# KNOWLEDGE MANAGEMENT, ENTREPRENEURIAL COMPETENCIES AND ORGANIZATIONAL DEVELOPMENT IN MICRO AND SMALL ENTERPRISES IN RURAL REGIONS IN THE STATE OF YUCATAN, MEXICO

Dr. Francisco Gerardo Barroso Tanoira
Anahuac Mayab University, Merida, Yucatan, Mexico
Dr. Raul Alberto Santos Valencia

Higher Technological Institute of Calkini in the State of Campeche, Calkini, Campeche, Mexico

### Abstract

Globalization today motivates companies to change according to market needs and for adapting to their environment, so it is necessary for them to manage their knowledge efficiently reinventing, innovating and implementing new product and service strategies, incorporating them to new business models and challenges. This is why the relation among knowledge management, entrepreneurial development and organizational performance becomes more important.

In rural regions of the State of Yucatan, in the South East of Mexico, natural environment conditions, culture and the way of life could become barriers for entrepreneur formation and hence, for the development of micro and small business firms. Knowing the way for managing knowledge, the entrepreneurial competencies of micro and small entrepreneurs, as well as their organizational performance, will allow Government, universities, business chambers and private investors, design and implement strategies for contributing to a better development of such companies, improving the quality of life of people in such regions.

**Keywords:** Knowledge management, entrepreneurial competencies, regional development, rural areas, micro and small businesses

### Introduction

In Mexico there have been efforts in recent years for supporting and helping micro, small and middle sized entrepreneurs, especially micro and small ones, for helping them be more competitive through efficiency

improvement and innovation incorporated to their business model. It is not enough just having and accumulating new information since it is necessary to transform, innovate and use it in an effective way for creating a stronger impact and reaching higher productivity levels through the application of new working models (Davenport & Prusak, 1998).

The more intangible resources a company offers, the mores possibility there is for creating competitive advantages (Seeley & Dietrich, 2000; Lev, 2004), and that is why a focus on knowledge management considers people as the most important asset in enterprises. According to this, knowledge is the most important resource and learning is the most important asset a person has in an organization.

Organizations need to have and promote new strategies for their people to have access to knowledge and create change. Technology and innovation are fundamental for solving problems and because they motivate social participation based on decision making and the development of public policy to improve people's quality of life.

Defining the problem and objective

In Yucatan, about half of its people live in the municipality of Merida, where the State capital -also named Merida- is. The other 105, called "the inner State", are considered rural municipalities. There have been support and help programs for micro and small businesses in those municipalities, but usually according to political interests, economic factors or the soil possible uses. There are factors which are not considered, such as the way people manage their knowledge, or how they generate, appropriate, use and transfer it (Barroso, 2011). Lack of resources or an inadequate delivery of them could also result in low competitiveness and low quality of life life.

It is possible that such plans and programs do not match the entrepreneurial profile of the people and neither foster the creation and development of micro and small companies, which generate most of the jobs in the country and the State. It is urgent to find new mechanisms to assure a better quality of life, preserving human dignity. Micro enterprises have up to ten workers and sales up to \$4 million pesos a year (\$308,000 USD) no matter the activity, and small ones have from 11 to 50 (industrial and service) and from 11 to 30 (commercial), with income from \$4.01 to \$100 million (up to \$7.7 million USD) a year, combined, according to the National Institute of Statistics, Geography and Informatics [INEGI] (2009).

Weaknesses, such as lack of innovation, is a fact because the products and services are based on knowledge transmitted traditionally from parents to children, far from new technological trends, making companies vulnerable because of their lack of competitiveness or victims of middlemen (dealers).

That is why this study refers only to micro and small companies in those

municipalities except Merida.

In Mexico there will be changes because of the new national economic conditions enhanced by the National Development Plan 2013-2018 stated by the Federal Government, as well as the new education, energy and tax reforms, which will affect the number and quality of Mexican jobs. The Federal Government wants Mexico to become more attractive for investors, but the recovered have not arrived fast enough for solving the unemployment. but the resources have not arrived fast enough for solving the unemployment problem (INEGI, 2010).

There is a lack of entrepreneurial culture, opportunities and jobs. Although talent of micro and small business owners is acknowledged because of their efforts for overcoming barriers, they have a small influence in the economic and cultural life of the region. This is why it is important to detect entrepreneurs, who are those people who, due to their knowledge, abilities, attitude, skills, values and enthusiasm, are able to innovate in products, services and could place them in the market though their own companies. They have adequate knowledge management patterns and contribute to the development of their regions.

The objective of this research is to determine, from the perspective of micro and small business owners or directors in the rural municipalities of Yucatan if there is a relation among knowledge management,

Yucatan, if there is a relation among knowledge management, entrepreneurial competencies and organizational performance, as well as suggesting strategies for improving the quality of life of people in such regions, based on the results obtained.

