

The intervention of Human Capital on MSMEs That conduct electronic commerce in Mexico: a perspective from the local development

La intervención del capital humano sobre las MIPYMES que realizan comercio electrónico en México: una perspectiva desde el desarrollo local

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Received July 11, 2018; Accepted November 27, 2018

Abstract

The Research Focuses on the theoretical analysis of Human Capital (CH) and electronic commerce (EC) in micro, small and medium enterprises. Communication and information technologies (ICTs) and the problems of acquiring and exploiting Human Capital as a function of Formal and Informal Education Affect the development of the local companies. THUS, Fieldwork Consist of the collection of information and descriptive and correlational statistical analysis. THEREFORE, the results Indicate That the situation of Human Capital acquired formally and informally in a way in relation to electronic commerce Carried out by MSMEs are through to the weightings ACCORDING theory and Local Manifested with patterns of behavior in Mexico. The Pearson coefficient are positive trend, but slightly weak. However,

Human Capital, E-commerce, MSMEs

Resumen

La investigación se centra sobre el análisis teórico sobre el capital humano (CH) y el comercio electrónico (CE) en las micro, pequeñas y medianas empresas. Las tecnologías de la comunicación e información (TIC's) y los problemas de adquisición y aprovechamiento del capital humano en función de la educación formal e informal que inciden en el desarrollo de las empresas locales. De modo, que trabajo de campo consiste en la recolección de información y el análisis estadístico descriptivo y correlacional. Por lo tanto, los resultados indican que la situación del capital humano adquirido de manera formal e informal en relación al comercio electrónico que realizan las MIPYMES son a través de ponderaciones de acuerdo a la teoría y manifestados con patrones de comportamiento local en México. El coeficiente Pearson son de tendencia positiva, pero ligeramente débil. Sin embargo, se han hecho recomendaciones para incrementar los índices de la relación, ya que estas variables estudiadas son propuestas en diferentes países para impulsar el desarrollo local.

Capital humano, Comercio electrónico, MIPYMES

Citation: GARCÍA-GONZÁLEZ, Miguel, RIVERA-CHAVEZ, Rubén, JORGE-VERA, Víctor Alcaraz*. The intervention of Human Capital on MSMEs That conduct electronic commerce in Mexico: a perspective from the local development. Journal-Urban-Rural and Regional Economy. 2018. 2-3: 21-31.

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Introduction

In research it has been proposed to carry out an analysis of the correlation between one of the main variables that comprise the study of local development, this variable is the CH taken in its formal and informal dimensions and described in its relationship with electronic commerce (EC) performing micro, small and medium enterprises (MSME) in Mexico. In the broad framework within which seeks to analyze the CH, it is a fundamental and indispensable to promote local development which manifests itself in the quality of life of society as a whole variable.

The research was divided into three parts. The first theoretical foundations presented in the context of local MSME development and human capital (CH); as well as characterization of MSMEs and electronic commerce (EC) in local development. In the second part, the research design according to the statistical analysis is proposed. Finally, a descriptive analysis of the variables CE and CH formal and informal, a correlational analysis and hypothesis testing is presented. They presented at the end a number of findings and considerations.

Background

In researching the AMIPCI (2014), It indicated that Mexico internet access by 2014 was already more than 50% of the population aged 6 years and older. Therefore one of the conditions for which encourage electronic commerce in the country is given. Likewise, mentions that laptops, smartphones and tablets are the main devices have increased penetration of internet access. The PC or desktop is the only device that has lost presence. Less common devices to connect (console, TV or other mobile devices) maintain the same levels of 2014, without growing significantly yet.

It is also significant to a consideration of the diversity of products that are the subject of electronic commerce. The digital content downloaded through mobile devices was the highest category in estimated expenses, followed by travel and event tickets AMIPCI (2014). However, this phenomenon is constantly changing and there are many sectors are areas of opportunity for the development of this trade.

Since then, e-commerce buying and selling products and services through electronic systems, mainly internet ADIGITAL(2012). While Gariboldi (1999), Mentioned regarding this concept that every business transaction (production, advertising, distribution and selling goods and services) carried out both by individuals, companies or electronic agents in digital media, in a virtual marketplace that has no geographic boundaries and time .

