Volume 5, Issue 12 –January – June-2014

ECORFAN

ISSN-Print: 2007-1582

Journal-Mexico

ISSN-On line: 2007-3682

ECORFAN®

ECORFAN®

Indexing

LATINDEX (Scientific Journals from Latin America, Spain and Portugal).

DIALNET (Dial net Foundation- University of la Rioja, Spain).

CLASE (Citations Latin American social sciences and humanities-UNAM)

Research Gate (USA).

DULCINEA (Spanish scientific journals).

HISPANA Ministry of Education and Culture, Spain).

SHERPA (University of Nottingham, England).

Sudoc. (France).

UNIVERSIA (University Library, Madrid).

Edu-doc (USA).

CSIC. (Consejo Superior de Investigaciones Científicas Españolas y Latinoamericanas).

ECORFAN

ECORFAN Journal-Mexico, Volume 5, Issue 12, January-June -2014, is a journal edited six- monthly by ECORFAN. Itzopan, Number 244, Block 2, Cologne. La Florida, Cd. Azteca. Ecatepec Municipality, Estateof Mexico. Zip code. 55120. WEB: www.ecorfan.org, journal@ecorfan.org. Editor in Chief: RAMOS-ESCAMILLA, María. Reservations for Exclusive Use Rights No: 04-2012-032214353400-203. ISSN-Impreso: 2007-1582- ISSN-On line: 2007-3682.Legality of Title and Content: 15048 both from the Qualifying Committee Publications and Illustrated Journals of the Interior Ministry.Responsible for the latest update of this number ECORFAN Computer Unit. ESCAMILLA-BOUCHÁN- Imelda, LUNA-SOTO, Vladimir. Itzopan, Number 244, Block 2. Cologne. La Florida, Cd. Azteca. Ecatepec Municipality, Estateof Mexico. Zip code. 55120, last updated December 31, 2013.

Editorial Board

Arbitration Committee

Centro de Investigacion en Computacion

IEB, MsC.
CVLS, MsC.

Benemerita Universidad Autonoma de Puebla

JDZF, PhD.

Posgrado-Escuela de Ingenieria y Mecanica Electrica –IPN

PJF, PhD.

CINVESTAV - Unidad Merida

AMHH, MsC.
CHSM, MsC.

Universidad de Londres

SRR, MsC.
MZG, MsC.

Universidad Autonoma de Hidalgo

ERJ, MsC.

Posgrado- Facultad de Economia –UNAM

RHQ, PhD.
MGE, MsC.
SGMCR, MsC.

Colegio Nacional de Economistas

OMC, MsC.

Universidad del Valle de Mexico

MLM, MsC.

Universidad Autonoma de Yucatan

LDBC, MsC.
NGCC, MsC.

Universidad Insurgentes

ARN, MsC.
RMC, MsC.

FES Aragon- UNAM

RMS, MsC.

Tecnologico de Estudios Superiores de Coacalco

RCF, MsC.

Universidad Tecnologica de Nezahualcoyolt

FPC, MsC.

Facultad de ciencias politicas y sociales- UNAM

RMC, MsC.

Universidad de Occidente

AAB, PhD.

Presentation

ECORFAN is a research journal that publishes articles in the areas of:

Economy**C**omputing**O**ptimization**R**isks**F**inance**A**dministration and**N**et Business.

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 12th presented in Section of Economy an article *Poverty incidence in the Province of Santa Elena: poverty opinion in Julio Moreno* by *Olives- Juan, Carcelén- Francisca, Benavides- Arturo and Alejandro- Carola* with adscription in the Universidad Estatal Península de Santa Elena,in Section of Computing an article *Benefits of the adoption of cloud computing in Mexico* by Rocha-Luis and Vazquez-Adrian with adscription in the Universidad Iberoamericana Ciudad de Mexico, in Section of Optimization an article *Comparison of valuation of European and Asian options with underlying average and stochastic interest rate by Monte Carlo simulation* by Ortiz- Ambrosio and Martínez- María, with adscription in the Escuela Superior de Economía-I.P.N.,in Section of Risks an article *Moral Judgment Competence Between Public and Private Workers. A Comparative Study in Mexico by Robles- Victor,* with adscription in the Universidad Autónoma Metropolitana, in Section of Finance an article *Financial Information for the Permanence of the agri-food Smes* by Cervantes- María, Alvarado- Sergio, Gallardo- Luis with adscription in the Universidad de Occidente, in Section of Administrationan an article *Strategic Orientation in students with high academic avarage in the University of San Francisco Xavier de Chuquisaca by* Ramirez-Ivone, Palma- María, with adscription in the Universidad Mayo Real y Pontifícia de San Francisco Xavier de Chuquisaca, in Section of Net Business an article *Marketing capability, entrepreneurship and organizational innovation in hotel sector* by Ruiz-José, with adscription in the Universidad Autónoma de Baja California.