# Benefits of this study

It is important to determine how micro and small business owners manage their knowledge, so public and private programs are better designed for their regions. Besides, the information could be used by companies, entrepreneurial chambers, higher education institutions and the Government, for updating their information about micro and small businesses in the rural municipalities of Yucatan for designing and implementing higher social, economic and environmental projects for the sustainable development of those regions, with potential benefit for about a million people. Besides, this methodology could be used in other regions with small changes.

It was difficult to get information from the participants because of the lack of confidence for releasing information about their companies. The distance among towns in municipalities was also a factor. As micro and small business units have a high mortality rate, there were some existing in the list but no longer in operation, so they had to be replaced in the sample with others officially registered.

This project was supported by the National Council for Science and Technology (CONACYT in Spanish), and the results will be used for designing and implementing programs for improving the quality of life of the people in such regions.

### Literature review

Intangible assets and intellectual capital

For Kaplan & Norton (1996), intangible or non financial assets help companies: (a) developing relations with customers for creating and keeping loyalty; (b) attracting new markets and offer a better service, with quality and efficiency; (c) introducing innovative products and services, with more quality and effectiveness for covering market segments; (d) developing personalized quality products and services at low cost and on time; (e) develop employee competencies, and (f) developing information technology, data bases and systems. Sveiby (2001) indicates that staff efforts are directed in two ways: (1) to the interior of the company, building internal structure, and (2) to the exterior, working with customers, suppliers, other companies and the Government. So, intangible assets could be classified in three kinds: three kinds:

- a) **Employee competencies**. This refers to the capability individuals have for acting in different situations for creating assets. This is the most important because without people, the company will not exist. These competencies depend of five factors: (1) explicit knowledge or formal education; (2) practice, knowing how to do things, requiring training and practice; (3) experience, this is, knowledge acquired on the job practice; (4) values, and (5) social nets or relations among individuals within an environment and culture culture.
- b) **Internal structure**. These resources are created by employees in an organization and cover patents, concepts, models and information systems. Culture and labor environment are internal structure elements because employees and internal structure conform the organization.
- c) **External structure**. It includes relations with customers and suppliers, so it covers brands, logos, image and reputation. This value is represented by the way in which the company keeps up relations with customers.

For Edvinsson & Malone (1997), the factors in intellectual capital are "human capital", "structural capital" and "customer capital". Structural capital consists of "organizacional capital", "innovation capital" and "process capital". For Kieso & Wygandt (1999), intellectual capital refers to

assets with a present value of zero, but with a potential generation of value in the future.

# **Knowledge management**

Because of current competition, it is not enough to have knowledge. It is important to manage it correctly for reaching strategic objectives (Drucker, 1993; Barroso, 2011; Agudelo, 2011). According to Schultze & Boland (2000), about 80% of knowledge management projects fail because of too much emphasis in information and communication technologies (ICT) or because the strategies designed and implemented do not match the organization mission.

Knowledge management is the ability of an organization staff for knowledge resources and complementing them with other Knowledge management is the ability of an organization staff for using knowledge resources and complementing them with other organizational resources and capabilities (Choi & Lee, 2002). For Drucker (1993), it is the way in which organizations acquire, use and transfer their intellectual assets. There must not be confusion between knowledge management and ICT since technology must be seen just as a valuable tool and an important means for creating value. For Nonaka & Takeuchi (1995), knowledge management must be seen as the capability for creating new knowledge, disseminate it through the organization and express it in products, services and systems. According to Andersen (1995), it is the need for accelerating the information with value, from all the staff in an organization and back to the individuals, for creating value for customers.

Choi & Lee (2002) indicate that the process of knowledge management could be divided in four sub-processes: (1) creation; (2) manifestation; (3) use, and (4) transfer. For Barroso (2011), such sub-processes are: (1) acquisition; (2) generation; (3) use, and (4) transfer of knowledge. But there are two different perspectives about strategies for managing knowledge: (a) systematic, or the capability for creating and accumulating knowledge throug the use of ICT, and (b) human, relative to the capability for creating and accumulating knowledge through dialog and direct contact among people (Choi & Lee, 2002).

Knowledge is defined as information combined and enriched with experience, context, interpretation and reflection (Davenport & Prusak, 1998). For Nonaka & Takeuchi (1995), it could be explicit (able to be transmitted through words, mathematical formulas or symbols) or tacit (produced by experience, difficult bo be communicated and shared with others). Knowledge, especially the tacit one, is considered a source of competitive advantage because it is unique, difficult to be imitated and impossible to be substituted.

Knowledge management strategies include a set of alternative

Knowledge management strategies include a set of alternatives and actions to create new knowledge and the ability for creating a competitive

advantage from the existing knowledge. A company focused on the staff, using implicit and explicit knowledge and enriching it with the knowledge coming from organizational culture, using ICT correctly, will be more dynamic and effective for using knowledge and improve its performance, creating value for its customers, employees and investors. However, it is important to enhance metacognition (Flavell, 1978), when new knowledge is created from reflection of past experience or previous knowledge.