The idea of AMIPCI (2014)The internet has revolutionized the life of man, which has enabled it to innovate in how to carry out certain activities such as trade; This combination of Internet and trade has given name in various ways such as "Internet Commerce", "Web Commerce" among others, but all subsumed under the generic name of Electronic Commerce "Electronic Commerce (EC)" .

Theoretical Framework

The investigation focuses on two variables CH and electronic commerce in MIPYMES perspective for analysis is defined by the local development approach. According to Boisier (2005), which indicates the importance of local development by mentioning that: the term denotes a development concept that has completud not need anything else for your full understanding. In this sense, the name is the thing named, to add then all adjectives that accompany the noun they merely create redundancies. Indeed, as shown immediately, development can only be locally, just as it can only be human, or sustainable, or endogenous. Furio also(1994)Describes local development as the result of the desire to live, work and decide the fate of the territorial community, the need by a number of social partners and local authorities to meet the challenge of unemployment and reliance on small dimensions.

Moreover, according to Naumann (2005) on the human capital variable in the knowledge economy, it is considered that those without access to information and high educational excluded from a world in which economic changes , political and social will be based mainly on knowledge and constant innovation. In this context, access to quality education, strengthening institutions and creating the tools to use and adapt knowledge to the reality of each person and community will allow the development of a more free and capable society to define their own future.

For more than a century it was understood that the CH is the most valuable of all resources of economic activity. The amount of that capital is not easy to measure because, as happens today with many goods and services and other factors of production, quality differences in the qualifications of individuals are not easy to assess. The analysis of the methods used by statisticians and researchers to quantify CH confirms that difficulty and yet shows precisely that any analysis in this area is subject to the existence of adequate basic data.

Although from the classics of the economy in the nineteenth century the importance of CH mentioned even indirectly, it was not until the second half of the twentieth century when Theodore Schultz (1960) and Gary Becker (1962) Favored by stimulating research environment at the University of Chicago, made deep treaties, which have been reference for all subsequent investigations. These works helped to develop an economic theory on CH, based mainly on years of schooling and professional work experience considered variables that explain the functions of individual income.

Schultz, Mincer and Becker with, was the first who took the CH evaluating effects, costs and benefits of investing in this form of capital with respect to investment in physical capital; He said the CH served as production value in the economy of a country, plus any increase in national income of a country's growth came from stock of CH (AVSI, 2008). In an effort to clearly understand the CH concept whose meaning has often equivocal results, and has been the subject of great debate and discussion are described below some of its most important concepts.

Despite the criticism, the idea resurfaces as a CH suited to address issues related to the qualification of workers and their subsequent incorporation into development models of the countries concept. From the old concept of CH to current conceptualizations far mainly thematic opening, along with consideration of new factors that determine the CH of people. Beyond the qualification or years of experience, social and cultural capital of people become central aspects of the new conceptualizations (INE, 2011)

For Torres (2009) The CH is comprised of knowledge, education, training, education, training, talent, experience, skills, skills, abilities, health, quality of work, individuals or persons to be applied in production that they help you be creative, productive, improve their wages, increase their welfare and that in turn can help in efficiency, productivity, economy and competitiveness of enterprises and institutions, according to the OECD defines CH as knowledge, skills, skills and built on individuals and to facilitate the creation of personal, social and economic welfare attributes (Keeley, 2007). From the various definitions, it has opted for a definition of CH including various elements and is based on the course of acquisition and accumulation of CH.

It is considered that the CH can have an innate or acquired. CH innate comprises capabilities of physical and intellectual type, which may be modified due to the conditions of nutrition and health. CH acquired will be assembled over the life of the subjects, through formal education, informal education and accumulated experience. These three types of acquired training will condition the labor training and value system of the subject, which will determine, together with the innate abilities, job performance (Giménez, 2005). So I understood the CH as the accumulation of skills, abilities, experience, knowledge, a human being accumulated throughout his life and to help to solve the various problems that are present in all areas of their life.