Content

Article
ECONOMY

ECORFAN Journal-Mexico
December 2014 Vol.5 No.12 961-972

Poverty incidence in the Province of Santa Elena: poverty opinion in Julio Moreno

OLIVES- Juan, CARCELÉN- Francisca, BENAVIDES- Arturo, ALEJANDRO- Carola

Universidad Estatal Península de Santa Elena, La Libertad, Ecuador.

Received November 21, 2012; Accepted March 22, 2013

This paper presents a comparative analysis of the development variables involving poverty reduction, with the statistical information is to identify relevant aspects of spatial inequality within the province of Santa Elena for the different trends and conditions set poverty experienced some peninsular parishes regarding the cantonal capitals and nearby parishes to these urban spaces.

Poverty, NBI, Ecuador, Humand Development

Citation: Olives J, Carcelén F, Benavides A, Alejandro C. Poverty incidence in the Province of Santa Elena: poverty opinion in Julio Moreno. ECORFAN Journal-Mexico 2014, 5-12: 961-972

---

† Researcher contributing first author.

Introduction

The process of change of the Ecuadorian State generates a favorable situation to understand the impact of social policies.It has been expanded the Access to databases, especially the public nature data with processed statistics of primaly sourcesand, also with access to data from different census and socioeconomic surveys, conducted periodically in the country. This process joins the priority to generate knowledge in the state policy.

Despite the National progress, significant gaps remain in the availability of local processed information (provincial, cantonal, parish), which is certainly a barrier in in the evaluation and diagnostication of improvements in the intitutional actuating and execution of policies in the territory.

One of the relevant aspects of this study is the ability to articulate the interdisciplinary capacities in the Organization and Development Community (Faculty of Social Sciences and Health) of the Universidad Estatal Península de Santa Elena, to review the variables that influence the development conditions of the Province of Santa Elena.

Considering the great efforts in the country to eradicate poverty, this paper reviews the behavior of this variable in Ecuador in recent decades, with the information from the National Census of Population and Housing of 1990.

At the same time, is set a comparative analysis of the behavior of this variable with the data from the Province of Santa Elena, making a review of intercensal level periods and series of time from the last years, relating these behaviors with some relevant historical aspects on the mainland.

Statistics show that in Latin America there has been a significant reduction in poverty, although it remains one of the most unequal regions in the world. According to ECLAC the major inequalities are territorial, between groups and several dimensions of human development. Despite the progress in the HDI (ANNEX), these gaps may hide significant difficulties in terms of the achievement of human development. (ECLAC 2010).

Ecuador shows encouraging results and is presented as a country that reduced poverty and inequality (measured by the Gini index variation); however despite these advances, the Ecuadorian society is still far from achieving the ideal situation of justice and social equity.

The study also attempts to identify relevant aspects of territorial inequality inside the province of Santa Elena, expressed in different development and poverty experienced that are living some peninsular parishes respect to the county seats and parishes near these urban spaces.

This study starts with a review of general literature to conceptualize poverty and inequality. Poverty is analyzed in terms of incomes and unsatisfied basic needs, from data provided by the census of Polpulation and Housing since 1990. In the case of Santa Elena, both analysis and census data have been reinforced with the Land management plan of the Province 2012-2021, a document with an important economic, political and social diagnosis.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Historical and theoretical context

References related to poverty are diverse () and they have been adapted over time from diverse ideological currents, taking into account other aspects that affect the people and dynamic societies, becoming a multidimensional concept and a permanent construction.

Both the concept and the measurement of poverty have significantly evolved ();povertysituations in developing countries have raised demands of conceptualization, proposals that exceed the theoretical frameworks, leading to obtain ambiguous results. However, the concept still has a descriptive meaning of a social situation and for that reason it should be studied within the framework of a theory of income distribution and social inequalities in general (Altimir 1979).

