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In Pro-Research, Teaching and Training of human resources committed to Science. The content of the articles and reviews that appear in each issue are those of the authors and does not necessarily the opinion of the editor in chief.

In Number 1st presented an article Influence of Economic Level in the Lifestyle from a Social Perspective by PEÑA-MERINO Alejandra, GUERRERO-ALCOCER Elvia Vianey, PÉREZ-GARCÉS Ranulfo and MÁRQUEZ-MOLINA Ofelia with adscription *Universidad Autónoma del Estado de México,* next article Administrative management of education quality in the classroom at the University of Sonora by ESPINOZA Francisco, ROBLES Juan and CALLES Fernando with adscription *Universidad de Sonora*, next article Youth Mexican labor market, ethnicity and education 2010 by SALGADO-NAIME, Fátima Yamel`, DA SILVA-BICHARA, Julimar`` and SALGADO-VEGA, Jesús``` with adscription *Instituto Ortega y Gasset y Universidad Complutense de Madrid, Universidad Autonóma de Madrid, Universidad Autónoma del Estado de México*, next article The triple helix as a succesfull model for integrating multidisciplinary workgroups on innovation projects in the Technological University of Tula-Tepeji, Mexico by VÁZQUEZ-NÚÑEZ, Edgar, DEL VILLAR-DELGADILLO, Victor Manuel, CASTILLO-TREJO, Alfredo and ACEVEDO-SÁNCHEZ, Ismael with adscription *Univerisidad de Tula-Tepeji.*

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Influence of Economic Level in the Lifestyle from a Social Perspective

PEÑA-MERINO, Alejandra†*, GUERRERO-ALCOCER, Elvia Vianey, PÉREZ-GARCÉS, Ranulfo and MÁRQUEZ-MOLINA, Ofelia

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Abstract

The Association of lifestyle with socio-economic factors has been documented in developed countries. Behaviors of health such as food, physical activity and the bad habits are agents that are correlated with the lifestyle and socioeconomic position. Max Weber offered a sociological view of lifestyle emphasizing the adoption and maintenance of social determinants, as well as the socio-economic aspects.

The aim of this work is to analyze the influence of economic level in the lifestyles from a social perspective by an electronic bibliographic review of articles related to the economic level, lifestyles, as well as sociological theories of Max Weber. The results show that life styles have been modified as a result of that society has progressed to side of modernization; in addition the choices for the consumption realize so much of an individual way as in conformity with the socioeconomic position of the individual. In this way, consumption, production and the social position that provides the economic level are influential factors in the lifestyle

Lifestyles, Economic level, Social theory, Max Weber

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Introduction

The socio-economic level is not a physical feature and easily informable but that is based on overall measure that combines the economic and sociological part of the preparation for work of a person and of the economic and social position individual or family in relation to other people (Vera-Romero 2013), as well as the manner in which they integrate the various personal traits and family, according to the countries and historical moments of each one.

The interest to consider the socio-economic data, is based on the fact to take into account the greater amount of factors (Bauce & Córdova 2010), that allow you to have an approximation to the reality of families and in this way have a measure more objectively on their condition, associated with socioeconomic level are the styles of life (Gil Flores, 2013).

The aim of this study is to analyse the influence of economic level in the style of life from a social perspective. The present work is structured in the following manner: first, presents a literature review of the main sociological theories of Max Weber. Presents the methodology and, finally, we present the results obtained and the conclusions of the work.

Literature review

The style of life, according to Perez of the Plaza (2003), refers to the set of habits and customs that are influenced, modified, encouraged or forced by the socialization process to which we are all subject to throughout life and reflects the way in which the subject is integrated in the world that surrounds it.

The style of life (SL) is defined by the World Health Organization (WHO) as a general form of life, based on interaction between the conditions of life and the individual patterns of conduct, determined by socio-cultural factors and personal characteristics. The style of life incorporates a social structure, defined by a set of values, norms, attitudes, habits and behaviors (García-Laguna et al, 2012).

The styles of life are determined by the presence of risk factors and/or protective factors for the well-being by which should be viewed as a dynamic process that not only consists of actions or behaviors of the individual but also actions of a social nature (Lluen Juárez, 2013).

Acuña Castro & Cortes Solis (2012) mentioned that it is "a way of life that is based on identifiable patterns of behaviour, determined by the interaction between the individual personal characteristics, social interactions and the conditions of socio-economic life and environmental".

The socioeconomic level is an overall measure that combines the economic and sociological part of the preparation for work of a person and of the economic and social position individual or family in relation to other people. Therefore, to analyze the socioeconomic level of a family, there seems to be some consensus on the idea that the socioeconomic status of families includes three basic aspects: economic income, educational level and occupation of the parents as mentioned Vera-Romero (2013).

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However, Max Weber offered a sociological view of the style of life emphasizing the social determinants of its adoption and maintenance, admitted that the style of life is determined in part by the socio-economic aspects, but to turn the style of life which they adopt individuals influences and even determines the theory of social stratification.

Its stratification model refers to a three-dimensional outline, based on the separation of the orders or economic, social and political spheres, where reference is made to the way in which societies have been subjected to a process of ordering and systematization, with the goal of making predictable and controllable the life of man.

This process is manifest in at least three areas of human life: at the level of the images of the world (religious and metaphysical concepts), at the level of collective action, where politics, economics, law and other institutions of public life have become technocratic organizations; and at the level of the individual action, where the personal life-style is oriented according to functional patterns of production and consumption.

Within the stratification that performs Weber, as mentioned above takes place in three different dimensions - economic, social and political - and are represented respectively in the phenomena of the classes, the strata and the parties (Duek & Inda, 2006).

Social classes are formations or strata that appear in the context of situations divided the market into two basic categories deferred for possession or ownership of the means of production, although the existence of class differentiation is supported primarily on the amount of income or sources of goods (Lopez, 1989), the estates represent the distribution of social power:

"Honor status" or prestige, are expressed by a specific lifestyle, expected by all who wish to belong to that circle, setting their class order , the typically effective claim, positive or negative privileges in social consideration (Solano, 2002), parties are mainly the distribution of political power, the characteristic is that this phenomenon is pursuing is power, exercise Community actions influence or seek to conquer the direction of the association in which they develop (Duek & Inda, 2006).

Ruano (2002) mentions that the more advance society on the side of the modernization both more reality will be the trend toward bureaucratization, whose general meaning consists in the imposition of a new "style of life" that reproduces forms of technical rationality instrumental.

On the other hand Alvarez (2012) added that there is a distinction in regard to that life-styles are not based on what the person produces, but in what used or consumed; therefore, the styles of life are not based on the relationship with the means of production but with those of consumption.

The style of life, according to Gómez (2005), is made up of two elements: the conduct vital and life opportunities. The vital behavior is defined as the elections that made individuals in their style of life and vital opportunities constitute the probability of making such elections on the basis of their socio-economic position.

Similarly Pierre Bourdieu, he contributed significantly to the study of the lifestyles particularly applied to the field of health, analyzed the lifestyles related to health, as there is a link between health and disease and their position subjects in the social structure, which I call habitus, defined as:

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"Systems of durable and transferable dispositions, structured structures predisposed to function as structuring structures, that is as generators principles and organizers of practices and representations that can be objectively adapted to an end without assuming the conscious search ends and the express domain of necessary operations to achieve "(Cruz et al, 2013).

The style of life is more articulated toward the fight between social classes, the people from the same social class tend to share the same styles of life, such as the taste for certain foods, sports or hobbies that have the same opportunities. The habits are aligned with the individual aspirations and expectations to correspond with the objective possibility for achieving them (Alvarez, 2012).

The individuals who occupy a high position in the social pyramid and/or the upper classes, will have some practices that are placed within a particular lifestyle and which is different to the practices and style of life that keep the lower classes or individuals who are further down in the social hierarchy (Alonso, 2012).

Also, it is the theory of Social Action Max Weber in which mainly means "action" to human behavior whenever the subject or subjects linking action to it a subjective sense. The "social action", therefore it is considered as such actions where the subjective sense by subject or subjects is based on the behavior of others, guided by this in its development, which may be present or expected as future; It ie an elementary form of sociability that allows an individual to interact and be related to the others (Weber, 2002).

The inseparability between the society and the cultural factors that affect, allow you to set the different typologies of action for this theory, thus distinguishing four types of orientation of the social proceed:

1. - The rational action in accordance with the end, refers to the greater rationality of the action, by measuring the consequences of the action and comparing the effectiveness of the means in relation to the result.

2. - The rational action in accordance with values, which responds to the belief that the individual possesses, ethical value, religious, aesthetic considering that the individual already has before these convictions the decision-making process is more brief. However, the action does not cease to be rational, since the means chosen are the most appropriate to meet the order and perform the action.

3. - The affective action is determined by emotions and current moods; their sense does not set media instrumentation toward the end, but in performing an act "that yes". In other words, goes below the horizon judgmental, the subject is moved by member emotional of the moment.

4. - The traditional action is determined by the usual modes of behavior of the actor and by their customs (Ritzer, 1993).

So that social action is conceived as the elemental form of sociability that allows an individual to interact and be related to the other.

The be-in-society and be accepted by society are as a point of reference constantly renovated and verified, the adequacy of the act individually with the invisible but real requirements of the group.

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Also, the frame of reference implicit shared by the members of a group or society is endowed with a structuring power when it is able to influence the action of own and outside (Lutz, 2010), in other words, the importance given to the gaze of others shall be measured according to its ability to guide the behavior of other persons.

Methodology

As noted earlier, this research analyzes the influence of economic level in the style of life from a social perspective. This information was obtained by an electronic bibliographic review of related articles at the economic level, lifestyles, in addition to sociological theories of Max Weber.

Dependent variables

In this article is handled in the style of life as a dependent variable which from sociology, have been made relevant contributions in this regard.

However, Max Weber refers to the lifestyle as that relationship between the status, prestige and power that determine social position, defining it as a social class that includes individuals who share similar material circumstances and prestige, education and political influence and its members share a similar lifestyle, adding that lifestyles are not based on what the person produces, but what use or consume, ie, they are not based on the relationship to the means of production but with the consumer (Alvarez, 2012).

Independent variables

In this review it is considered that the socioeconomic level this conditional on the styles of life.

Since 1994, the socio-economic level of the Mexican Association of Agencies of Market Research and Public Opinion (AMAI) has become the standard for the classification of the market research industry of Mexico.

Currently the AMAI classifies households using the "Rule AMAI 8X7". This rule is an algorithm developed by the Committee of socioeconomic levels and measures the level of how satisfied are the most important needs of the household, also produces an index that classifies households in seven levels, considering eight characteristics or possessions in the home and the schooling of the person making the greatest contribution to expenditure.

The eight variables are: Educational level of the head of household or person making the greatest contribution to expenditure, number of rooms, the number of bathrooms, number of outbreaks, number of cars, possession of shower, possession of stove, type of floor and the seven levels and its main characteristics are (AMAI, 2016):

Results

Within the reviewed literature electronically in articles related to the theme.