Competencies and entrepreneurship

For McClelland (Robbins and Judge, 2013), competencies are all features and qualities people have for performing a task as required and expected. It is the addition of all cognizable capabilities (aptitudes), behavior trends (attitudes), personality features and acquired knowledge,

behavior trends (attitudes), personality features and acquired knowledge, theoretical or coming from experience.

The entrepreneur is an individual able to start a project usually rejected by others. He/she is a person who knows how to interpret the physical characteristics of the environment, even when they are not apparent. This person is able to fight against any inconvenience and does not fear failure, showing capability for team work and motivating others. There is not an only way to define what an entrepreneur is.

McClelland (1973) indicated that, despite the activity, origin, socioeconomic condition, religion, culture, sex or race, in all individuals there is a series of personal key features that separate successful people from those who are not. Successful people are independent, energetic, dreamers and decision makers. They detect what is really important and have the decision for doing things. They are determinate, dedicate, technology oriented, with education, attention to detail, enthusiastic, emphatic, emotive, ethical, always searching for balance, destiny. Money and experimentation are generally important for them. However, in this study, the competencies considered were those suggested by Palacios (1999), modified and validated by Santos (2011), and presented in appendix A.

# Factors that limit the development of micro and small enterprises in Mexico

According to Kauffman (2001), micro, small and middle sized companies, especially the micro and small, face a series of problems which limit their development. These problems must not be considered as isolated. In fact, they could be grouped in the following categories:

a) Limited access to credits. Since the financial crisis of 2005 in

Mexico, micro and small companies are considered by banks as high risk clients. Because of this, those business units have to get

financial support at high interest rates from money lenders, who in turn demand warranties.

- b) Inadequate human capital integration, problems for training their employees and scarce participation in institutional training and technical assistance programs. These enterprises have to survive through a policy of low salaries and minimum fringe benefits, so they have unqualified employees or just a few ones with formal education, with the risk of low quality products, poor productivity and high turnover and absenteeism rates. They do not participate in governmental training programs because of lask of information. lack of information.
- lack of information.
  Excessive regulation. There is a huge number of bureaucratic steps for implementing and operating a business. In many other places in Mexico, this is a barrier for investing.
  Limited access to information. For these enterprises it is difficult finding information, so there are low possibilities for identifying new market niches, applying new technology or hiring a consultant for improving performance.
  Insufficient innovation and technological development. They do not have enough resources for innovation and development, so they depend on what others generate. Technological culture is low, and it is usually accompanied by resistance to change.

Public social development plans and programs

In Yucatan there are different public programs for developing business enterprises, both for starting or strengthening them, but also for enhancing self-employment through microcredits. However, there are others which help delivering tools, materials, machinery or equipment to be competitive in the market. There is special attention to projects for women and young adults, but the bureaucratic steps are too many, and in many cases there is lack of promotion for those projects.

# Methodology

Research type and design

The study was divided in two parts or phases. The first phase was for identifying the knowledge management process in the micro and small enterprises and also for determining its relation with organizational performance, from the participants' perception. It is an exploratory and descriptive qualitative study, using field work as the method and the interview as the technique (Hernández, Fernández & Baptista, 2010).

In the second phase, entrepreneurial competencies would be identified and the relation among them, to determine which ones are the most

important for entrepreneur formation. The study was quantitative, starting as exploratory but evolving to descriptive and correlational, with a no experimental design because variables were not be manipulated, and transactional because participants would be required just once. The variables were entrepreneurial competencies (independent) and organizational performance (dependent), measured by the productivity reported by each company.

### **Participants**

From a total of 10,836 micro and small companies registered in the Mexican Enterprise Information System (SIEM), the sample calculated was 374, considering 95% probability and 5% maximum allowed error. This number was proportionally distributed in the seven regions in which the Planning Committee for the Development of the State [COPLADE] (2008) has divided the State, resulting in the regions depicted in figure 1.

The companies were intentionally selected because of the difficulty of access. In each one the owner, director or person in charge participated. 82.08% were from the respective region, and 72% were men. The activities of such enterprises were primary (agriculture, farming, 38%), manufacturing (22%), commercial (24%) and service (16%).

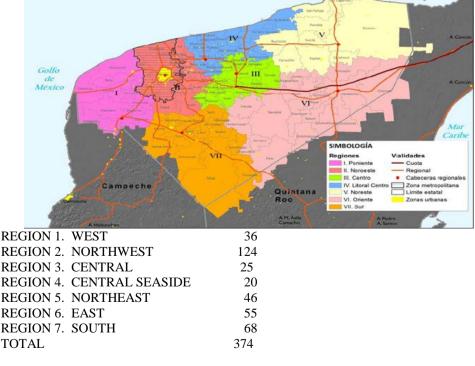


Figure 1. Division in regions according to COPLADE (2008) and number of participating companies in each one. Research data.

# **Instruments and procedure**

Knowledge management and organizational performance.