Methodology

Indicators to measure CE

There are several methodologies focused on measuring ICTs, which have been revised to compare the different proposals in order to take appropriate indicators to measure indicators that enable e-commerce indexes. Among the many studies conducted to understand the variables of information technology and communication (ICT) and information systems, González(2012) It indicates the dimensions that must be taken into account to analyze e-commerce as part of the information society. The indicators are divided according to five key for the study and assessment of TIC's dimensions: the environment, the Internet sector, infrastructure, participation and use thereof.

On the other hand, in the proposed Finquelievich (2004) by making a list of indicators of local development for advocacy with ICTs, within which electronic commerce has important place, makes the following classification: infrastructure, training, organization and marketing strategies. In 2013, in order to give continuity and follow-up information captured in 2009 and to assess progress in use, From these analyzes have been reviewed and further work has been possible to determine the dimensions that can help measure e-commerce are: a) infrastructure, b) training, c) organization and d) use. Measuring the CH

To identify the research variables multiple works of various authors representative local development were reviewed, and publications institutions and bodies with authority in the investigation of local development issues, this review has marked a way forward, taking the certainty that the major points of the investigation are sufficient to validate the objectivity of the same theoretical background. After reviewing the various theories, unable to analyze all the variables involved in local development, it has chosen one of the most significant for the purpose of study: CH.

Having defined the CH variable in the field of local development, a comprehensive search of clear indicators related to CH, although have been created with specific objectives and for various purposes is done, they can help as a foundation to create a guide on which CH can be measured from the dimensions of formal and informal education within MSMEs and it means local development.

INDICATOR	INDICATEDOR	CARR	Giménez (2005)	INE (2011)	Dominica (2003)	AVSI(2008)	Schulz (1961)	WEZJAK(2007)	Becker, (1975)	OECD(2001)	Mérimo(2004)	Harpans, (2014)	Bourini,(2012)	WEF, (2015)	Triñh L.e, (2005)	Sharpe, (2001)	Fender, 2012)	CES,(2016)	Orange tree, (2013)	Brown, (2017)	Ivan, (2016)	Serrano, (2000)	Orange tree, (2013)	% Of consideration
Years media study			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	95%
Self-learning and informal education			x								x													33%
Family education							x	x																48%
It Capacitación / or continuing education at work.			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	81%
Quality of education				x																				43%
Equid gender																								33%
Creativity to generate new ideas																								10%
Work satisfaction																								10%

Table 1 Measuring the CH
Source: Prepared (2016)

Table 1, defined a list of indicators that help measure the acquired CH formal and informal in MSMEs way and their weights obtained by way of the percentages given (%), as a knowledge base for future relations on the CH.

Design tool for data collection

For data collection it has developed a questionnaire from the composed variables, dimensions and indicators Table 2. Because there is no model to measure CH, it is designed from the literature (summarized in Table 1). Without neglecting that the measurement of CH, almost always focuses on macroeconomic indexes, and rarely in individuals of a company from a local perspective.

Variables	Dimensions	Indicators
Commerce	Infrastructure	Computer equipment infrastructure and networks
		Internet services
		ICT training
	Training	Staff training for e-commerce (site, networks, devices, inventory online, etc.)
	Organization	TIC's administrative payroll, accounting, customers, suppliers, etc.
	Use	TIC's for production, services, research and development
		TIC's handling market (advertising, catalogs, promotions, etc.)
		Mail and communication company
		Internet sales and purchases
		Security management
Human Capital	Formal	Years media study
		Quality of education
	Informal	Self-learning and informal education
		It Capacitación / or continuing education at work.
		Equid gender
		Creativity to generate new ideas
		Work satisfaction
Family education		

Table 2 Identification of variables, dimensions and indicators
Source: Prepared (2017)

Already defined variables and dimensions, there has been a statistical design for the application of the instrument. The following table describes how the questionnaire was applied to obtain the data objectively, representative, reliable and valid.

Target population	The observation unit
All companies between 1 and 250 employees to do e-commerce in the city of Morelia, Michoacan, Mexico	The company
Geographic coverage	Sampling unit
The city of Morelia, Michoacan, Mexico	The company
Sample size	Analysis unit
The sample is 384 companies, for a confidence level of 95%. Size needed in infinite populations.	Micro, small and medium enterprises. Companies with fewer than 250 employees
time coverage	Sampling scheme
The survey was carried out during 2018	Probabilistic and laminate. Probabilistic because each company has a chance nonzero be selected, and stratified that are grouped into groups productive sector.