Results were obtained in which in the theory of social stratification of Max Weber, which is divided into three main areas that are the economic, social and political, emphasis is placed on the way in which the society today have been subjected by an important systematization which seeks to keep a check on the life of the individual. An example of this is meant the economic level, this being a social determinant dispensable in the present, added to this is determinant has arrived getting a value in the resolution of the styles of life, linking this way to the pattern of production and consumption.

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On the other hand, is the theory of social action in the detailed precisely as the actions of the sociability of an individual allow this relates to its environment, in other words, the actions carried out by each of the individuals are subjective sense of the subject or subjects and are referred to the behaviour of others, becoming in this way domain on the adoption of the styles of life.

Conclusions

This literature review was carried through electronics to analyze the influence that has the economic level in the styles of life.

All organized societies have been structured in different groups in the course of time; this has fallen in which each of these get privileges, obligations and different interests.

The as relate these references to external values of social phenomena, stressing that human actions are subjectively, it is understandable that these actions refer only to some values (Lopez, 2005).

Due to the foregoing it is as from a social perspective, life styles have evolved hand in hand with the modernization, added to this the elections of consumption not only are done individually, but that are influenced in accordance with the socio-economic position of each one of them.

It is, as the consumption, the production and the social position which provides the economic level, as well as the actions taken by each individual are influential factors in the style of life.

With future lines of research are proposed to expand the vision from a social perspective of how each of the determinants and factors are influencing this theme and how has gone to disrupt societies for generations. As they are reporting evidence, reports and even articles to the public researcher, will be feeding back the social field.

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Administrative management of education quality in the classroom at the University of Sonora

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Abstract

College students pursuing bachelor's degrees for the purpose of a better life and expectations of above-average income, however this is subject to placement in a job that meets your expectations and that this in turn demands professionals with skills and sufficient for the position occupied and, so the quality of the education they receive is of utmost importance so that graduates meet their goals knowledge. That is why at the University of sound exists within the institutional development plan programs that show concern for the formation of future graduates, education and quality management thereof together with the media, teachers and students converge on the classroom, where the transmission of knowledge and development of abilities and skills of future professionals is consummated, this study aims to identify which of the four dimensions pupils most important considered to achieve the quality of education they demand, for which teaching strategies, media, student engagement and teacher, and the relevance of the programs, which is to know which considered more influence on the quality of education they receive, for which it was conducted was studied a exploratory qualitative research type and cross - section and instrument for lifting the probabilistic method, where the results showed that the relevance of programs with r = *782*** is used ** and secondly the teaching strategies with r =, *725* **, which demonstrate that the knowledge that future professionals demand for quality training have to be cutting edge and methods of placement and assimilation of knowledge for the development of their competences have to be ad hoc kind of knowledge and skill to be developed, this for higher education institutions should be a work area and achieve continuous improvement to meet the demand of their students and / or future graduates.

Education, quality programs, instructional strategies, student, teacher

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Introduction

The University of Sonora with the aim to advance knowledge of current features, needs and trends market exchange professional work from the perspective of the graduates and employers, as well as carry out the analysis of their relevance, in order to promote changes in the graduate profiles to make them consistent with the competencies and skills demanded in the workplace, and thereby facilitate early job placement and professional achievement college graduate.

Its objectives are:

- To know work history and perception of graduates received vocational training in university classrooms, to have the necessary data review processes, adaptation and updating curricula.
- Seek feedback from employers regarding work performance of university graduates, to assess the social impact and impact on the economic and productive development of the public and private sectors.
- To know the perception that society has on the quality and results of the University of Sonora.
- Support actions to restructure the educational offer through studies of relevance of all undergraduate educational programs of the institution.

Lines of action

- Conduct a review of information collection instruments to include, where appropriate, the variables required according to the purposes of the various studies.
- Manage resources necessary to carry out the various studies through PIFI.
- Hiring conducting surveys to external entities. • Perform the capture, coding and analysis of relevant results.
- Perform editing the results of studies and disseminate them through the website of the institution and printed books.
- Design mechanisms for the results of studies graduates, employers and relevance are actually used in the restructuring of the curriculum.

Management goals

- Conduct studies every two years, graduates of all evaluable programs: BA in 2015 and 2017, and graduate in 2014 and 2017.
- Conduct studies of employers, every two years, the total assessable programs: BA in 2014 and 2016, and graduate in 2015 and 2017.
- Develop an annual survey of opinion of society on the results of the University of Sonora and publish (2014, 2015, 2016 and 2017).
- Integrate studies every two years, labor and educational relevance for total assessable degree programs of the institution and publish their results (2014 and 2016) (Institutional Development Plan 2013-2017).

Justification

The obligation of the institutions of higher learning to provide quality education is paramount to the demand society better prepared professionals to respond to current needs and generate added value to the economic environment in which they are immersed.

In this research is to know the variables that overall quality of professional graduates.

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Objectives

General:

Analyze the variables that affect the quality of vocational education students, which gives the prompt insertion into the labor market

Specific:

Measure the perception or n with students about the variables:

-Didactic strategies

-The Commitment of the student and teacher

-The relevance of programs

-The Generating means learning environments

Goals:

Check that they are the means by which students achieve their expectations or n HOMEWORK they receive.

Methodology

Kind of investigation

This research is exploratory qualitative and cross - sectional and do not try to give an explanation of the problem, but only collect and identify general background, quantifications, themes and topics regarding the research, suggestions of related issues that should be examined in depth future research. Examine understudied issues or problems or that have not been addressed before; Investigate trends and identify potential relationships between variables.

Population and / or sample

Sampling

The investigation will be conducted through a simple and probabilistic random sampling, where all the elements of the universe, in this case the degrees of the Division of Economics and Management at the University of Sonora Sciences, will have the same probability of being selected; The size of the universe for determining the sample was taken from the students enrolled in undergraduate programs during the semester 2014-2, with a population size of 3943 students enrolled, information was taken from the Planning[1], the sample was determined by the following formula (Anderson, 2004).

Where:

Sample size n =

N = Total Population = Z = 1.96 (for a confidence level of 95%)

p = Proportion considered for maximum variance: 50% = 0.50

q = 1 - p (in this case 0.50 = 0.50 1)

d = maximum error acceptable range (in this case it is considered 7%)

$$186.76 = \frac{3943 * 1.96_a^2 * 0.50 * 0.50}{0.07^2 * (3943-1) + 1.96_a^2 * 0.50 * 0.50} \quad (1)$$

[1]http://www.planeacion.uson.mx/sie/alumnos/res_poblacion_his.php

Preparation of the questionnaire

To prepare the information collection instrument were taken into account the special characteristics of the study population and the work of Sanchez Hernandez and Haro (2008), Jantunen, A., (2005), Darroch, J., (2003) based on the above considering the following variables:

Education From Quality	Instructional strategies	Student commitment Teacher	Media	The relevance of Programs
Instructional strategies	**Education From Quality**	The commitment of the teacher to teach and students to learn	Having spaces that create learning environments	The objectives of programs may do matter
Teacher Student Commitment	The commitment of the teacher to teach and students to learn	**Education From Quality**	That are conducive learning environments for students and teachers	Time that are sufficient to meet the programs
Media	Having spaces that create learning environments	That are conducive learning environments for students and teachers	**Education From Quality**	That the means are conducive to the implementation of programs
The relevance of Programs	The objectives of programs may do matter	Time that are sufficient to meet the programs	That the means are conducive to the implementation of programs	**Education From Quality**

Figure 1 Matrix perception of educational quality. Source: Prepared by the author

To prepare the instrument was based on the matrix quality perception of which four dimensions emerge and which independent reagents were developed to assess each.

- Strategies Pedagogical
- The commitment of the student and teacher
- The relevance of programs
- Generating means learning environments

To prepare the instrument was based on the Likert scale because it is an instrument of assessment, with seven point response 1 being strongly disagree and 7 totally agree.

Totally In Disagreement						Totally From Agreement

Then questions containing the questionnaire for each of the dimensions listed for the instrument appear randomly grouped.

Data collection

Data will be collected through a test instrument designed and evaluated using a pilot plant for validation of the indicators used to analyze the study variables test.

Methods of data analysis

The indicators will be analyzed using statistical softwere IBM.SPSS.Statistics.v21 for MS Windows, developing a descriptive analysis of the results obtained by capturing information Likert scale. Additionally techniques appropriate to measure the frequency of the variables and the correlation applies statistical analysis. To do this, the Pearson coefficient, also known as P Pearson or simply R is calculated; and statistical test to assess the degree of reliability (Cronbach's alpha).

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Theoretical framework

Administrative management

Management is a holistic approach to the management of an institution for the establishment of its goals, vision, mission, values, strategies, structure, organization, resources and means to achieve them , processes to carry out the activities to achieve the objectives with the application of resources, means or instruments, evaluation and improvement of their performance.

Administrative management in institutions of higher level requires several duties that lead to achieving the goals they deem relevant to the achievement of the vision it has set as a goal for the future and why should every day to work for effective achievement, so it is relevant a measured and transparent management of its budget, planning and scheduling plans and academic programs, training of human resources, effective communication and management in a timely and validated information for decision-making. A considerable part of these factors in turn depends on strong leadership that promotes effectively necessary to achieve the vision proposed measures.

These managers, while having deep knowledge in their professional area and vast experience in teaching, research or cultural diffusion, may lack the qualities, skills, experience and knowledge in the management of education institutions, which could hamper the achievement gear different educational subsystems to respond to environmental demands. Some of the qualities, characteristics or skills that should meet the directors of an educational institution, among others, can be summarized as follows:

- Academic Leadership (enjoy the recognition of students as a good teacher and appreciation of the community of the entity academic, have recognition as academic distinguished in teaching, in research y/or dissemination of culture).
- Strategic Attitude (vision and mission of the university, planning, management control, organizational structure, human resources management, communication and information).
- Know broadly higher education policies of UNESCO, OECD, SEP, ANUIES, CIEES, CONACYT and internal of the institution and the specific academic institution policies.
- Deeply know the laws of the institution collaterally including their collective labor contracts.
- Proactive, empathy, interdependence, creativity and consistency to seek consensus and reduce conflict, in conformity with the legislation of the institution.
- Maintaining good relations with graduates of the institution or n, with the productive sector and the government sector.
- Institutional and attachment to the university legislation.
- Love for the institution and for the welfare of society.
- Ethics and respect for the individual, regardless of gender, race, nationality, religion or ideology.

Administrative management as a means for achieving quality in education is at all times and in all educational organization the cornerstone of support can achieve the necessary changes to give some direction towards the vision that the organization has raised as a target goal.

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Principle of managing for quality

The quality management system is a management organizations based on the principle of doing things right. But it assumes that to make things right the integrity of persons involved in the production process is as important as the effectiveness of leadership to lead the mission of the organization focused on meeting the needs of users, consumers or customers (Lepeley, 2001, pp. 6-7).

The client is a person who has a need and meet it acquires a product or service. Such acquisition gives the right to obtain the expected benefit and quality.