The interview guide for phase 1 was taken from the Bogota Manual (Jaramillo, Lugones & Salazar, 2001), adapted and validated by Barroso (2011). It consists of five sections: (a) general enterprise information; (b) knowledge acquisition and generation; (c) knowledge use in the company; (d) knowledge transfer, and (e) general questions about knowledge management. At the end there are questions about the type of technology they use, and if they know the existing governmental programs. It is a semi-structured interview guide with open questions, but there are two items for multiple choice. multiple choice.

The results classification followed Drucker's (1993) concept of knowledge management, with special attention to the Nonaka and

Takeuchi's (1995) model. There were questions to detect transfer process at personal and enterprise level, as well as metacognition (Flavell, 1978).

The average time for the interviews ranged from 30 to 90 minutes, and were conducted by the authors of this paper and a group of doctoral students trained for that purpose. There was an invitation letter given to each participant for explaining them the purpose of this research and the confidential handling of the resulting information.

Entrepreneurial competencies

The questionnaire used was Palacio's (1999), modified and validated by Santos (2011), which is in appendix A, where there is a version in English from the one used, which was in Spanish. This instrument was selected because it has the ideal characteristics for measuring the variables, besides the easy way in which it could be administered. It consists of three sections: (1) general information of participants; (2) the 55 items with Likert scale, asking the participants about the competencies they have for starting, running or for developing a business, and (3) open questions for determining the participants' opinion, for complementing and better understanding quantitative results, as well as for detecting the most important barriers for entrepreneurs. entrepreneurs.

For the reliability analysis there was a pilot test in 40 enterprises intentionally chosen in the regions, this is, a bit more than 10% of the calculated sample. Cronbach's alfa was 0.914, so the instrument was considered reliable and these questionnaires were taken as part of the study. With all the questionnaires complete, there was a factor analysis test to see those factors with most explained variance.

Qualitative information was analyzed gathering similar answers together (testimony statements) and grouped in key ideas, organized by frequency or appearance, from the most to the least mentioned. Those ideas

were classified in categories, which were in fact the interview questions (Barroso, 2011). For quantitative data, Excel and SPSS were used. For result interpretation there was a scale used: from 1 to 1.5 the result was "totally disagree"; from 1.51 to 2.5 it was "disagree"; from 2.51 to 3.5 it was "indifferent"; from "3.51 to 4.5 it was "agree", and from 4.51to 5 it was "totally agree".

### **Results**

From the participants' perception, 75% of them affirm there is a relation between knowledge management and organizational performance, basically measured in productivity, and more profits, for the remaining 25%. For 65% of them, knowledge management is important because it allows companies to perform with more quality, although 12% admitted an important influence in innovation. Most participants (67%) said that knowledge management depends on their staff, so there must be a knowledge transfer mechanism and incentives for keeping human talent in the company, as Sevivy (2001) indicates. All participants agreed that the strongest relation is between knowledge management and productivity, generating more profits.

The results show that knowledge management helps companies to be more productive and profitable, which is supported by Drucker (1993), Agudelo (2011) and Barroso (2011). Other benefits include that it helps companies for general development, as stated by Evinsson & Malone (1997) and Choi & Lee (2002). Knowledge management allows the entrance and assimilation of new technology and helps organizations to be updated and for understanding continuous improvement procedures. However, 27% indicated that there is no relation between knowledge management and productivity, which probably means those participants did not have a clear concept of what knowledge management is. There is little or no linkage with scientific research centers and participants have scarce information about Government programs for supporting their companies, except in the case of agricultural ones. ones.

- Entrepreneurial competencies

  According to the data gathered from the owners or directors in the seven regions, there was the following general information:

  a) Participants' age was classified in the following ranks: young adults (18-29 years old, 71.65%); adults (30-59, 21.93%), and seniors (60 or more, 6.42%). From the total participants 49.46% were women.
  - b) About the type of enterprises, 81% were micro and 19% small.

- c) About marital status, 19.25% were single, 69.25% married and 11.5% had another status.

d) Participants' maximum study level: elementary (six years, 26%), junior high school (9 years, 34%), senior high school (12 years, 30%), and professional studies (10%).

According to the results, the competencies most participants agreed to have were "family and values" (4.6, totally agree), followed by "long term vision for the business" (4.3, agree), "hard work" (4.3, agree) and "tolerance to risk" (4.3, agree). The lowest grade was for "persuasion" (3.8, agree), which refers to team work. In general, the participants had an average of 4.2 (agree) with the general results of the questionnaire, which makes this study very homogeneous. There were no significant differences among the results in the seven regions in the seven regions.

### Correlation

Correlation among entrepreneurial competencies were positive and significant (p<0.01). The strongest were for "long term vision for business" and "hard work", "credibility" with "hard work" and "capability for trying again and learning" with "hard work", with the same trend in the seven regions.

# **Factor analysis**

The results show that all the answers to the questionnaire charged in 11 factors, with 68.7% of the total explained variance. The factors with most variance were entrepreneurial qualities (11.893%), risk prevention (4.354%), persuasion capability (3.753%), feeling of belonging and affiliation (3.314%) and personal competitiveness (2.865%).