Table 3 Description of statistical design
Source: Own, based on INEGI (2017)

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To determine the size of the population resorted to the power of the Mexican enterprise system. They have taken all companies and number that determines the population, because there is no information to know how many e-commerce carried out, but always the total number of companies will be greater than the group that make e-commerce. well it is, taking the total number of companies in the sample calculation accuracy greater transpolar the population data will be obtained.

Analysis and interpretation of results

Surveys are 384 companies that use e-commerce in the city of Morelia, Mexico. SPSS was used as a tool for information processing. In this program, a Pearson correlation process is performed in order to obtain the correlation of the variables analyzed. Reliability analysis instrument used Cronbach's alpha method¹ of 0.929 given the 30 items used in the survey, and recital 303 surveys. Thus it can be considered that the instrument with which the data was obtained has high reliability, and consistency of the results is high. The validity has been generated by reviewing expert opinions to state the variables, dimensions and indicators².

Analysis of the variables

The study universe is made up classified as MSMEs, who were asked the survey for 2018, trying to cover the four areas where the geography of the city is divided. The questionnaire was designed based on the nature of the information sought to be obtained according to indicators, dimensions and variables investigated, so that only requires choosing preanswers according to the selected code. To obtain the values of each dimension, he was making a sum of the questions or items that correspond to each and in the case of human capital measurement was carried out taking into account a weighting according to the weight given level appearance in the theories analyzed to obtain the list of indicators described above.

Analysis descriptive of the Ecommerce Variable

The analysis of the variable electronic commerce, which can be considered the independent variable (although the extent of this research is explanatory and causal), in MSMEs of Morelia, was made based on data obtained from the questionnaires. Then the frequency distribution are presented.

On the understanding that have been classified as MSME companies that have between 1 and 250 employees, it is inserted a question on the questionnaire to find out by size by number of employees to company type belongs. And it has also been considered a question to know the three major primary, secondary or tertiary sectors, which identifies the respondent company. He could sense that most companies surveyed, ie more than 80% were in the services sector, which are the type of companies that mainly have the provisions and features to get to make e-commerce, although it is clear that any sector could do it.

With regard to companies that were surveyed sector, only 3.8% were the primary sector, 13.78% of the industrial sector and the remaining 82.40% of the trade and services sector. As for the size of the company's field study was conducted considering a 22.70% of companies with fewer than 10 employees (micro), 38.52% of companies with between 11 and 50 employees (small companies) and 38.78% who have between 51 and 250 employees which are considered medium-sized enterprises.

For analysis of the variable electronic commerce 10 questions were considered, whose frequencies are presented below. The result regarding computing infrastructure and enterprise networks resulted in most, ie more than 58% consider it quite adequate or fully adequate, but the rest consider some shortcomings.

¹ Cronbach's alpha, is a method used to measure the reliability of a data collection. It can be said generally -of about 0.25 get so if the correlation coefficient or this indicates low reliability; if the result is 0.50, the reliability is medium or regular. In contrast, if it exceeds 0.75 it is acceptable, and if greater than 0.90 is high, to take into account (Hernandez, 2010).

² The evidence on the validity of the content is obtained by the opinions of experts and to ensure that measures dimensions of the instrument are representative of the universe or domain size of the (s) variable (s) of interest (Hernandez, 2010).

The companies surveyed perceive a 57.66% somewhat or completely appropriate service, the remaining 42.34% consider that there are some deficiencies in their internet services to carry out the activities of the company. In the analysis of sufficient training in ICT by businesses surveyed, the survey indicates that 31.38% is average, 32.40% is enough, 20.92% is completely, but 12.76% believe that there is little training and 2.55% It indicates no training in ICT.

Fieldwork indicates that 21.17% as a result of companies have fully trained staff to conduct e-commerce, 28.83% is quite capable, that represents more than 50%. The 27.30% have regular training, low 14.54, and 8.16% do not have this training to e-commerce.