Customers are important, because if there were not people with needs or tastes for specific products or services, there would be demand and the organization would have no reason to exist.

- Implementing a model of quality management guides the organization in a direction that begins:
- Design a path to quality.
- Ensure the support of senior management.
- Inform people working in the organization or n about new principles underpinning the quality and training in the use of techniques MANAGERIAL t é or ñ to improve quality.
- Training of teams of specialists in quality management to lead and facilitate the implementation process.
- Disseminate quality management at all levels of the organization.
- Focus the mission and objectives to meet customers and their needs.
- Develop an organizational culture focused on the client.
- To promote creativity, innovation and experimentation processes to increase quality.
- Recognize and reward the achievements of quality.

Management in educational institutions. It assumed.

- High investments in
    - Installations and complex equipment
    - Products to advanced technology
    - ORGANISATION, information or ny conquest of markets
- Cost of senior staff
- Investments in formation or n
- High level of organization or n
- Technological or logical high level
- Variable dimensions from the big to the small university ñ a village school
- Safety and profitability guaranteed by the expansion or n (Cavassa, 2002, p a g. 20).

Industrial society has given way to a society of services and information. This requires a profound change in the skills and competencies needed in professional education (Ferrández, 2000), which until now were only necessary for certain positions. Institutions and professional success of the future will be those that are developing new capabilities to the new environment, which means that past success does not guarantee future success (Fernandez, 2001, p. XXV).

The new skills needed to adapt to the rapid and constant change will force education professionals to be flexible, adapt and live in a changing environment (Gonzalez Soto, 2000); to learn, unlearn and relearn; to be true leaders, creative and able to anticipate the developments (Fernandez, 2001, p. XXV)

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Different concepts of educational quality

Quality Concept

It is often claimed that "quality" in education is a relative concept, for several reasons. It is relative to who uses the term and the circumstances in which it invoked. Similarly, relativism has another perspective, since the quality is similar to the truth and beauty of nature, and is an ideal difficult to compromise. This leads to the conclusion that "quality" also is a term that carries the user settings, thus being highly subjective (Gonzalez, 2008, p. 249).

The word quality is understood and defined for a long time - several centuries ago, and its use indicates the final set of attributes of a product or service that lets you issue a value judgment about him. However, when we talk about educational quality and total quality we need to consider other reasons that have been defined according to own philosophies or systems which are concerned for the quality researchers as prestigious Deming. Crosby, and Juran Isikawa. Quality is meeting the requirements in ISO 9000 standards, comply with the specification, establish a relationship of efficiency between the agreement and offered with received or expected, with those features of the product or service that really meets customer needs , understood as the value through benefit perceived by the customer leaves result in satisfaction, however when talking about quality in education is clear that we enter into another context, raising the value in all cases is to increase the benefit and also raise the quality to the customer in terms of qualitative and quantitative values.

When it comes to educational quality certainly we talk about other areas such as social, relevant education and socially contributes to national development, education to raise the level of development of society for the sake of a better quality of life, or any the social context (Ramírez, 1998, pp. 19-25).

Ernesto Schiefelbein: the definition of the quality of education must be related to the ability to meet the needs of the learner, and from that care capacity to learn, develop their full ability to examine their interests; examine their problems; analyze information that allows you to address these problems, and find the most appropriate solutions (Alvarez-Tostado, 1997, p. 60).

Pirsig (1976) relates quality with the Greek arete which means excellence << excellence function >> function as the elements considered each object, institution or individual has a special role to play. From this definition, the role of the teacher appears here as plan and provide a curriculum to their students and evaluate their success. But it should be an optimal curriculum for each student, a member of a class consisting of students from a variety of capacities and needs (Wilson, 1992, p. 34).

And how can you measure the quality of an education system? For the quality of an education system can be measured from the point of view that the goals that society assigns (Alvarez-Tostado, 1997, p. 18) are met.

Quality assurance

The phrase quality assurance refers to policies, attitudes, actions and procedures necessary to ensure that they maintain and raise the quality and therefore the quality is the responsibility of each institution, and it is expected that these are responsible for offering it (National Association universities and Institutions of Higher Education, 2001, pp. 38-45).

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Quality assurance in higher education institutions is what society demands of them. Institutions today have the challenge of social demands, which calls for effective integration into the labor market of its graduates and they do not adopt the status of stragglers when completing their studies due to lack of capacity to perform professionally.

Society demands of educational institutions with the exercise of their activity ensure the requirements that the labor market demand for the integration of students, and to take experiences and ideas contributed by those who benefit from their activity (businesses, students, teachers, etc.) (Fernandez, 2001, p. XXVII).

Perhaps many customers (students and families) know not explain the required quality, but perceive, and so transmit it to other customers and potential customers; This is why you need to analyze and transform the processes of an institution; The product or service offered is the end result of one or more processes, and if the goal is to improve the product or service can only be achieved by working on processes and / or the end result. If processes improves the final result (Fernandez, 2001, p. 61) are improved.

Definition of educational quality assessment bodies

Today educational quality refers less memorization and the acquisition of higher level skills; equity no longer means the same for everyone, but meet the different needs in order to ensure equal learning opportunities, and efficiency is not measured by the lowest cost, but in terms of optimization of educational productivity, analyzing the relationship between inputs, processes and results.

These redefinitions are also implying the need to redirect the functioning of education systems to achieve defined in these terms results, which introduces directly the problem of management and the current difficulties of political, technical and administrative governance (UNESCO, 2004, p . 7).

The quality of the education system is not only in the level of student learning, but reflects the relations of coherence between all components of the system itself. In this perspective the quality of education comprises several dimensions: the relevance and significance, expressing the coherence between education and the needs of students and society, respectively; effectiveness, reflecting the coherence between expected aims- -the products and those actually achieved; the adequacy of resources of all kinds and efficiency of use, resulting coherence between inputs and processes with products made with them. The concept of quality cannot be dissociated from equity, it cannot be considered as good an unequal education. The quality of education also considers not only its short - term effects but also its impact on adult life. The concept of quality of the National Institute for Educational Evaluation (INEE) considers therefore all the components -context, inputs, processes and products with its elements and relationships between them ((INEE education system) 2006, p. 9).

Analysis and interpretation of results.

To verify the reliability of the instrument applied to research, test Cronbach Alfa, whose coefficient was .929, very fencing was applied to the unit, indicating that it is appropriate and validated to perform the necessary tests; in addition no sample questionnaire, which was 187 persons were excluded, and the instrument twenty questions have been accepted.

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Summary prosecution of cases			
		N	%
cases	valid	187	100.0
	excluded	0	, 0
	Total	187	100.0

Table 1 Data validation. Source: Prepared by the author

Statistical reliability	
Cronbach	N elements
, 929	20

Table 2 Data validation. Source: Prepared by the author

For variables that generate quality professional training of graduates of degree, it means analysis per item and dimensions was made. Additionally correlation tests were made to corroborate matches on relevant variables.

Dimensions	item	Average Per item	Average per dimension
Instructional Strategies	1.-	5.89	**6.01**
	5.-	5.74	
	9.-	5.99	
	13.-	**6.01**	
	17.-	5.96	
Student teacher commitment	2.-	6,05	**6.2**
	6.-	**6.26**	
	0.-	.91	
	14.-	**6.25**	
	18.-	5.95	
Media	3.-	6.04	**6.18**
	7.	**6.24**	
	11.-	6.03	
	15.-	6.09	
	19.-	5,55	
Relevance of the programs	4.-	5.79	**6,13**
	8.	6,05	
	12.-	6.06	
	16.-	6.07	
	3.-	6.04	

Table 3 Means analysis. Source: Prepared by the author

- Overall , the average was 6.17 indicating that in general, the perception is very close to totally agree, ad hoc to the scale used in the instrument (1 to 7). The perception is similar when average dimension are observed; if revised by item, identifies the most relevant for each of the dimensions that are above the average overall dimension and as follows:

- Instructional strategies. In this case the average dimension is below the global average, however, it can be obtained item most important that corresponds to the **use of technology by the teacher,** with the mean of 6.01.

- Commitment student teacher. This dimension is above the global average and are located Dos items above it. The item most important **teacher Commitment** corresponds to **the teacher,** with the average of 6.26.

- Means. É n also is above average and there ítems with the same situation. The most important is **that the classroom have an overhead projector,** with the average of 6.24.

- Relevance of programs. This dimension or n is below the global average, but if you can see an ítem which exceeds the global average and half of that dimension, which corresponds to **the students** to **know the content,** with the average 6.29.And dimension, the most important is the commitment of the student - teacher with the average of 6.2 which is above the global average.

An analysis of correlations to

Regarding the analysis of correlations, it is done in two ways: correlations between size and correlations of the items in each dimension to the overall perception of the dimensions. We must remember that the correlation analysis seeks to know the level of association between the variables studies, which, unlike the analysis of means, only the general perception of the opinion of the respondents is located. For the first case correlation shown in Table 4 and dimension the coefficients obtained to the array of perceived quality.

Quality education			Instruc-strategies	Comm-student cher	media	Relevance of grams
Spearman rho	EP	Correlation efficient	1,000	725 **	, 697 **	**718 ****
		Sig. (Bilateral)	.	, 000	, 000	, 000
	COM	Correlation efficient	**725 ****	1,000	, 668 **	, 688 **
		Sig. (Bilateral)	, 000	.	, 000	, 000
	MED	Cor relation coefficient	, 697 **	, 668 **	,000	, 782 **
		Sig . (Bilateral)	, 000	, 000		, 000
	PER	Cor relation coefficient	7 18 **	, 688 **	**782 ****	1, 000
		Sig . (Bilateral)	, 000	, 000	000	.

**. The correlation is significant at the 0.01 level (bilateral).

Table 4 Correlations between dimensions. Source: Prepared by the author

It is noted that all correlations are statistically significant, however, it should highlight the salient factors. First, the coefficient, 782 ** corresponds to the correlation being the relevance of programs with the media; that of 725 **, the correlation between teaching strategies and student engagement-teacher; and finally the correlation between teaching strategies with the relevance of programs with a coefficient of 718 **.

That is, the main correlation is found between the relevance of programs and teaching strategies, because as shown in Scheme 1 of which shows that the perception of quality based on the above items, the importance is clear media and student commitment - teacher.

ARRAY OF PERCEPTION OF EDUCATION QUALITY

Dimensions		r	Dimensions		r
Instructional Strategies	.-	, 470	MEDIA	.-	, 599
	.-	, 625		.	, 556
	.-	, 721		1.-	, 740
	3.-	, 585		5.-	, 635
	7.-	, 617		9.-	, 655
STUDENT TEACHER COMMITMENT	.-	, 555	RELEVANCE OF THE PROGRAMS	.-	, 649
	.-	, 652		.-	, 736
	0.-	, 706		2.-	, 768
	4.-	, 621		6.-	, 695
	8.-	, 607		0.-	, 528

Table 5 Correlations of items in relation to the overall perception of the quality of education. Source: Prepared by the author

The correlation coefficients of the above table show the level of association of each of the items with the overall perception of quality in the professional training of graduates of Bachelor.

