Sig. (bilateral)				0.000
	N				300
competitiveness	Pearson Correlation				1

***. Correlation is significant at the 0.01 level (bilateral). Source: Statistical Programme SPSS18*

Table 5 shows correlation of the final instrument. The relationship between the competitiveness factor (dependent variable) with other factors (independent variables) shows all factors are significant ($p < 0.05$) and positive. Higher human capital factors, innovation and increased productivity imply a higher competitiveness factor. The strength of the relationships are good because they are greater than 0.70.

Table 5: Correlation of the Final Instrument, Analysis of Factors of Competitiveness, Human Capital Innovation and Productivity

		Human Capital	Innovation	Productivity
competitiveness	Pearson Correlation	0.810**	0.882**	0.729**
	Sig. (bilateral)	0.000	0.000	0.000
	N	300	300	300

***. Correlation is significant at the 0.01 level (bilateral). Source: Statistical Programme SPSS18*

To determine the influence of the independent variables taken together linear regression analysis was performed. The results are presented in Table 6. The linear regression model indicates that the factors: human capital, innovation, productivity explained 83% (R square) of the variable of competitiveness, the other 17% are other factors. Table 7 presents the associated analysis of variance. The results indicate that the model is significant $p < 0.05$.

Table 6 Linear Regression Model

Model Summary								
R	R2	R2 Corrected	Error Typ. Estimation	Statistical Change Change in R2	Change in F	gl1	gl2	Sig. Substitution F
0.912[a]	0.832	0.830	2.243	0.832	487.408	3	296	0.000

a. Predictors: (Constant), human capital, innovation, productivity Source: Statistical Programme SPSS18

Table 7: Analysis of variance

Anova[a]					
Model	Sum of Squares	Gl	Mean Square	F	Sig.
regression	7,356	3	2,452	487.4	0.000[b]
Residual	1,489	296	5.031		
Total	8,845	299			

a. Dependent variable: competitiveness b. Predictors: (Constant), human capital, innovation, productivity Source: Statistical Programme SPSS18

Table 8 shows the coefficients and significance for each factor, All the independent factors are significant $p < 0.05$. The linear regression model is as follows:

$$Competitiveness = 5{,}727 + 0.14\ (Human\ Capital) + 0.62\ (Innovation) + 0.24\ (Productivity) \quad (2)$$

Th results imply that if all factors remain constant human capital explains 14% of the variability of competitiveness, innovation explains 62% and productivity explains 24%.

Table 8: Test of Significance for the Analysis of Variance

Model	Coefficients		Coefficients	T	Sig.	Collinearity	
	B	Error típ.	Beta			Tolerance	FIV
(Constant)	-5.727	1.101		-5.200***	0.000		
human Capital	0.140	0.047	0.152	3.009***	0.003	0.223	4.486
Innovation	0.623	0.060	0.567	10.413***	0.000	0.192	5.210
productivity	0.244	0.026	0.286	9.284***	0.000	0.599	1.671

a. Dependent variable: competitiveness Source: Statistical Programme SPSS18

CONCLUSIONS

We conclude the most valuable resource within the business organization is the human factor. Businesses must create sustainable competitive advantages. One advantage that can be createed and that is difficult to copy by competitors is talent with the skills required to focus on customer satisfaction and self-improvement and continuous renewal. The Model of Human Capital Competitiveness (MCCH) developed here is a tool to support the company that allows firms to evolve and resized on a firm basis. It involves considering the capabilities of people who make up its human capital as an opportunity for the survival and subsequent expansion of SMEs. Our model allows the employer to provide SMEs guidance to help the company stay in business and open new opportunities.

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RECOGNITION

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