Traditionally poverty has been regarded as the absence or lack of wellbeing expressed in a structural situation that prevents people satisfy their basic needs, by excluding them from the minimum threshold to expand their human potential. Poverty is the lack and denial of the prerequisites for human development (Larrea, 2006).

The emphasis on meeting basic needs (NB) is present in the methodological orientation of studies sponsored by international organizations such as the Economic Commission for Latin America and the Caribbean (ECLAC), which conceives poverty as the situation affecting households that fail, relatively stable, the necessary resources to satisfy the basic needs of its members.

As aresult these people or groups do not reach an adequate physical and psychological development and therefore do not have access to the diverse economic, social and cultural possibilities of modern society (ECLAC, 1997)

Likewise, the United Nations Development Programme (UNDP) notes that "poverty refers to the provisions of those in households to satisfy their basic needs" but also related to the "absence of certain individual and collective capabilities" (1997). It is incorporated other elements and is associated to "the deprivation of the most fundamentalopportunities and choices of human development: live a healthy, creative and long life to enjoy a decent standard of living, freedom, self-respect and others "(SIISE, 2001)

The World Bank definition also associated the poverty to the lack of resources needed to ensure the wellbeing material but highlighting issues such as the access to food, housing, land and other assets "Poverty entails a lack of resources which leads to hunger and physical deprivation "(University of Guayaquil, 2002).

Another approach, which emphasizes consumption asan appearance, is part of the methodology of the Integrated System of Social Indicators of Ecuador (SIISE), which considered as poor "those who belong to households whose per capita consumption in a given period is below to the poverty line, which is understood as the monetary equivalent of the cost of a basic basket of goods and services per person per period of time (usually fortnightly or monthly) "(SIISE, 2001).

The cited references are the multidimensional nature of poverty, the variety of factors that can determine it and extensive network of institutional actors who analyze it.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

This obviously gives rise to a variety of ways to measure it, between estimations based on income, consumption, unmet basic needs, high levels of inequality, low levels of education, low level of institutionalization, low productivity of the economy, among others.

In Latin America the predominant forms to estimate the incidence of poverty is based on the Unsatisfied Basic Needs (UBN) whose definition, described in studies of the Andean Community of Nations and SIISE, considers with poverty level to households which may have one of the following conditions (Mideros 2012).

- Housing with inadequate physical characteristics.
- Housing with inadequate services (offline to aqueducts or pipes, or without health connected to sewage or septic tank).
- Home with high economic dependence (with more than 3 members per person and the boss of the house had approved more than two years of primary education).
- Home where there are children whor are not attending school.
- Home in a state of critical overcrowding.

In Ecuador the estimatebased on household income, closely related to the consumption dimension has become more important in recent years. In this context, is defined as "poor", people who belong to households whose per capita income in a given period is below the poverty line, which is the monetary equivalent of the cost of a basic basket of goods and services (SIISE 2001).

Aplication of the case study

The study assumes as a valorative framework, that the poverty is a situation in which there is absolute or relative deprivation of the satisfaction of a set of central human needs, both psychological and political material (Hammarskjold Report, 1975; Ghai, 1977). However, given the availability of information and technical legal, instances that handle the policy management in our country, this first analysis of poverty from the two most common methods of measurement[1]: one based on the levels of income (Y) and the other based on the unsatisfied basic needs (NBI), identifying the main changes and their potential impact on diverse stages .

The information related to income poverty, was obtained from the National Information System, which is supplied with the official data[2]obtained from the survey of living conditions (poverty line and extreme poverty by consumption) and the income information of the survey of employment, unemployment and underemployment. For the analysis of poverty by NBI (households), the information generated was used from the results of the last 3 population and housing censuses in the country in 1990, 2001 and 2010, which was obtained the nacional, provincial and cantonalpoverty data.