In this case the most important item in each dimension is identified, which will be more specific to identify the variables that generate quality.

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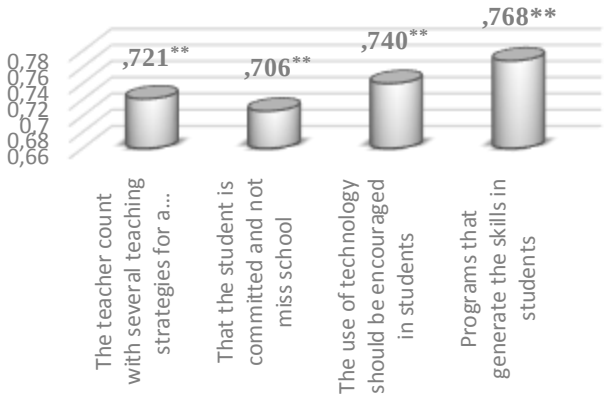

Figure 1 Most important item per dimension in the perception of educational quality. Source: Prepared by the author

There is a coincidence in the results observed in Chart No. 1 with Scheme 1 with respect to the dimension of the relevance of the curriculum with the dimension that most generates quality professional training of graduates of different degrees, specifically he found that it is important that programs generate skills in students, which is closely related to current educational requirements, which must learn to be, know and do, mainly; which complements the knowledge acquired in the classroom.

It was also important to promote the use of technology in students, which is also linked to the immersion of the information and knowledge society, where the role of technology is crucial.

Recommendations

In universities the search for the quality of its graduates formulates questions what should be done to achieve the quality of education of graduates ?; That is why this research answers some of the concerns of the question is in the air and told the students, those who demand institutions quality education tell us that degree programs coursing must be updated in order to have a quality education, and that is why we should pay special interest to the plaintiffs of education recognize institutions as those that offer quality education, on the other hand tell us that the media and teaching strategies are also considered influential in the quality of education and must follow special interest in ensuring that the pace so far has been held to be maintained, we must also maintain the interest of both teachers and students by training being received to achieve the quality of education that demand.

The classroom is where the future of the training of graduates converge and is where the management of institutions directly affects education, thus becoming the administrative management must focus their efforts on the variables that influence education quality for those who request it and meet the goal of educating and educate with quality.

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Youth Mexican labor market, ethnicity and education 2010

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Abstract

This research reviews the general aspects of the young labor market, the general conditions in Latin America and in Mexico, and a cross section econometric model for comparison of indigenous and non-indigenous youth in year 2010, as per the latest information available from Census 2010. An important difference was found in the states where there is a predominance of indigenous population—Oaxaca, Chiapas, Yucatan and Quintana Roo—in them, the education variable is important, because it has a greater elasticity. In other words, an increase of 10% of young employed people with completed secondary education, increases the employment probability to 8% of young people who obtain wages of around two minimum wages. Similarly, in states where the young people are predominantly indigenous, their getting jobs with social security also has a positive relationship with income, which means that a few more of them could get two minimum wages, or a wage that gets them out of extreme poverty.

Youth indigenous, education, econometric model, States

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Introduction

Youth employment is typically associated with limited job opportunities and high job turnover rates and a large percentage of young people, who are neither studying nor working or in training (NEET). Several variables affect youth employment and according to Freeman and Wise (1982), severe unemployment is concentrated among a small proportion of youths with distinctive characteristics, such as black youths. Sometimes, not working in earlier years could have a negative effect on subsequent wages because wage increases are related to experience.

Youth is associated with limited job opportunities and job instability (Breen, 1992). In the case of Latin America (LA), the slowdown in population growth seen in the last two decades has had a favorable effect on youth employment (Weller, 2006; Fawcett, 2001). Brinton (2000) studies the social capital available to individuals through their own personal networks.

There are some variables that explain the youth unemployment as a decline in young people's level of education which has been advanced as a possible explanation for the higher rate of youth unemployment. However, Bell and Blanchflower (2010) find that young people in industrialized countries are more educated than they were before, and Bassi and Galiani (2009) and Weller (2006) report similar findings for Latin America. Another reason is the minimum wage laws that are popular in LA, that may, for example, discourage employers from hiring people in this age group. Neumark et al (2014) conclude that minimum wages in the United States have not reduced employment.

Their results reaffirm the evidence of disemployment effects; with teen employment elasticities near −0.15, they conclude, that minimum wages pose a tradeoff of higher wages for some against job losses for others.

The introduction of new technologies also tends to increase the demand for skilled labor, which could have an impact on the recruitment of young people (Dolado, Felgueroso and Jimeno, 2000). Another important variable, according to Tanveer et al (2012), are financial crises that have an impact on youth unemployment and goes beyond the impact resulting from GDP changes. The effect on youth unemployment, therefore, is greater than the effect on overall unemployment. Chung et al (2012) states that the recent global recession, and the general flexibilization of labor markets affects the young people, concluding that the new generation – with higher exposure to systematic labor market risks than previous generations – is being left to fend for itself with little appropriate state support. Dietrich (2013) tested the ratio of youth unemployment to the corresponding adult rate, and found it to have increased in the 2000s until 2008. In the years of crisis, however, this ratio stagnated or even decreased slightly. Generally speaking, the development of this ratio seemed only to be weakly connected to the business cycle in the 2000s.

Zanin and Prometeia (2014) investigated Okun's law in OECD countries by examining estimates for male and female age cohorts for the period 1998-2012. They found that the young population, and particularly the young male population, tends to be most exposed to the business cycle in both developed and emerging OECD countries.

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Simmons et al. (2013), based on findings from a longitudinal study of 20 young people who have spent significant periods of time as NEET (Not in Education, Employment, or Training). Drawing on three years of ethnographic research conducted across two local authorities in the north of England, it focuses on the life experience of a set of young people as they move between various sites of exclusion and participation in the labor market. Central to the paper are the experiences of three individuals and their attempts to begin work in the retail, care and catering industries. The paper illustrates a range of tensions between the aspirations of young people and the opportunities open to them. It provides a critical insight into some of the conditions which characterize work on the fringes of the labor market and the interplay between these and the attitudes, values and dispositions of the young people taking part in the research. The paper's findings challenge popular discourses about young people on the margins of participation and pose questions about the articulation between education, work and training for those seeking to enter the labor market.

Yip and Wong (2014) shed light on the role of aggregate fertility as a form of statistical discrimination against young working women in the labor market; the study provides unequivocal evidence that age-specific fertility rates exert a negative impact on female wages.

Literature review

"Job shopping" is the mobility between jobs, based on uncertainty and imperfect information (see Johnson 1978). In theory, job transitions are voluntary, because they are taking advantage of the stage in their working lives when the opportunity cost is low to move from one occupation to another in search of better options (Neumark, 2002).

Young people are often employed in low-productivity activities in which the opportunities to gain expertise in a given area are much more limited (Maurizio, 2011). Oliveira et al (2011) in their research, analyzed precarious work among the young people in 27 EU member states. They conclude that the generation of young adults (15-24 years) is by far the most affected by temporary employment in all EU countries without exception and, specifically, in Spain, Germany, Portugal, Sweden and France. A temporary work will show a duality in the juvenile temporary work. Temporary work is classified as either an option or a constraint. In the first case, the negative weight associated with the precarious situation can be diluted and the precariousness of employment only really poses a problem for young people entering a working life with expectations to build a professional future.

Jimeno-Serrano et al (2000) examined a combination of an increase in the relative supply of higher educated worker and rigid labor market institutions which harms the training and labor market prospects of lower educated workers, while it raises the proportion of higher educated workers performing low-skill jobs. Morsy (2012) argued that for young people it has always been costly to find work. Historically, the rate of unemployment for the age group of 15-24 years in the advanced economies has been double or triple as compared to older age groups, and if they do not find their first job or if they cannot keep it for long, their lives and career prospects can be impaired in the long term. However, youth unemployment also has social implications and contributes greatly to the growing income inequality in the advanced economies.

Parente et al (2014) analysed the structural changes of youth employment aged between 15 and 24 years of age, with compulsory basic education (ISCED 0-2) in 1988, 1998 and 2007.

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Based on the unpublished data from Quadros de Pessoal (Labor Census - Public sector excluded) of the Ministry of Employment and Social Solidarity. The exploration of variables such as contract, seniority, working hours, and remuneration, allows configuring an autonomous labour market of juvenile manpower with regard to the general labor market. It concludes by arguing that schooling is a key differentiator of the employment relation of less educated young people apropos the higher educated ones.

Corrales y Rodriguez (2014) states that for some people, a part-time job is merely an intermediate state that serves as a stepping stone to further employment and makes the labor market integration easier. Yet, part-time work also appears in highly unstable careers. The present research aims to determine the role of part-time employment for young people with non-university studies. Using the Survey on Transition from Education/Training and Labor Market Integration (ETEFIL-2005), we built the monthly sequence of labor states for young people from when they had finished their non-university studies until the time of the survey. The analysis allows us to conclude that part-time work is fairly atypical in the early stages of a career but that those who have part-time jobs spend quite a long time in them. In addition, we identified several patterns in the use of part-time work, the 'integrative' pattern proving to be the most prevalent. Factors such as education and early preferences are seen to have a major impact on career paths.

Potestio (2014) assessed the effectiveness of a reform of the higher education system aimed at stimulating employability and faster access to the labor market for Italian graduates. Using the Taylor formula, the evolution of the employment rates has been followed through the movements and interaction of activity and unemployment rates.

The progress in the level of educational attainments has not been accompanied by a true reversal of the weaknesses within the Italian youth labor market. Two main results emerge. First, delayed entry into the Italian labor market remains a peculiar characteristic of young graduates. Second, a comparison within the 25-29 age group reveals weaker results among first-level graduates.

Mroz and Savage (2006) said that involuntary youth unemployment may yield suboptimal investments in human capital in the short run. Their theoretical model of dynamic human capital investment predicts a rational "catch-up" response; they also find evidence of persistence in unemployment. They found that unemployment experienced as far back as ten years ago continues to affect their earnings adversely despite the catch-up response.

De Lange et al (2014) states that young people in Europe face great difficulties nowadays when entering the labour market. Unemployment and temporary employment are high among youth, although considerable differences exist between European countries. In this article, we study as to what extent the cyclical, structural, and institutional factors explain cross-national variation in the youth labour market integration. In addition, we examine educational differences in the impact of these macro-characteristics. To answer these questions, we use data on young people from 29 countries who were interviewed in the European Social Survey of 2002, 2004, 2006, or 2008 and left day-time education in the period 1992-2008. Both, unemployment and temporary employment, are regarded as a lack of labor market integration, compared to the situation of permanent employment. The empirical results first show that high unemployment hinders young people from smoothly integrating into the labor market. Conversely, economic globalization positively affects youth labor market integration.

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We also demonstrate that young people experience fewer difficulties with labor market integration as the educational system is more vocationally specific. Those in the intermediate and higher educated categories particularly profit from the positive effect of the vocational specificity of the educational system. Finally, as the employment protection legislation of incumbent workers is stricter, young people experience more difficulties with labor market integration, especially the higher educated youth.