ICT that have administrative companies surveyed perceive 30.10% fully account with them, 33.93% rather integrates them, representing 64% between the two options. But only 23.98% have them regularly, 8.16% and 3.8% some companies do not have them.

For handling production and conduct research and development perception of the companies surveyed indicated a 35.20% that completely handles, 30.36% pretty regularly 21.68%, 10.46% and 2.29% just does not handle.

On the question regarding the management of ICT for managing markets, the survey indicates that 30.36% are handled completely, 28.06% enough, which adds more than 58.42%, ie the majority, but 22.96% uses only regularly, 13.01% consider little used, and 5.61% not used yet.

The companies surveyed saw a 45.92% the need to use the Internet for mail and communication company, 28.83% pretty, 18.11% Regular and only 4.84% perceived it as little necessary and 2.29% do not consider necessary.

With respect to purchases and sales of internet essence of e-commerce companies do not realize were not considered, and they still do a 30.61% indicated that they do little, 19.64% do so regularly, while one is done fairly 22.96% and 26.79% do so completely.

Consideration of the companies in terms of management efficiency of computer security, 22.19% is completely, 28.06% pretty, 29.59% Regular and 15.05% is still inefficient and 5.10% have no efficiency to handle computer security.

Descriptive analysis of human capital Variable

Formal and informal: the results of fieldwork describing the situation of human capital variable in its two dimensions that have been considered are presented. The first dimension is described with respect to the formal human capital, which has two indicators are the level of education and quality of education. The survey showed that the perception of the companies regarding the quality of education they received at school employees is good, saw a 23.21% completely, 35.20% pretty, 31.38% Regular, 7.90% slightly and 2.29% nothing.

The average educational level of personnel engaged in e-commerce in enterprises according to the survey was 1.27% primary, secondary 6.12%, 25.26% high school, most bachelor, representing 56.89%, 10.46% with graduate also. The second dimension describes the informal human capital and integrated by the measures of indicators: self-learning and informal education, training and continuing education at work, gender equality, creativity to generate new ideas, job satisfaction and finally education family.

The perception regarding the ability of employees to perform their own self-study, was given in the survey for 26.53% completely, 34.95% pretty, 29.34% Regular, 8.16% and 1.02% little thing. The survey shows that 30.61% believe that their company employees receive training and continuing education completely, 30.10% pretty, 20.41% on a regular basis, but considers it 14.54 little training, and 4.33% perceive no. Most consider that there is gender equality as 69.9% consider there is enough or completely this culture, but on the other 17.60% is still perceived as fair, 8.92% to 3.57% and there is little that there is no culture.

A 35.20% of the companies surveyed were considered to be fully promoted in their business creativity to generate new ideas, another 29.08% consider fully promoted, 20.66% perceived it regularly, 12.24% indicated that it was little, and 2.55% to It is not promoted.

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The employee satisfaction as the fieldwork is complete in 24.23% of companies, quite a 38.78%, 27.81% on a regular basis, a 8.16% low and there is no satisfaction in a 1.02%. Most satisfied in their work. Regarding the perception of family education the survey is that the company considers it important to fully in 25.26%, 38.27% pretty,correlational analysis

The data obtained by applying the correlation coefficient (Pearson r) and the coefficient of determination (r2) in the research work described in the following tables and graphs, and hypothesis testing indicated in each case .

		COMMERCE	Formal Human Capital
COMMERCE	Pearson correlation	one	.454 **
	Sig. (Bilateral)		.000
	N	392	392
Formal Human Capital	Pearson correlation	.454 **	one
	Sig. (Bilateral)	.000	
	N	392	392

** . Correlation is significant at the 0.01 level (bilateral).
Source: Prepared based on the calculations obtained from field research (2018).