# **Qualitative answers**

In the third section of the questionnaire, about the reasons for not creating a business, 47.9% said that this is because of lack of money; 21.1% because of lack of technical knowledge for creating and strengthening their business units; 11.2% to lack of experience, and 19.8% think it is because of lack of vision, interest, wishes for having a business, will, training and planning. But the most surprising was the difficulty people have for working with others (team work), which was seen in the questionnaire results and in the factor analysis.

Most of this companies work in the traditional way because it is how owners learned from their family or through personal experience. It is important to understand not only the entrepreneurial competencies, but also the local culture and how proud the people are about their last names, their typical garment and other symbols. It was also observed that 82.2% of the

participants think they are competent for working in a company and 70.3% feel competent for starting a business, but only 9.4% know about support programs for micro and small businesses. The results also show that 70% dedicate to commercial activities, 18.5% to services, 9.4% to manufacturing activities, but only 2.1% to agricultural activities.

### Discussion

Knowledge generation is traditional, which means that it is transmitted from parents to children, in all kinds of enterprises, especially the agricultural, commercial and service ones. However, they have limitations for market information and access. They do not develop high quality products, and neither generates databases or systems, as Kaplan and Norton (1996) state. Their efficiency is based on the limits of their production methods in agricultural and manufacturing companies, and by the traditional ways for selling and offering services. A micro or small business usually emerges from somebody's initiative in the family, who starts a business, makes it grow and leaves it to their children. There is lack of professionalization and access to new ways for commercialization new professionalization and access to new ways for commercialization, new marketing and merchandising formats for stores, as well as technical advances for agriculture, as Kauffman (2001) mentioned.

Employees acquire competencies on the job, except for manufacturer firms, in which there are some who have technical knowledge obtained in educational institutions or training centers. Knowledge transfer is internal via training or on the job learning, but there is scarce contact with business chambers and participation in fairs or product shows. The creation of intangible assets is Seviby's (2001) internal structure kind, recurring to dialogue and contacts for new knowledge, but no ICT are used for designing customer databases. There is more human relation without information technology, as Choi & Lee (2001) mentioned. Tacit knowledge (Nonaka & Takeuchi, 1995) becomes explicit within the organization, but it is not registered, formalized or transferred through manuals or written procedures, so it its underemployed or is lost, as Barroso (2001) stated. Metacognition (Flavell, 1978) must be enhanced.

People in the rural municipalities of Yucatan have important qualities for being entrepreneurs. They want to have a job and are family oriented, hard workers and with great dedication. However, entrepreneurial training must be directed to reinforce their qualities as entrepreneurs, to manage risks and to be able to persuade others and work in teams. This could be extended to all people in the Yucatan Peninsula, due to the same origin and customs. They are proud of their heritage, but they have the capability and are willing to start other kinds of business beyond the traditional ones.

### Conclusion

From the participants' perception, there is relation between knowledge management and organizational performance, so the companies which better manage knowledge are the ones with more probabilities for adapting to their environment, survive and grow, creating competitive advantages and taking the opportunities for developing and lasting in the market. So, knowledge management is fundamental for the successful performance of micro and small business companies for the development of the State of Yucatan. According to the results, this is also valid for any organization in the world.

There is a strong relation among entrepreneurial competencies and performance, especially for those competencies related to family, the will for having a business and to ethically serve a market. However, they need technical experience and be more tolerant to risk, reinforce their entrepreneurial qualities, prevent risks and work with others.

entrepreneurial qualities, prevent risks and work with others.

From all of this, it could be concluded that programs centered in knowledge management and entrepreneurial competencies are required, more than programs centered in cultural features, tradition or the use of soil. Instead of teaching people to make handcrafts, which is a good traditional activity, Government, investors and academics must work together for designing and implementing programs to promote the use of technology, teaching them how to innovate. People from those regions have shown that they are capable and willing to learn to perform other activities beyond the traditional ones, which is evident in the migrants to the U.S.A. and work in high tech enterprises. Yucatan is a good place for technology enterprises to settle down because there are people able and willing to learn and improve their quality of life. This means fair salaries, personal development opportunities and improving and opportunities for improving quality of life. Large companies could hire micro or small enterprises in Yucatan as their suppliers in a value chain program, or maybe starting a spin off program in the State, due to the people's profile. Government, business chambers and academics must be included for better social results.

It is essential to teach people in Yucatan how to use their competencies for learning how to learn, so they become managers of their own learning and knowledge, without the influence of "experts" or politicians just telling them what to do. This is an important way in which Mexico and all regions like these in the world, could become stronger and improve their quality of life.

### **References:**

Agudelo, M. A. (2011). Rol estratégico de la universidad en la construcción de conocimiento para el entorno global. En A. M. Sánchez y M. C. Corrales

(Eds.). Administración de conocimiento y desarrollo basado en conocimiento, redes e innovación. [Strategic role of the university in building knowledge for the global environment. In A.M. Sánchez and M. C. Corrales (Eds.). Knowledge management and development based on knowledge, nets and innovation]. Mexico: Cengage.