Kramarz and Skans (2014) opine that the conditions under which young workers find their first real post-graduation jobs are important for their future careers and insufficiently documented given their potential importance for young workers' welfare. To study these conditions, and in particular, the role played by social ties, they use a Swedish population-wide linked employer-employee data set of graduates from all levels of schooling that includes detailed information on family ties, neighborhoods, schools, class composition, and parents' and children's employers over a period covering years with both high and low unemployment, together with measures of firm performance. They found that strong social ties (parents) are an important determinant for where young workers find their first job. The effects are larger if the graduate's position is "weak" (low education, bad grades), during high unemployment years, and when information on potential openings are likely to be scarce. On the hiring side, by contrast, the effects are larger if the parent's position is "strong" (long tenure, high wage) and if the parent's plant is more productive. The youths appear to benefit from the use of strong social ties through faster access to jobs and by better labor market outcomes as measured by a few years after entry.

In particular, workers finding their entry jobs through strong social ties are considerably more likely to remain in this job, while experiencing better wage growth than other entrants in the same plant. Firms also appear to benefit from these wage costs (relative to comparable entrants) starting at a lower base. They also benefit on the parents' side; parents' wage growth drops dramatically exactly at the entry of one of their children in the plant, although this is a moment when the firm's profits tend to be growing. Indeed, the firm-side benefits appear large enough for (at least) small firms to increase job creation at the entry level in years when a child of one of their employees graduates.

Carmo et al (2014) state that the European and Portuguese labor markets have undergone significant changes in recent years. The high rates of unemployment have been accompanied by precarious employment – a phenomenon that is affecting younger people the most. This article analyzes how the future employment prospects of young people with few qualifications and/or on low pay, are both represented and projected. By means of a content analysis of 80 interviews with young working people in Portugal, two forms of projecting their professional future were defined: the cumulative and the noncumulative projections. Within the latter category, three subtypes were identified: those of contingency, immobility, and rupture. These categories are systematically explained, considering the notion of time as a sociological variable.

Abdih (2011) states that unemployment in the Middle East is primarily a youth phenomenon. Young people (aged 15 to 24 years) represent 40% or more of the unemployed in Jordan, Lebanon, Morocco and Tunisia, and nearly 60% in Syria and Egypt. The rate of youth unemployment in these countries was 27% on average in 2008 than that of any other region.

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These levels of unemployment have substantial economic and social costs, and in part due to the lack of labor prospects, a large number of people have migrated abroad.

Latin America

In Latin America, the situation of the youth labor market is different. Cacciamali (2005) calculated that youth unemployment in Argentina, Brazil and Mexico is two or three times that of adults, and the difficulties tend to increase among those whose level of education is lower. This is especially so in the lower-income families where young people with less schooling present a large percentage of youth who neither participate in education nor in the labor market. Employment prospects are good for those with better qualification and exclude unskilled youths. In these three countries, there is a high probability of maintaining a cycle of reproducing intergenerational poverty.

A successful entry in the labor market depends on the sharp inequalities that mark young people's opportunities for human and social capital formation (Weller, 2006). In addition, Weller (2007) examined that the employment status of the youths was worse in absolute terms along with the deterioration of the general labor market. He also noted great heterogeneity in the working conditions, depending on the level of education, gender and household characteristics. His research identifies a number of tensions between the subjectivity of the youths and the reality of the labor market.

Kilksberg (2008) argued that insecurity is one of the great problems of LatinAmerica; the homicide rate has doubled since 1980 to reach levels that could be considered epidemic. The classic response was based on police and repressive approaches known as "hard hand" which.

By contrast, prevents differentiation between organized crime and criminal acts of excluded youth and hinders the development of policies that aim to address the issue in depth.

Tong (2010) said that before the crisis, the youth unemployment rate in the Southern Cone was the highest in all of Latin America. During the period 1997-2007, Central America, Mexico and the Dominican Republic recorded the lowest rate of youth unemployment in the region. The female youth unemployment rate for 2005 is 1.4 times higher than the male rate. This relationship held until 2008. Since 2008, countries that showed a moderate decline of GDP and a significant increase in youth unemployment were Brazil, Chile and Nicaragua. Mexico, in the meanwhile, posted a sharp drop in the real GDP in 2009 with significant impact on youth unemployment. In terms of intensity in the increase in unemployment, the countries most affected are Chile (8.5 percentage points), Colombia (7.5 pp), Peru (5.2 pp) and Mexico (5.1 p.p.). On the other hand, some of these countries are also the ones showing further decline in youth unemployment, with Chile (-4.6 percentage points) and Mexico (-2.2 p.p.). A recent study concludes that a person exposed to a recession between ages 18-25 years is more likely to believe that success in life is achieved by being more random (lucky) than through hard work (Giuliano and Spilimbergo, 2009).

In 2009, about 82,100 young people of ages 15 to 19 years, only found employment as casual employees. Of these, 51 were located in the informal sector enterprises and 25 jobs were not protected from formal enterprises. The difference corresponds mostly to young women with informal jobs in homes, mainly related to domestic work. Sex differences within the youth population are marked. In the case of young women aged 15-19 years.

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Informal employment in informal sector enterprises has increased significantly from 39.2 percent in 2007 to 47 percent in 2009. This means that although there is an increase in the level of employment, the quality thereof has suffered. For men, informal employment increased by a 4 points percentage in the informal sector, an increase well below that of the women.

Viollaz (2014) found that the employment status of young people in LA had deteriorated over time until an improvement seen in the late 2000s. Although youth unemployment and informality rates are still very high, young people are entering into a typical employment cycle in which they are surpassing the results obtained by the adults of earlier generations.

Mexico

De Oliveira (2006) studied the situation of labor precariousness of the young salaried population in Mexico at the beginning of the 21st century. In her study, she took into account socio-spatial, labor, family and individual aspects, and found that most young employees are introduced in the labor market in jobs that are characterized by being precarious in degrees ranging from moderate to very high. Only about a third of them do not indulge in precarious activities or are involved in less precarious activities. Most young workers lack local labor contracts and benefits; their occupations are unrelated to their studies, and they work excessive hours at for very low incomes. The oldest young workers, 25 to 29 years old, have a workplace, labor contracts, perform activities related to their studies, work part-time most of the days and earn higher hourly wages. They come from families with greater financial resources, having a career or graduate studies or in occupations as officials, managers, professionals and technicians.

Canovas and Amador (2007) analyzed the various stages of: leaving school, first job, leaving the parental home, first union and first - born child. Young Mexicans do not finish their studies before starting work; instead, their first transition entails entering the job market. Likewise, although the majority leaves the parental home to marry or to live with someone, some still live with their parents even though they are married and have children. The time it takes for young people to make the transition to adulthood, when living in a restrictive environment, accelerates the occurrence of these five events. Conversely, communication with one's parents and a better financial situation delay their occurrence.

Abril-Valdez et al (2008) analyzed the scholar drop out, and their results indicated that 86% of the surveyed students abandoned high school between the first and the third semester. Their grade average during the last semester studied was 7.49. The main reasons of the desertion of these students were: economic factors, failure in some subjects, and the lack of interest in their studies. Of the total participants in the study, 93% were not satisfied with the academic level they had reached.

Saravi (2009) provided in his book a detailed analysis of the family and residential transitions, school and entering the labor market, the crisis of integration institutions, stigma and urban segregation, the risk factors that threaten vulnerable young people, as well as the perceptions and experiences of falling into exclusion. An awareness of vulnerable transitions regarding the problems and dilemmas is prevalent among the youth in underprivileged areas of Mexico, a paradigmatic example of which can be found in other large urban centers in Latin America.

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Botello-Triana (2012) stated that for the period 2000-2010, unemployed youth numbered approximately 970,000 people, 59.4% of who suffered from total unemployment. During the period 2000-2008 the relative growth of young migrant population, in this case 15 to 29 years, reduced from 32% in 2000 to 46% in 2008. On an average in the period 2000-2010, the population NEET amounted to 1.2 million people, of which 46% were male and 54% female; the highest annual increase was observed in 2005, increasing by 28.5% overall; 22.5% for men and 33.8% for women.

Vargas-Valle and Cruz-Piñeiro (2014) found that the odds of searching for employment were considerably higher among unprotected workers than among those with social protection. Non-working males registered higher odds of searching for employment than unprotected workers, while non-working males exhibited similar odds of job search than those female workers without social protection. The search for employment of young males was higher in the southern regions, which are characterized by a low supply of jobs with social protection. Their results support the idea of a high level of job search among young workers in low-quality jobs.

Ramirez-Baca (2014), who identified the existence of the phenomenon of informal dualism in Mexico, acknowledged the presence of two informal groups in the segmented youth labor market and concluded that informality is heterogeneous.

Raja and Zsekely (2015) made a simultaneous analysis of the influence of individual-family, community, and macro factors, on the upper secondary education dropout numbers in Mexico.

Their results about the labor market were that the consequences of dropping out are the inability to pursue higher education, which has the highest economic returns, to reduced opportunities for securing employment, access to lower wages, and higher levels of informality. Drop out, in the long run, includes having a head of household being unemployed and a low household income. Yaschine (2015) concluded that education is the factor that most affects the status of young people in the labor market, but those factors related to their social origin have, on the whole, an effect of similar magnitude. Additionally, differences in gender and migration status that highlight the importance of the characteristics of the context and labor markets were observed.

Bermudez-Lobera, J (2014) states that people between 15 to 29 years old who are Not in Employment, Education or Training (NEET), are not a homogeneous group but have different characteristics as life trajectories. Also, NEETs are not just the result of economical exclusion but the product of how society assigned gender roles.

Garcia et al (2015) identified four issues in NEET people: a) perception of themselves, b) through your path of life; c) identity references; and d) life goals. The results of the comparison revealed fairly homogenous cultural life goals and difficulties into work or school, which is explained by a common construction process and the search for social insertion. Differences show different perceptions on the current situation and the apparent initial construction of this phenomenon.

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Migrants to USA

Cornelius et al (2009), in their book which is a follow-up to Mayan Journeys, drew on responses to more than 1,000 surveys and some 500 hours of in-depth interviews in both the Yucatán and the US. The authors document the economic coping strategies of migrants and their families, how migrant workers navigate the US job market, and how health, education, and community participation are being shaped by the ongoing economic crisis. A groundbreaking chapter explores how a "youth culture of migration" develops in a migrant sending community.

Fusell (2004) opines that there are three distinct sources of Mexico-U.S. migration flow: the oldest stream from rural communities in central western Mexico, an incipient stream from interior urban areas, and a small but steady stream from Tijuana, a northern border city. Using the Mexican Migration Project data with an expanded geographic coverage, I identified these streams and examined how the differences in the origin community in terms of family-based migration-related social capital, internal migration experience, and labor force participation shapes the likelihood that men in the community initiate and continue migratory trips. I found four patterns of Mexican migration that make up the flow from central Mexico to northern Mexico and the U.S.: (1) the well-established flow of mostly undocumented low-skill agricultural labor migrants originating in the rural areas of central western Mexico and moving directly to the U.S.; (2) a newer stream of mostly undocumented U.S.-bound migrants from urban interior communities with a greater range of human capital; (3) internal migrants who move to Tijuana as a final destination, and (4) career migrants who make Tijuana a home base for making repeated, mostly undocumented, trips to the U.S.