Table 4 Correlation electronic commerce and formal human capital

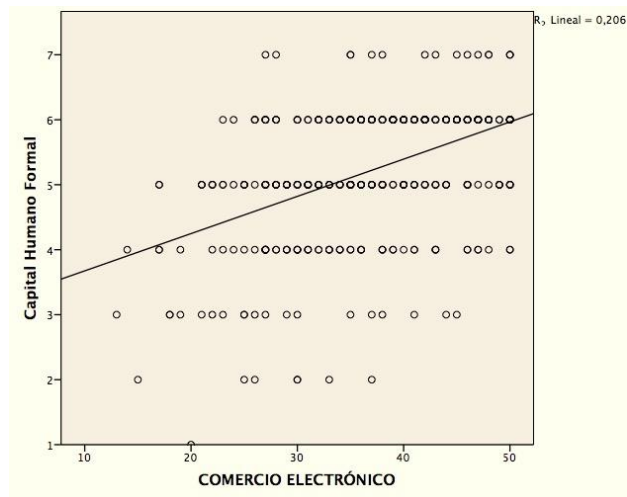


Figure 1 Figure E-Commerce correlation and formal human capital
Source: Prepared based on the calculations obtained from field research (2018)

The first objective proposed relationship between electronic commerce and CH acquired formally at local MIPYMES, according to the results shown in Figure 1, in which the Pearson correlation is 0454 can be said that a correlation almost half positive trend.

And being the result of R2 of 0.206, it is understood that the variation in the formal human capital by variation in e-commerce is weak. and although there is still a relationship as hypothesizes this does not become a considerable level.

		COMMERCE	Informal Human Capital
COMMERCE	Pearson correlation	one	.590 **
	Sig. (Bilateral)		.000
	N	392	392
Informal Human Capital	Pearson correlation	.590 **	one
	Sig. (Bilateral)	.000	
	N	392	392

** . Correlation is significant at the 0.01 level (bilateral).
Source: Prepared based on the calculations obtained from field research (2018).

Table 5 Correlation e-commerce and casual human capital

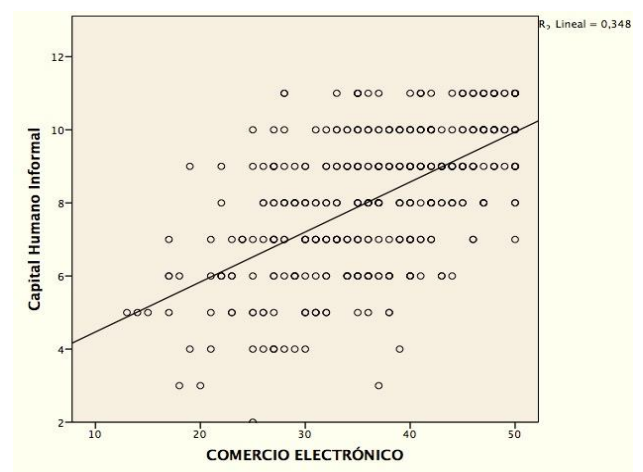


Figure 2 Correlation graph casual e-commerce and human capital
Source: Prepared based on the calculations obtained from field research (2018)

The second objective of electronic commerce fail CH acquired informally at local MIPYMES, and similarly according to the results shown in Figure 2, in which the Pearson correlation is 0590 can be said that a correlation positive trend among medium and large. But being the result of R2 of 0.348, it is understood that the variation in the informal human capital by variation in e-commerce is weak. and although there is still a relationship as proposed this hypothesis does not become a considerable level.

Conclusions

With the growth of ICT in the last three decades around the world, and its constant application for implementing the EC and the need to make optimal use of the CH, to promote local development, which in turn significantly impact in contemporary social dynamics.

The aim of the research was to identify the factors that affect the formation, growth and use of CH acquired formally and informally in MSMEs engaged CE are and determine to what extent and in what sense a relationship between given the variables of formal and informal CH and CE.

He turned to a review of theoretical research and did fieldwork in order to find background work like this investigation in order to determine the factors that influence the acquisition of CH, and was determined on a model for CH study based on the acquisition of it from four aspects: CH acquired by formal education, informal education acquired by CH, CH acquired by experience and innate CH, choosing the first two to be more significant.

Fieldwork to carry out this investigation began in March 2015, held in the city of Morelia, Michoacan, e-commerce companies that develop, focusing on MSMEs.

In the process prove or disprove the hypothesis correlated data were used as a tool using the correlation method "r" Pearson.