Andersen, A. (1995). *Modelo de la American Productivity & Quality Center*. [American Productivity & Quality Center model]. Retrieved June 6, 2011, from http://www.exa.unicem.edu.ar

Barroso, F. (2011). Gestión del conocimiento en empresas y organizaciones sociales productivas exitosas en el estado de Yucatán. Ponencia presentada en el XVI Congreso Internacional de Contaduría, Administración e Informática. FCA UNAM. [Knowledge management in enterprises and productive social organizations in the state of Yucatan. Proceedings of the XVI International Congress of Accounting, Administration and Informatics. School of Accounting and Administration. National Autonomous University of Mexico]

Choi, B. & Lee, H. (2002). Knowledge management strategy and its link to knowledge creation process. *Expert Systems with Applications*, 23, 173-187. COPLADE (2008). Comité de Planeación para el Desarrollo del Estado de Yucatán. [Planning Committee for the Development of the State of Yucatan]. Merida, Yucatan, Mexico: Yucatan State Government.

Davenport, T. H. & Prusak, L. (1998). Working knowledge. How organizations manage what they know. E.U.A: Harvard Business School Press.

Drucker, P. F. (1993). *Post-capitalist society*. New York, U.S.A.: Harper Collins Publishers.

Evindsson, L. & Malone, M. S. (1997). *Intellectual capital: realizing your company's true value by finding its hidden brainpower*. New York, U.S.A.: Harper Business.

Flavell, J. H. (1978). Metacognitive development. In J. M. Scandura & C. J. Brainerd (Eds.). *Structural Process Models of Complex Human Behavior*. Holland: Sifthoff & Noordhoff.

Hernández, R.; Fernández, C. & Baptista, L. P. (2010). *Metodología de la investigación* [*Methodology of research*] (5th. ed.). Mexico: Mc Graw Hill. INEGI (2009). *Micro, pequeña y mediana empresa. Censos económicos 2009*. [*Micro, small and middle sized enterprises. Economical Census 2009*]. Retrieved December 1, 2013, from http://www.inegi.org.mx/est/contenidos/espanol/proyectos/censos/ce2009/pd f/Mono\_Micro\_peque\_mediana.pdf

INEGI (2010). Censo de población y vivienda. [Population and housing census] Mexico: INEGI.

Jaramillo, H.; Lugones, G. & Salazar, M. (2001). *Manual de Bogotá para la normalización de indicadores de innovación tecnológica en América Latina y el Caribe*. Colombia: Red Iberoamericana de Indicadores de Ciencia y Tecnología (RICYT) / Organización de Estados Americanos (OEA). Colciencias/ OCYT. [Bogota Manual for Innovation Indicators Normalization in Latin America and the Caribbean. Colombia: Hispanic and American Net of Science and Technology (RICYT) / American State Organization (OEA). Colciencias /OCYT].

Kaplan, R. & Norton, D. (1996). *The Balanced Scorecard: translating strategy into action*. U.S.A.: Harvard Business School Press. Kauffman, S. (2001). El desarrollo de las micro, pequeñas y medianas

empresas: un reto para la economía mexicana. *Ciencia Administrativa*. [The development of micro, small and middle sized enterprises: a challenge for Mexican economy. Administrative Science]. Retrieved October 13, 2006, from <a href="http://www.uv.mx/iiesca/revista2001-1/empresas.htm">http://www.uv.mx/iiesca/revista2001-1/empresas.htm</a> Kieso, D. & Weygandt, J. (1999). Contabilidad Intermedia (2ª ed.). [Intermediate accounting]. Mexico: Limusa

Lev, B. (2004, June). Sharpening the intangible edge. Harvard Business Review, 109-116.

McClelland, D. C. (1973). Testing for competence rather than intelligence. American Psychologist, 28 (1), 1-14.

Nonaka I. & Takeuchi, H. (1995). The knowledge creating company. How Japanese companies create the dynamics of innovation. New York, U.S.A.: Oxford University Press.

Palacios, L. (1999). Sabiduría popular en la empresa venezolana. [Popular wisdom in the Venezuelan enterprise]. Caracas, Venezuela: Andres Bello Catholic University.

Robbins, S. & Judge, T. (2013). Organizational behavior (15a. ed.). U. S. A.: Prentice Hall.

Santos, R. A. (2011). Competencias emprendedoras de jóvenes y oportunidades para su desarrollo laboral en su región. El caso de la zona maya denominada Camino Real de Campeche. Tesis doctoral no publicada. Universidad Anáhuac Mayab. Mérida, Yucatán, México. [Entrepreneurial competencies of young people and opportunities for their labor development in their region. The case of the Mayan zone named Royal Road of Campeche. Unpublished doctoral dissertation. Anahuac Mayab University, Merida, Yucatan, Mexicol

Schultze, U. & Boland, R. (2000). Knowledge management technology and the reproduction of knowledge work practices. *Journal of Strategic* Information Systems, 9 (2-3), 193-213.
Seeley, C. & Dietrich, B. (2000). Crafting a knowledge management

strategy. Knowledge Management Review, 3, 18-21.