Marquez (2007) analyzed a remittance–based development model. He reviewed: the export of cheap labor; the role of labor migration in US productive reconstruction, and the function assigned to remittances in the Mexican economy. He concluded that development based upon remittances intensifies the dependence on them, yet is not linked to mechanisms that promote local, regional or national development. Alarcon et al (2009) said that Mexicans constitute the largest immigrant group in the United States, accounting for nearly a third of all immigrants. In volume, they are followed far behind by those from China, Philippines and India (Alarcon, 2007). In 2007, there were 11.7 million people living in the United States who were born in Mexico, 62% of these people live in homes of families with married couples and 47% live in homes that are owner-occupied. These data suggest that the Mexican immigrant population in the United States has a large component of families settled there. Hernandez et al (2015) states that nowadays, it is estimated that over 11 million people born in Mexico are residing in the USA, of which 90% are concentrated in the states of California, Texas, Illinois and Arizona. The reasons for this immigration are: the persistent demand for Mexican labor in USA's agricultural, industrial and service sectors; the wage differential between the two economies; the intense pace of population growth in the working age population; insufficient dynamics of the Mexican economy to absorb surplus labor force, and the tradition of migration to the USA. As for receiving remittances, Mexico has the third place in the world behind China and India. Castañeda-Camey (2014) states that there are two imaginariums of young people with regard to employment: one is made up of the economic and educational expectations and, the second is made up of desires, illusions and expectations from the affective and emotional outlooks, such as family reunification and the consolidation of a couple's life.

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Morales (2015) briefly presents the participation of Mexican women in the migration process as labor migrants who are part of a new migratory pattern different from the traditional family reunification, identified in the migration of Mexicans to the United States. But the expectations of the young living in the USA are difficult as it was for their parents. As Abregoa and Gonzalez (2010) stated in their study, undocumented youth are growing up with legal access to public education through high school but facing legal restrictions and economic barriers to higher education and the workforce. Every year, about 65,000 undocumented students graduate from high school nationwide. Like other children of immigrants, they plan to remain in the United States, but these young men and women have few means out of poverty, and are a vulnerable population at risk for poverty and hardship. They concluded that, if given opportunities to pursue higher education and work legally in this country, these bilingual, bicultural students would benefit the U.S. taxpayers and the economy overall.

Data and ecomometric results

In year 1930, there were 2.3 million people speaking 85 different native languages. They represent 16.6% of the total population; by 2010 they were 6.6 million and only 6.5% of the total population. In 2010, there were four states in the south of Mexico with 15% or more of their total population that speaks a native language, Oaxaca with 30%, and Chiapas, Yucatan and Quintana Roo with 15%.

Year	Total population	People speaking a native language (millons)	%
1930	14 028 575	2.3	16
1950	21 821 032	2.4	11.2
1970	40 057 728	3.1	7.8
1990	70 562 202	5.3	7.5
2000	84 794 454	6.3	7.1
2005	90 266 425	6	6.6
2010	101 808 216	6.6	6.5

Table 1 Population five years old or more
Source: INEGI. Censo, 1930, 1950, 1970, 1990, 2000, II Conteo de Población y Vivienda 2005, and 2010

First, the occupied youth (14-24 years old) population is divided in two groups: one that speaks a native language and another which does not. The variables used in this research were: income defined as the percentage of youth that earn between 1.5 and 2 minimum salaries, enough to leave extreme poverty; the mean was 17.8% for indigenous youth and 25.07% for non-indigenous youth. High school is the percentage of youth that finished secondary education or half high school in the Anglo system. Of these, 19.85% were indigenous youth and 31.28% non-indigenous. The percentage of youth that work in industry, was 24.9% for indigenous and 40.7% for non-indigenous. Sewer, is a social condition variable measured by people who have a sewer in their house, comprised 56.8% to indigenous and 88.6% for nonindigenous. Another social variable was insured, people who had social security in their jobs; of these 44.5% for indigenous and 53.7% for non-indigenous. See tables 2 and 3 (INEGI, Census 2010).

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			Indigenous		
STATE	SEWER	INSURED	INDWORKER	INCOME	HIGHSCHOOL
Aguascalientes	97.7	63	24.38	16.25	26.8
Baja California	52.2	45.7	30.81	26.65	15.4
Baja California Sur	68.1	54.1	21.52	26.75	11.5
Campeche	47.6	62.6	26.13	8.04	27.1
Coahuila	95.6	64.7	36.43	22.49	39
Colima	96.4	43.5	12.92	19.77	19.2
Chiapas	55.2	43.8	8.73	2.12	13.8
Chihuahua	29.6	44.3	36.41	19.18	7.5
Distrito Federal	97.6	27.1	19.81	22.53	20.7
Durango	32.2	50.1	23.91	12.81	22.4
Guanajuato	74.1	47	33.52	20.13	18.9
Guerrero	38.3	38.7	24.49	6.37	12.1
Hidalgo	57.1	55.8	18.7	7.37	18.8
Jalisco	81.6	38	29.44	26.72	19.7
México	77.4	35.3	34.15	22.93	22.1
Michoacán	45	34.6	44.34	13.67	12.9
Morelos	78.8	37.4	23.13	26.37	13.7
Nayarit	46.2	56.8	21.16	11.99	17.8
Nuevo León	98	52.1	23.25	35.56	28.3
Oaxaca	52.5	39.2	18.62	6.01	18.1
Puebla	66.5	36.1	28.07	11.76	15.3
Querétaro	52.1	50.6	51.2	19.9	17
Quintana Roo	79.8	59.3	24.35	15.74	33.2
San Luis Potosí	38.2	52.8	16.5	8.13	21.4
Sinaloa	67.7	60.1	3.43	27.71	19.3
Sonora	36.7	54.4	22.09	27.22	25.6
Tabasco	91.6	47.1	14.68	8.82	50.6
Tamaulipas	91.9	64.3	29.88	29.22	49.4
Tlaxcala	82.2	43.9	55.72	21.15	16.9
Veracruz	40.7	45.2	13.75	5.96	20.7
Yucatán	52.8	60.2	38.48	12.59	18.9
Zacatecas	75	33.9	25.45	19.27	15.1

Table 2 Percentage of total youth employed population
Source: INEGI.Censo2010

			Non-indigenous		
STATE	SEWER	INSURED	INDWORKER	INCOME	HIGHSCHOOL
Aguascalientes	97.8	69.1	46.2	30.02	31.9
Baja California	90.3	67.1	44.3	21.74	43.3
Baja California Sur	90.9	67.6	26.77	20.44	47.6
Campeche	82.2	63	24.12	12.3	35.4
Coahuila	94.7	71.3	51.98	28.36	35.2
Colima	98.4	71.8	24.85	22.14	34.7
Chiapas	79.4	44.4	15.14	6.38	24.6
Chihuahua	90.3	69.9	51.88	32.39	36
Distrito Federal	98.9	50.8	24.3	21.08	55
Durango	86.8	57.9	41.27	26.52	31.3
Guanajuato	89.6	57.7	44.08	22.02	26.8
Guerrero	73.2	40.6	25.46	13.96	29.8
Hidalgo	84.1	51.6	36.57	15.95	31.6
Jalisco	97.3	53.4	39.44	21.62	32.2
México	91.9	45.2	35.92	23.26	41.5
Michoacán	86.7	43.3	31.02	17.65	23.5
Morelos	93.9	50.5	31.99	21.68	35.5
Nayarit	93.6	64	22.17	20.05	34.9
Nuevo León	96.8	72.4	41.77	24.51	36.3
Oaxaca	69.4	44	22.29	10.02	28.6
Puebla	84.8	35.7	36.81	17.11	27.2
Querétaro	89.7	63.4	42.9	26.32	32
Quintana Roo	94.1	62.4	20.66	16.63	45.3
San Luis Potosí	78.8	60.5	30.92	17.4	32.4
Sinaloa	89.7	63.1	21.69	23.13	40.5
Sonora	87.4	67.1	36.71	26.12	43
Tabasco	94.4	57.7	19.43	11.52	44.3
Tamaulipas	87	68.6	41.41	29.21	42.5
Tlaxcala	93.5	51.5	50.38	19.55	33.5
Veracruz	81.5	46.5	21.08	12.22	34.3
Yucatán	75.3	61.1	36.43	16.4	34.3
Zacatecas	88.1	54.6	35.2	20.11	24.2

Table 3 Percentage of total youth employed population
Source: INEGI.Censo2010

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On average, in Mexico, in year 2010, 21.12% indigenous young workers had completed secondary education; for non-indigenous youth 30.40% have completed secondary education. With respect to income, 17.54% of indigenous youth receive about two minimum wages as monthly salary, while for non-indigenous people this percentage is higher (20.24%). This wage is what enables them to be above the extreme poverty line. About people that is working in the industrial sector, 26.11% of young indigenous were working in the industries. While 33.60% of non-indigenous young people were employed in industry, the benefit of having social security, which involves medical and unemployment insured and a retirement, the 73.44% of indigenous young workers do not have him and a little more than a half of non-indigenous youth, 58.14% had no social security. This data indicates that indigenous youth employed with a salary or wage in 2010 were at a disadvantage, because a smaller percentage of them had finished high school, close to two minimum wage salaries, a smaller percentage worked in industry and higher percentage of them have not have social security as compared to non-indigenous youth.

Dependent Variable: SEWER
Method: Least Squares

Sample: 1 64
Included observations: 64
White heteroskedasticity-consistent standard errors & covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	64.85331	9.730262	6.665114	0
HIGHSCHOOL	1.415401	0.308612	4.586342	0
INSURED	-0.619759	0.262851	-2.357834	0.0217
B1*INSURED	0.85234	0.207741	4.102895	0.0001
B1*HIGHSCHOOL	-1.126247	0.360824	-3.121322	0.0028

R-squared	0.537588	Mean dependent var	76.98281
Adjusted R-squared	0.506238	S.D. dependent var	19.94346
S.E. of regression	14.01391	Akaike info criterion	8.192882
Sum squared resid	11586.99	Schwarz criterion	8.361545
Log likelihood	-257.1722	Hannan-Quinn criter.	8.259327
F-statistic	17.14795	Durbin-Watson stat	2.612067
Prob(F-statistic)	0		

Table 4 Regression
Source: Own estimation

$$SEWER = 64.853 + 1.415 HIGSCHOL - 0.619 INSURED + 0.852 B1 * INSUREED\ 1.126 B1 * HIGHSCHOOL$$
$$t - \text{statistic}(6.66) \quad (4.58) \quad (-2.35) \quad (4.10) \quad (3.12)$$
$$R^2 = .537 \quad \sigma = 14.0139 \quad F - statitic = 17.147 \quad Jarque - Bera(prob) = 0.856 \quad (1)$$

Youth indigenous

$$SEWER = 64.853 + 1.415\ HIGHSCHOOL - 0.619\ INSURED \quad (2)$$

Youth nonindigenous

$$SEWER = 64.853 + 0.295\ HIGHSCHOOL + 0.233\ INSURED \quad (3)$$

Only 56.8% of indigenous youth with employment in Mexico, have drainage in their homes, whereas 88.8% of nonindigenous had drainage in their homes. This is an indicator of the prevailing social and health conditions, summarizing the degree of welfare and the social status of youth. In six states of Mexico, of the total indigenous young working people.