While the first objective implied the existence of a correlation between CE and CH formally acquired at local MSMEs, it can be concluded that there is a weak relationship, and positive trend. Given that this conclusion was reached after considering the indicators of average years of schooling and quality of education. If you want to improve on these indices you can consider increasing these indicators. Efforts to improve educational standards and quality of education in relation to ICT, and to strengthen the weakness found this relationship in MSMEs of the city of Morelia, and to increase the positive trend of the current situation would be consistent with the digital agenda for Latin America and the Caribbean (eLAC2020) ECLAC(2018), Which aims to:

Encourage the use of digital technologies in enterprises, with special focus on MSMEs and promote the digital transformation in various aspects of the economy. In addition to boosting the development and incorporation of digital skills and computational thinking in the teaching-learning, by updating the curriculum, according to the capabilities that will require future activities.

In the second objective the assumption is that MSMEs that make CE exploit the informal CH, whereas the latter is integrated from self-learning and informal education, training and continuing education at work, gender equality, creativity generate new ideas, job satisfaction and family education. By testing this hypothesis, it has been concluded that there is certainly a positive trend mean and correlation. Considering this situation it is important that MSMEs city seek to improve these indicators; encouraging and strengthening creativity and learning and recognizing the need for education from the family and gender equality, and to determine own business policies to meet their employees.

This will create an enabling environment to properly implement the use of ICT and more efficiently make e-commerce, but mainly to increase the CH company, to ultimately be more competitive. Since the availability of relevant human talent is one of the strengths that make it attractive to a city or region and becomes a competitive advantage. Consequently, the availability of information and knowledge about human talent that require productive activities, as well as identifying gaps in skills, competencies and skills are key inputs to guide the actions of public, private and academic sectors to facilitate training and quality employment generation to ultimately be more competitive. Since the availability of relevant human talent is one of the strengths that make it attractive to a city or region and becomes a competitive advantage.

Consequently, the availability of information and knowledge about human talent that require productive activities, as well as identifying gaps in skills, competencies and skills are key inputs to guide the actions of public, private and academic sectors to facilitate training and quality employment generation to ultimately be more competitive.

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Finally, it is concluded that successfully reached the overall goal of the research was to analyze the relationship between the EC and the Local MIPYMES CH.

In the approach of the theories of local development that guide this analysis has been found to bridge the digital divide today is essential for progress towards achieving societies more equal, in fields as diverse as learning, integration into the world of work, increased productivity, voice and public visibility, cultural production and consumption, and the ability of management and organization. The gap heightens the contrasts between regions, countries and social and cultural groups. This challenges formal education systems, because ICTs offer new ways to produce and transmit knowledge learning (Sunkel G. e., 2014).

There are no studies examining the relationship between CH and EC in the MSMEs in Morelia from a perspective of local development, which is why contributed to the knowledge of this correlation in an unprecedented way. The research allows to know the phenomenon and the existing relationship with other cities of similar from an economic and cultural perspective.

Recommendations

Here are some recommendations based on the results of research and recommendations from various institutions and theories about it are presented, thus aims to contribute to the decision making of MSMEs developing EC to increase the various indices analyzed and they can be inserted more own way in the dynamics of the digital economy and at the same time develop and protect the CH and contribute to the welfare of individuals in local society.

There are several international studies on the relationship between economic growth of countries and their development in electronic communications. Today this appears closely linked to the development of broadband and data services, and in general to the ICT sector. In particular, according to a study by the Inter-American Development Bank (IDB), an average 10% increase in broadband penetration in Latin America and the Caribbean (LAC) causes a rise of 3.19% of gross domestic product (GDP) and productivity 2.61%, at the same time generates more than 67,000 direct jobs (García Zaballos, 2017). In line with this study, this analysis has sought to discover the reality of CE in the city of Morelia, Mexico and TIC's in general but transcending economic and human welfare ranging from generating and preserving the CH.

Human capital, in general, is one of the most important inputs for the generation of wealth, reducing poverty sustainably and reducing inequalities, leading to better development and increased competitiveness. The labor market and its continuous adjustments constantly demand new knowledge, skills, competencies or skills that have to be met by increasingly better trained workers.

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