Sveivy, E. K. (2001). *Towards a knowledge-based theory of the firm*. Retrieved January 12, 2012, from http://www.sveiby.com/articles/knowledgetheoryoffirm.htm.

|                                   | Appendix A Question   | naire         |                 |                       |          |                     |
|-----------------------------------|---|---------------|-----------------|-----------------------|----------|---------------------|
|                                   | Entrepreneurial competencies survey   |               |                 |                       |          |                     |
| Instructions: Re                  | ad the following statements and mark with an "x" in the square which best represents  | what you thin | k. Thanks.      |                       |          |                     |
|                                   |   |               |                 |                       |          |                     |
| Name<br>Age                       |   |               | Date:<br>Major: |                       |          |                     |
| Sex                               |   |               | Place of birth  |                       |          |                     |
| Place of birth<br>Place of living |   |               | Maximum ac      | ademic ievei          |          |                     |
| 1 Entreprenet                     | rial spirit. It refers to the features such as "business smell" , having an idea or   | 5             | 4               | 3<br>More or less     | 2        | 1<br>Totally        |
| doing it no matt                  |   | Totally agree | Agree           | agree                 | Disagree | disagree            |
| 1.1                               | You act for yourself before you are forced to do something  |               |                 |                       |          |                     |
| 1.2                               | You constantly look for new products or servicees to help you solve your needs or improve your work   |               |                 |                       |          |                     |
| 1.3                               | You take advantage of innovative opportunities for doing business and getting resources   |               |                 |                       |          |                     |
| 1.4                               | You make your effort for manufacturing a product or offering a service you think  |               |                 |                       |          |                     |
|                                   | fulfills or exceeds customer expectations  When you start a task or a new project, you gather all information possible before   |               |                 |                       |          |                     |
| 1.5                               | doing it.   |               |                 |                       |          |                     |
|                                   | sion for the business. It refers to feeling a great need to implement the business unit, ingness for sacrificing initial profits in order to operate in the long run. | Totally agree | Agree           | More or less<br>agree | Disagree | Totally<br>disagree |
| 2.1                               | When you decide doing an activity or business, you do it despite the barriers and obstacles.  |               |                 |                       | _        | _                   |
| 2.2                               | It is important for you investing in the short term for reaching competitive  |               |                 |                       |          |                     |
| 2.3                               | advantages in the long term.  When you're doing a job for other persons, you effort in a special way for  |               |                 |                       |          |                     |
|                                   | achieving their satisfaction with the job done unical experience. Knowledge about the business, the process and the product. For                                      |               |                 | More or less          |          | Totally             |
|                                   | s, the person must connect with the business for not less than 5 years.   | Totally agree | Agree           | agree                 | Disagree | disagree            |
| 3.1                               | You have the knowledge for starting a business  |               |                 |                       |          |                     |
| 3.2                               | You have the knowledge for operating a business   |               |                 |                       |          |                     |
| 3.3                               | You have experience for making the products or giving the service you offer   |               |                 |                       |          |                     |
| 3.4                               | You are aware of the needs detected for opining a business  |               |                 |                       |          |                     |
| 3.5                               | You know the entrepreneurial environment in your region   |               |                 |                       |          |                     |
| 3.6                               | You know your strengths   |               |                 |                       |          |                     |
|                                   | o risk. It's the capability for facing calculated risks, this is, the capability for taking previously study or plan.   | Totally agree | Agree           | More or less<br>agree | Disagree | Totally<br>disagree |
| 4.1                               | You assess the risks consciously when you start an activity   |               |                 |                       |          |                     |
| 4.2                               | You evaluate all aternatives when you start an activity   |               |                 |                       |          |                     |
| 4.3                               | You work for reducing risks   |               |                 |                       |          |                     |
| 4.4                               | You control the results when you take risks   |               |                 |                       |          |                     |
| 4.5                               | Challenging situations or with a moderate risk are attractive for you.  |               |                 |                       |          |                     |
| 5. Hard work. A<br>immediate rewa | wareness for dedicating effort and many working hours, many times without rds.  | Totally agree | Agree           | More or less<br>agree | Disagree | Totally<br>disagree |
| 5.1                               | You make your best effort for doing the activities needed to be done.   |               |                 |                       |          |                     |
| 5.2                               | You finish your work on time.   |               |                 |                       |          |                     |
| 5.3                               | You get angry when other persons don't do the things correctly.   |               |                 |                       |          |                     |
| 5.4                               | You do what is necessary without needing others to tell you to.   |               |                 |                       |          |                     |
| 5.5                               | Your performance at work is better than the other people's you are working with.  |               |                 |                       |          |                     |
| 5.6                               | You are more interested in the satisfaction of a well done job, than in the money you will receive for it.  |               |                 |                       |          |                     |
|                                   | r trying again and learning. It implies tenacity and perseverance. Not feeling<br>here's a failure. Benefit from mistakes.  | Totally agree | Agree           | More or less          | Disagree | Totally             |
| 6.1                               | When you face a difficult problem you invest time for finding a solution as   |               |                 | agree                 |          | disagree            |
| 6.2                               | convenient as possible for you.<br>When facing a challenge or barrier, you make all possible or even change your  |               |                 |                       |          |                     |
|                                   | strategy for overcoming such challenge or barrier.  |               |                 |                       |          |                     |
| 6.3                               | You assume all responsibility when you get your goals and objectives.   |               |                 |                       |          |                     |
| 6.4                               | To which extent you try different ways for overcoming barriers and obstacles between you and your goals.  |               |                 |                       |          |                     |
|                                   | t refers to the capability for understanding others in the team and choosing the most<br>mbers. It is to work in teams in a cooperativa environment                   | Totally agree | Agree           | More or less agree    | Disagree | Totally<br>disagree |
| 7.1                               | You use strategies for persuading others  |               |                 | agree                 |          | uisagiee            |
| 7.2                               | You are supported by others for achieving your targets  |               |                 |                       |          |                     |
| 7.3                               | You develop or keep a net of business contacts  |               |                 |                       |          |                     |
| 7.4                               | You achieve, through persuasion, that others support your suggestions   |               |                 |                       |          |                     |
| 7.5                               | You insist many times for having others do what you want them to do   |               |                 |                       |          |                     |
|                                   |   | 1             | 1               |                       |          |                     |