[1] Called DIRECT METHOD (NBI-Based on census data) and INDIRECT METHOD (For Income-incidence mesuared relative to a defined poverty line)

[2] Information obtained by the National Institute of Statistics and Censuses, INEC.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

ECORFAN Journal-Mexico
December 2014 Vol.5 No.12 961-972

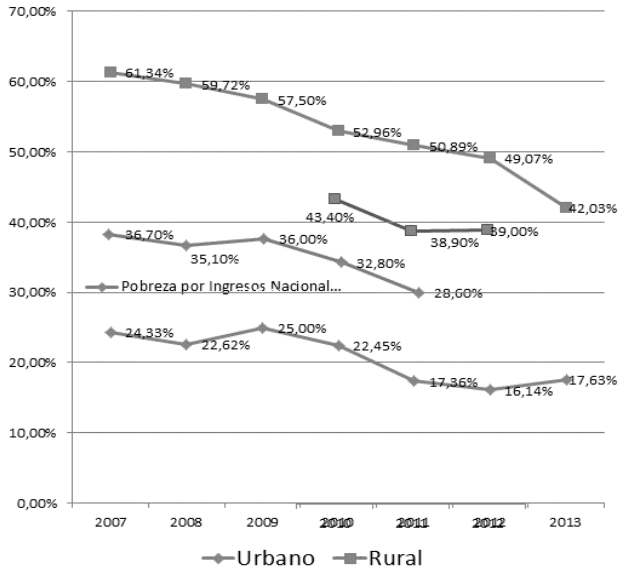
Evolution on the incidence of poverty by incomes

This first appearance with the premise that one of the most important variables when poverty is measured is incomes, which are considered a safe vehicle to access to essential goods and services.

Oficial poverty statistics calculated for the period of anlysis, show a significant decline in the country, a trend that could be influenced by the increase of the Gross Domestic Product (GDP) and the impact of social policies implemented in the country since 2007. During the same period we can see that the opposite tren in the real GDP and social investment in the country (estimated as a percentage of GDP), have increased significantly, highlighting areas as expenses in direct transfers and subsidies, the elimination of accesss barriers to education and health and improving the distribution and access to productive factors.

Although the trend is decreasing, disaggregating this variable by areas, it is interesting to observe that the decline in poverty by income in rural areas has declined much faster than in urban areas and that the decrease of the latter begins to decelérate since 2011 giving a change in this trend between 2012 and 2013. Despite the difference in reduction rates, it is estimated that in 2013 the incidence of poverty by incomes in rural areas is still higher than compared to urban (42.03% vs 17.63%), which shows a large territorial inequality gaps that have existed and still exist in our country.

Evolution in poverty by incomes



Graphic 1
Source: INEC 2013 Database
Drawn up by: Authors

Another necessary aspect to emphasize is that although poverty in a national and provincial level drops, are significant the distances between the two series. Added to this is that the decline in the Province of Santa Elena is getting slower, although in the same period the state investment in the province has had a significant rebound not only for the creation of the institutional infrastructure, but also the direct public investment in the agricultural sector (PIDASE project), education (schools of the millennium), infrastructure (storage terminal for liquefied gas, Spondylus Trail, San Vicente Dam). In the case of Santa Elena, this fact is very important since most of its territory is rural[3], and even more in the canton with the same name (provincial capital) where the majority of its population is in the rural area.

[3] The conditions of urban-rural inequality are present for example in the average years of schooling for people with 24 years and over, 7.7 in the rural area vs. 9.6 in the urban area.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Evolution of the incidence of poverty by Unsatisfied Basic Needs

The review of poverty by NBI is done with the premise that this indicator is a necessary to design public policies, especially at the local level, since the provision of basic services influence the access to other key aspects for the welfare of people, especially those related to health. For example, in our country, the prevalence of child malnutrition (36% concentrated in quintile 1) is more important than in the high quintiles, especially in the chronic type of malnutrition (SENPLADES, 2013).

Poverty figures for NBI also have been declining in Ecuador. In the last two intercensal periods (1990-2001 and 2001-2010), shows that in 1990, three out of four Ecuadorians are living in poverty by NBI (76%); this figure decreased slightly from 2001 (71%) and slightly faster in 2010 (56%).

However, disaggregating by areas, it is observed that this trend is similar only in the urban area from 61% of poor people by NBI in 1990 to 42% in 2010 (always below to the national average). In rural areas, the figures show a different reality; not only with a slower decline, but also remains high (96% in 1990 and 82% in 2010), higher levels than the country had over 20 years ago.

Checking with a further disaggregation, it is observed that poverty indicators by NBI in the cantons that form the Santa Elena Province (before Guayas Province) have been superior to the country data. Salinas in 2010 equals the national average and its decline curve is different from the provincial capital with 2010 data (79%) higher than Ecuador in 1990 (slightly less than the poverty rural data excepted by NBI)

It is noteworthy that in 1990 the cantons of the new province (La Libertad was still part of Salinas) had an average of about 100% of incidence of poverty by NBI (ANNEX).