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Only between 30 and 40% of them have drainage in their homes. These are Chihuahua, Durango, San Luis Potosi, Sonora and Veracruz. In addition to non-indigenous youth, this indicator is much better, because the states of Yucatan and Chihuahua have a lower percentage of young people living in homes with drainage, and exceeds70%.

When performing the regression without dummy variables, we get the expected logical result of a positive relationship between the dependent variable and the two explanatory variables. However, by introducing a dummy variable of the differences of indigenous and non-indigenous, we obtain "equations (1)-(3)" that indicate that indigenous youth have a high positive correlation between high school and the percentage of those with drainage in their homes. that is, This indicates thatwhen there is an increase of 10% indigenous youth who complete secondary and work, it is expected that 14% more of them have drainage in their homes, hence education has a high return on the quality of life of indigenous youth in Mexico. On the other hand, to have a job that has social security has a negative relationship with the housing conditions.

For non-indigenous youth, the relationship of housing conditions and the percentage of those who complete secondary education is positive, but only a 3% increase in those with drainage in the house when there is a 10% increase of young people who complete secondary education. Additionally, there is a positive relationship for those who get jobs with social security.

In order to improve social conditions of young workers in Mexico, it is essential for them to finish high school before joining the labor market. This will have a greater effect if they are indigenous.

The Jarque-Bera statistic performed in the residuals, did not reject the hypothesis of normal distribution of the residuals (Lo et al., 2014).

Collinearity tests					
Correlation matrix					
VARIABLE	HIGH SCHOOL	INSURED			
HIGH SCHOOL	1	0.581811			
INSURED	0.581811	1			
Coefficient Variance Decomposition					
Sample: 1 64					
Included observations: 64					
Eigenvalues	94.75217	0.243158	0.012703	0.00752	0.000126
Condition	1.33E-06	0.000517	0.009889	0.0167	1
Variance Decomposition Proportions					
	Associated Eigenvalue				
Variable	1	2	3	4	5
C	**0.999999**	1.11E-06	3.30E-09	1.76E-08	1.42E-10
HIGH SCHOOL	**0.011378**	0.922635	0.064677	0.00113	0.000184
INSURED	**0.651164**	0.286055	0.007658	0.05444	0.000685
B1*INSURED	**0.268902**	0.604594	0.076576	0.0489	0.001024
Eigenvectors					
	Associated Eigenvalue				
Variable	1	2	3	4	5
C	0.999608	0.020754	0.004957	0.01488	-0.01036
HIGH SCHOOL	0.003382	-0.601152	0.696373	0.11941	-0.37338
INSURED	-0.02179	0.285096	-0.204085	0.70707	-0.61371
B1*INSURED	0.011067	-0.327575	-0.510062	-0.52966	-0.59319
B1*HIGHSCHOOL	-0.013237	0.670523	0.461764	-0.4528	-0.36328

Table 5 Colliniarity test
Source: Owm estimation

Variance Inflation Factors			
Sample: 1 64			
Included observations: 64			
	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
C	86.05302	23.50401	NA
HIGH SCHOOL	0.046349	11.73128	1.511725
INSURED	0.044332	35.47478	1.511725

Table 6 Variance inflation factor
Source: Owm estimation

We conducted a collinearity test with the Coefficient Variance Decomposition of an equation that provides information on the eigenvector decomposition of the coefficient covariance matrix. This decomposition is a useful tool to help diagnose potential collinearity problems amongst the regressors. The decomposition calculations follow those given in Belsley, Kuh and Welsch (BKW) 2004 (Section 3.2). Note that although BKW uses the singular-value decomposition as their method to decompose the variance-covariance matrix, since this matrix is a square positive semi-definite matrix, using the eigenvalue decomposition, it will yield the same results.

The top line of the table shows the eigenvalues, sorted from the largest to the smallest, with the condition numbers below. Note that the final condition number is always equal to 1. One of the five eigenvalues have condition numbers smaller than 0.001, without considering the constant, with the smallest condition number being: 0.000517, which would indicate a small amount of collinearity. The second section of the table displays the decomposition proportions. The proportions associated with the smallest condition number are located in the first column. One of these values is larger than 0.5, again without considering the constant. This indicates that there is a low level of collinearity between those four variables.

The variance inflation factor estimates how much the variance of a coefficient is "inflated" because of linear dependence with other predictors. Thus, a VIF of 1.8 tells us that the variance (the square of the standard error) of a particular coefficient is 80% larger than it would be if that predictor was completely uncorrelated with all the other predictors.

The centered VIF has a lower bound of 1 but no upper bound. Authors differ on how high the VIF has to be to constitute a problem. Alison (2012) said that we get concerned when a VIF is greater than 2.50, which corresponds to an R2 of .60 with the other variables.

Thus, we conclude that our model has the proper characteristics of a good cross-section econometric model, after performing the above tests.

We then regressed a model with income as a dependent variable with independent variables: highschool, insured, sewer and indworker with the following results:

$$\begin{aligned} &INCOME = 0.8329 HIGHSCHOOL + 0.2233\ INSURED - 0.4154 SEWER + 0.2459\ INDOWORKER \\ &t-statistic\ (3.304) \quad (4.521) \quad (-4.365) \quad (3.341) \\ &R^2 = 0.315 \quad \sigma = 6.317 \quad Jarque-Bera(prob) = 0.125 \end{aligned} \tag{4}$$

Equation youth employed in México

$$INCOME = 0.2233\ INSURED + 0.2459\ INDWORKER \tag{5}$$

Equation youth employed in four indigenous states

$$INCOME = .8329\ HIGHSCHOOL + 0.2233\ INSURED - 0.4154\ SEWER + 0.2459\ INDWORKER \tag{6}$$

In the results obtained in "equations (4)-(6)", the relationship of income to jobs with social security is positive for all young workers from Mexico.

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The same was the case having jobs in the industrial sector, i.e., a 10% increase in jobs with social security, with an increase of about 2% of young people who have access to two minimum wages and an increase of 2.5% when 10% of young people worked in the industrial sector; this happened for both, indigenous and non-indigenous. Thus, to have jobs with social security and being in the industrial sector increases for people with two minimum salaries.

An important difference was present in the states where there was a predominance of indigenous population: Oaxaca, Chiapas, Yucatan and Quintana Roo.The education variable in these states is important because they have greater elasticity, i.e., an increase of 10% of young employed people who have completed secondary schooling, increases 8% of young people who obtain wages equivalent to around two minimum wages. Similarly, in states where the young people are predominantly indigenous, if they get jobs with social security, they also have a positive relationship with income which means that a few more of them could get two minimum wages or a wage that brings them out of extreme poverty.

For predominantly indigenous states, the inverse relationship between the drainage in homes and poverty wages is important (two minimum salaries), because when you decrease the percentage of young people with housing drainage, it increases the number of them who earn two minimum wages. This is so despite adverse conditions in terms of housing, education and industrial jobs. It is, therefore, possible to have a greater number of young people out of extreme poverty, but it is very important to improve social and housing conditions in Mexico which alone would eliminate much of extreme poverty. Thus, not having drainage is not an impediment to better pay.

Results and concluding remarks

We measured the de Moran index. Values ranged from −1 (indicating perfect dispersion) to +1 (perfect correlation), for the variable income for young indigenous people and with a weight matrix of vicinity of ones that is an empirical estimate of the spatial scale of association. The result was 0.38, Moran index, and we had a positive spatial autocorrelation. Spatial features and their associated data values tend to be clustered together in space, the term correlation alludes to the notion of 'redundant information'. If x and y are perfectly correlated, then knowing x means exactly knowing y. In other words, the information content of y is perfectly duplicated in x; this degree of duplication decreases as the correlation coefficient moves toward 0, and so we had a weak spatial autocorrelation (Griffith, 2009). Thus, this result does not affect seriously our conclusions.

Indigenous youth have a high positive correlation between high school and the percentage of those with drainage in their homes. Thus, education has a high return on the quality of life of indigenous youth in Mexico. On the other hand, to have a job that has social security has a negative relationship with the housing conditions.

For non-indigenous youth, the relationship of housing conditions and the percentage of those who complete secondary education is positive. Additionally, there is a positive relationship for those who get jobs with social security.

We conclude that to improve social conditions of young workers in Mexico, it is essential that the majority of them finish high school before joining the labor market, and especially if they are indigenous, this will have a greater effect.

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Nevertheless, it is also essential to take bilingual education, in order to preserve indigenous languages in Mexico.

To have jobs with social security and in the industrial sector increases the number of people with two minimum salaries.

In states where there is a predominance of indigenous population, the education variable is important because an increase in the number of young employed people who completed secondary education, increases the number of young people who obtain wages above extreme poverty; the same applies for people having jobs with social security. For young indigenous workers, not having drainage is not an impediment to better pay.

More complete and updated information and statistics about indigenous people in Mexico would be required in order to implement social policies to improve their lives.

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The triple helix as a succesfull model for integrating multidisciplinary workgroups on innovation projects in the Technological University of Tula-Tepeji, Mexico

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Abstract

The triple helix as a succesful model for integrating workgroups on innovation projects in the Technological University of Tula-Tepeji, Mexico .Innovation is increasingly based on the triple helix model "University-Government-Industry". Since the Technological University concept was raised on the needs of create an academic entity focused on the solution of the Industrial sector, its organic structure and functioning modulate the interaction between the Government and insdustrial sector.This article analyses de methodological approach for developing an innovation project in the biomedical sector by using a multidisciplinary and inter institutional perspective. A medical diagnosis dispositive for determining the health status in three specific diseases, at short time, reliable results and economically feasible, was developed. The project was developed in two years and comprised a qualitative and quantitative analysis; a multidisciplinary inter institutional workgroup was structured; the two years´ activities were funded by the National Council for Science and Technology – Mexico by the Technologic Innovation Fund. Activities related to the design engineering, description of national consumer sectors, commercial scaling, marketing, logistics and financial analysis were developed. Students were involved in research activities. The group was integrated by researchers belonging to three different academic groups i.e., Environmental Systems and Engineering, Administrative Models, Accounting and Fiscal, and Poles of Economic Development. The three academic groups are in Academic Consolidation Level according to the Professor Development Program – Public Education Secretariat. The integration of multidisciplinary workgroups allows to its members incorporate new tools and methodologies for solving the industrial sector located in specific regions with specific demands. The National Program for Innovation offers an important niche for both, high specialization for the professors and the consolidation of groups for working with a whole perspective approach.The project was successfully accomplished and the academic groups were strengthened.