|             | libility. It refers to offering quality products, respecting customers, being friendly with  Summarizing, it is doing things well with customers and workers, having integrity and acting according to principles and values. | Totally agree | Agree | More or less agree    | Disagree | Totally<br>disagree |
|-------------|---|---------------|-------|-----------------------|----------|---------------------|
| 8.1         | To which extent do you think you could make an extraordinary effort to do your job?   |               |       |                       |          |                     |
| 8.2         | You cooperate with your partners  |               |       |                       |          |                     |
| 8.3         | You place yourself in theirs if it is necessary for finishing an assignment   |               |       |                       |          |                     |
| 8.4         | You value co-workers' goodwill in the long run more than in short term profits  |               |       |                       |          |                     |
| 8.5         | You always do what you promise  |               |       |                       |          |                     |
| 9. Prioriti | ze. Having enough ability for setting up priorities and accomplishing them.   | Totally agree | Agree | More or less<br>agree | Disagree | Totally<br>disagree |
| 9.1         | You set up goals and objectives which have a personal meaning and challenge.  |               |       |                       |          |                     |
| 9.2         | You have a clear and specific vision of what you want in the long run.  |               |       |                       |          |                     |
| 9.3         | You set up short term objectives  |               |       |                       |          |                     |
| 9.4         | You frequently measure objectives   |               |       |                       |          |                     |
| 9.5         | You plan a big project dividing it in smaller tasks   |               |       |                       |          |                     |
|             | culture. It refers to the correct handling of family emotions, the importance of  | Totally agree | Agree | More or less          | Disagree | Totally             |
| 10.1        | g a professional management and the capatility for preparing the company for succession.  You listen carefully when somebody talks to you   |               |       | agree                 | -        | disagree            |
| 10.2        | You think your family and the business are very important for you   |               |       |                       |          |                     |
| 10.3        | If you had a business in the future, you would think leaving the business to your   |               |       |                       |          |                     |
| 10.4        | children when vou become old.  You think the family business is a family ownership  |               |       |                       |          |                     |
| 10.5        | You care about the image you project to the community   |               |       |                       |          |                     |
|             | reneur professionalism. Implies having the capability for developing abilities and  |               |       |                       |          |                     |
| _           | pabilities, as well as the necessary practices and strategies for assuring the company  | Totally agree | Agree | More or less<br>agree | Disagree | Totally<br>disagree |
| 11.1        | You look for control autonomy, avoiding rules from other people.  |               |       |                       |          |                     |
| 11.2        | You trust in yourself for finishing a difficult task or for facing a challenge.   |               |       |                       |          |                     |
| 11.3        | You plan large tasks dividing them in smaller ones with definite due dates  |               |       |                       |          |                     |
| 11.4        | You follow up your plans for checking your results, and value new conditions of the environment.  |               |       |                       |          |                     |
| 11.5        | You keep record of your activities and use them for decision making   |               |       |                       |          |                     |
| 11.6        | You trust you could be successful in any activity you want to do  |               |       |                       |          |                     |
| Now, answ   | ver these final quiestions in the boxes provided.   |               |       |                       |          |                     |
|             | 1 Do you feel competent for working in a company?   |               |       |                       |          | •                   |
|             | 2 Do you feel competent for opening a business??  |               |       |                       |          |                     |
|             | 3 In which kind of work do you feel yourself competent?   |               |       |                       |          |                     |
|             | 5 Do young people in your region start their own business? If not, ask why.   |               |       |                       |          |                     |
|             | General comments  |               |       |                       |          |                     |
|             |   |               |       |                       |          |                     |