Triple helix; Innovation; Academic Workgroups; Technical Universities

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Introduction

The educational models around the world are undergoing modifications to the implementation of the competences approach. Such is the case of the National Higher Technological Education System in Mexico.

The Technological Education Subsystem (TES), represented by the Technological Universities represents an interesting option for educating both technitians and engineers in specific areas according to the needs in the geographical región where the institutions are located.

The Technical University of Tula-Tepeji (UTTT) is located in the State of Hidalgo, Mexico. The institution is Pioneer in Mexico, created in 1990.

After 25 years of its foundation the UTTT has around 4,200 students distribuited in three campi, offering grades in the follow academic programs: Industrial Maintainance, Production Processes, Environmental Engineering, Accounting and Finances, Bussiness Development, Nanotechnology, Mechatronics, Reneweable Energy, Protected and Sustainable Agriculture, and Information Technologies.

Academic Groups

As part of the academic activities in the Mexican public education system, the integration of Academic Groups (AG) is vital (Santos, 2010) not only for strenghthening the academic life at indoors level but for raising the individual and global capacities and, in this way, facing and solving specific problems at external level.

According to Tirso et al., (2006), the main activities of the GA's are related to:

- To drive the institutional development
- To respond to the need of high level training of human resources
- To ensure the compliance at a corporative level.
- To promote healthy academic environments and,
- To increase the prestige of the institution.

The Mexican Program for the Professional Development of Teachers (PRODEP, spanish acronym) identified different levels of development for de AG´s:

1. Academic group of new creation
2. Academic group in consolidation
3. Consolidated Academic Group

The National Council of Science and Technology (CONACYT, spanish acronym) declared to the AGs as an organizational model susceptible to receive economic support for developing basic and applied research (Calderón et al., 2013).

Funding Programs for developing academic activities

It was in 2009, when CONACYT presented the Program of Incentives for the Innovation (PEI, spanish acronym). It is an instrument through which CONACYT give financial resources intended to encourage business investment in innovations that could be translated into business opportunities.

The objectives of this program are:

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- To encourage investment in research, technology development and innovation
- To raise the competitiveness of enterprises.
- To increase the value added of national production.
- To promote the culture of innovation, and
- To encourage academia - industry interaction
- The Triple Helix Model (THM)

The university–industry–government relations can be considered as a triple helix of evolving networks of communication (Etzkowitz and Leydesdorff, 1997). This ‘‘triple helix’’ is more complex than the mutual interactions between the ‘‘double helices’’ on which it rests.

The triple helix model for innovation comprises universities and other knowledge-producing institutions; industry, including high-tech start-ups and multinational corporations; and government at various levels. While industry and government have traditionally been conceptualized as primary institutional spheres, what is new in the triple helix model is that the university is posited to be a leading sphere along with industry and government (Etzkowitz and Leydesdorff, 2000).

The partial overlap among university, industry and government differs from situations in which the state encompasses industry and the university, and also it depends on the product, service or innovation which is involved in the scenario.

Linking the academia with the private and government spheres

The linking of the academia with the two other components of the triple helix is fundamental for getting a succesful developing of capacities and enhancement in the resources use.

This step is at the beginning the first contact of the AG´s with the problematic scenarios, afterwards, the formalization of the federal funding framed into a specific program could be stablished.

Depending on the maturity of the AG(s), the intervention level or participation of the members is variable, Quintas et al., (2002) explains the phases in which an innovation project is involved:

1. Basic research
2. Applied research
3. Experimental development
4. Initial production, and
5. Diffusion

Is supposed that if a multidisciplinary group is integrated, the level of intervention coul go beyond the first stages.

Material and Methods

Description of the intervention environment

The State of Hidalgo is located in the Mexican central plateou, it has 2,858, 359inhabitants (INEGI, 2015) distribuited in 84 municipalities. The primary seconomic sector contribuites the 4% of the GDP, the secondary sector and tertiary sectors contribuite the 44% and 2% respectively (INEGI, 2015).

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This places Hidalgo in a very active and productive state whit important investments in the process ans services sectors, however the distribution of the richness is concentrated in 14 of the 84 municipalities, generating unequility and unbalanced economic developing poles.

In the state there are settled 7 industrial parks, most of them in the southern belt of the Hidalgo territory.

One of them is located in the municipality of Atitalaquia, where exist industrial activities of at least 14 antional and international enterprises; one of them is a medium size national company dedicated to the developing of biotechnologic products focused on the clinical and medical diagnosis.

The company was economically granted by the PEI-CONACYT program in 2014 and 2016. As part of the agreement the academic link was done with the UTTT.

Characteristics of the academic link

The Project was developed in two stages (2014 and 2015) both of them funded by the PEI-CONACYT national program.

The UTTT has a specialized department for developing projects linked to the industrial and entrepeneur sectors; this department link the industrial needs twith academic personnel focused not only in teaching but in researching, belonging to different academic programs; a plan of activities is developed and submitted to the enterprise, is reviewed and modified if is necessary and, the legal departartment of the university sign an agreement for supporting the activities and paying the corresponding fees to the acdemic participants.

After finished the activities, a technical report is written, authorized by de UTTT and the enterprise and submitted to the CONACYT for formaly closing the Project.

Workgroup characteristics

The academic UTTT workgroup was integrated for 4 members through the two stages, belonging to different academic groups e.g., Environmental Systems and Engineering, Administrative Models, Accounting and Fiscal and Poles of Economic Development, all of them are categorized as "in process of consolidation".

Development of the academic work

In order to organize the academic work, periodical meetings were done.

The activities were distribuited according to the academic profile of the workgoup members, the development was reviewed and any advance was given to the enterprise staff.

Some visits to the enterprise were executed in order to clarify or going in deep of an specific objetive planned, to receive more information or to express new ideas.

General content of the work plan

The project was focused on the development of strategies for the introduction of a new medical diagnostic equipment based on the analysis of DNA material by using the PCR method. The equipment results new in the diagnosis market, reliable, cheaper tha other, and gives results quickly; the engineering development was done by the researchers staff of the enterprise together to other mexican university.

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The activities developed by the UTTT work group were related to:

Stage 1 (2014):

- The description and analysis of the Mexican medical service
- The estimation of the critical values for the economic scaling of the prototype.
- The estimation of: production volumes, storage and distribution and,
- Preliminar estimation of total costs (considering the prototype characteristics and two scenarios of production)

Stage 2 (2015):

The activities were focused on the implementation of the previous stage, considering the inclusion of the suppliers and service providers.

In this stage the marketing strategy was developed and represented the central core of this phase.

The total cost was adjusted to the prototype modification.

The structure of the projects were done by using the CANVAS model (Ferreira-Herrera, 2016).

Results

Connection between the Technical University of Tula-Tepeji and the industrial sector

The Technological University of Tula-Tepeji through the industrial services department conducted and analysis of the needs in the industrial and services sectors, classifying which are related to the generation of basic research, knowledge transference or technology development.

As part of its regular activities, the department of professional services has facilitated the participation of the University as provider of academic and technology services, receiving fundings provenients from federal programs.

During the last three years the Technical University has collaborated in 26 projects following the triple helix model in which professors members of academic groups have participated, developing skills and giving solutions to the industrial and services sectors.

The UTTT occupies the second place as provider of services as academic and technology developer centre in the state.

Academic Groups interactions

The AGs reinforced the academic activities. During the regular meetings the exchanges of ideas allowed us to understand different perspectives and methodologies for getting the objectives.

The group had members with expertise in economic, administrative processes, marketing, logistics, finances and biotechnology, it had a remarkable effect on the proposed alternatives and final report.

It was possible to know and understand new concepts and methodologies in different fields of knowledge, as now the groups are strengthened and the professors show a higher adaptability for solving problems in a holistic way.

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The inclusion of students gave the opportunity for enriching the strategies to teach and learn, giving to them real cases to analyse and discuss; to apply the knowledge and to develop new sways for solving the problem.

As part of the evaluation systems by the PRODEP-SEP, the inclusion of technical reports and participation in multidisciplinary workgroups provides evidences for being considered, and eventually, could impact on the PRODEP level assignment to the AGs.

Project implementation

The project stages were concluded according to the plan. The final reports were delivered and approved.

According to the Technology Readiness Level methodology by the NASA (Mankins, 1995) the project is situated in Level 2 with important components of Level 3, it means that the next activities should be driven to the technology validation in proximal or real environments.

Recommendations

The public and private institutions focused on education and research, specially those belonging to the Tecnological Universities Subsystem, have an enormous opportunity niche for applying proposals of participation for solving industrial problems, since the academic personnel have the expertise in practical and real scenarios.

The students of the TES have the opportunity to develope a professional internship in the industry and it opens their insertion as colaborators in the projects which is permitted by the PEI projects.

One successful strategy for increasing the academic productivity and participation in projects is the integration and articulation of multidisciplinary workgroups; it implies that would have at least two AG that could be benefited in productivity and experience gained.

A new organizational structure should be articulated in order to facilitate the activities, promoting the insertionof professor in projects, reducing the bureaucracy and expediting the tramitology, considering the researching duties as part of a vibrant and necessary life of academic development.

Conclusion

The constant change in markets and integration into global scenarios, must mean the modification of models of intervention by universities.

The model of the triple helix is perfectly suited to the needs of industry and the philosophy of the Technological Universities , however it is still necessary to refine the mechanisms of participation, it might be given in an harmonious and productive environment, understanding that this activity resolves more of one priority item; on one hand the solution to immediate problems of the industrial sector and secondly, allows to get better training to students by integrating them to real scenarios, enrichment of teacher expertices and to reach new levels of prestige and academic recognition.

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Objectives, methodology

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What is your added value with respect to other techniques?

Clearly focus each of its features

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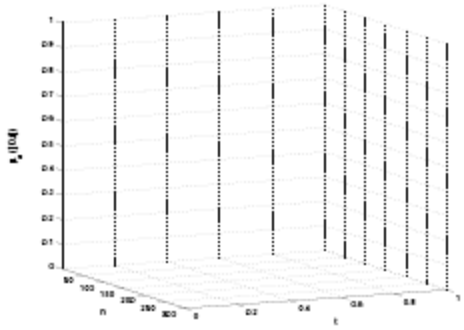

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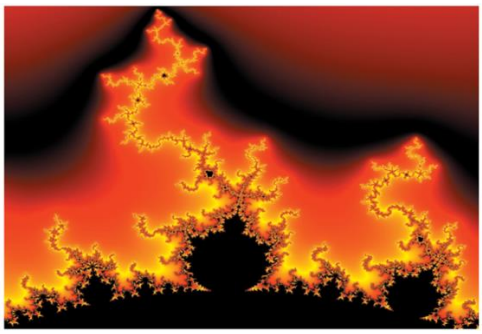

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For the use of equations, noted as follows:

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