In the case of Santa Elena Province, the factors that influence this high poverty rate by NBI is the geographic dispersion in the rural context and the rapid and uncontrolled growth of the population in the major population centers, especially La Libertad and the county seats of Salinas and Santa Elena, which would explain the high deficit in the coverage of basic services.

An additional lecture related to territorial inequality factors, shows that there are parishes where poverty has not changed by NBI, being the most extreme case Simón Bolívar[4] where poverty declined less than 1% by NBI (100% in 1990 and 99.68% in 2010). A close case is Chanduy where the decrease in the same period was less than 5%. In other words, although exist high levels, there was a more rapid decline in rural parishes near to the county seats (Ancon, José Luis Tamayo[5] and Anconcito) and slightly slower decline in parishes located in areas with agricultural and tourist influence (Manglaralto and Colonche) [6].

[4] Commonly named Julio Moreno, identified as one of the country's poorest areas.
[5] Better known as Muey; although it is identified as rural parish is equipped with a Self-Government Decentralization Parish, Jose Luis Tamayo form part of the conurbation made up of the county seats of Santa Elena, La Libertad and Salinas. It is estimated that a few years Anconcito and Ancon will be in a similar situation.
[6] The presence of beaches and services near to the Spondylus Routes and the greater availability of water for production are characteristics of this area.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Significant qualitative aspects of the Province of Santa Elena

The Santa Elena Peninsula is an area located in the central coastal area of Ecuador. It has a variety of climatic zones and soil types: coastal areas, mountain areas (rainforest drizzle) and flat areas with small elevations (dry forest), which determine the possibility of numerous types of productive activities especially fishing, agriculture, mining and tourism. However, their diversity makes it an important area of contrasts and characteristics that undoubtedly have an influence in their current level of development:

- In 2007, this micro-region gained a Province administrative policy category, when was separated from the Province of Guayas, being conformed administratively by three counties and 8 rural parishes (ANNEX MAP). This led to the creation of a significant number of provincial departments of public institutions, in addition the creation of the Autonomous Decentralized Provincial Government (GAD).

- The population of the province in 2010 was approximately 308,000 inhabitants (2.1% of the national population), a figure influenced by the migration of people from numerous places along the coast and mountains of Ecuador. By 2014 the population projection is over 350 thousand inhabitants while in 2020 would reach 400 thousand.

- According to the 2010 census, 5.9% to the population lived in another province, five years before; this percentage could be increased by the effects of tourism and commercial development, the opening of spaces in the public service (from the creation of a new province) and migration of Colombians to our country. Santa Elena is the province with the highest growth rate of population (3.00% in the period 2001 - 2010).

- Most of the 3000 km2 in the province is formed by rural areas; of which over the 90% are under the jurisdiction of the canton of St. Helena, which is one of the largest (in area) and lower population density, which contrast demographically with La Libertad (neighboring town) which is the smallest and the most densely populated urban country.

- The differences between urban and rural areas are more pronounced than the differences between cantons. Three of the existing rural parishes (Ancon, and José Luis Tamayo Anconcito), are almost integrated to the urban area formed by three county seats. In urban areas, basic services have good coverage but not in popular sectors and in rural areas where deficiencies are multiplied by the distance of sites of provision of basic social services.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

- The main weakness of the province is given by the lack of sources of water for human consumption and irrigation. The public drinking water is supplied by a system that takes water from the Duale Peripa reservoir through several interconnected dams, representing a high cost of driving and a permanent risk of disruption by external factors.

- In a rural community levels the set of systems that are fed from underground sources that throughout time, have been affected by the effects of deforestation in the upper watershed areas where they are located.

- Despite the difficulties with water resources, according to statistics from the INEC, Santa Elena is the second province with the highest water consumption (more than 38 m3, above the average where the national consumption is approximately 27 m3). Also is not available a treatment collection and reuse strategy of rainwater or wastewater.

There is a diversity of conditions, determined by characteristics related to natural resource endowment and road connectivity; towards the north (especially Manglaralto) is counted with a better road infrastructure (Spondylus road) and a large tourism development around the beach. In the intermediate mountain zone of Chongón-Colonche, Parishes and Simon Bolivar Colonche (Julio Moreno), prolonged droughts have affected the production and hence the employment conditions of the population. To this is added the deficiencies of t secondary access routes and basic and social services that influence the migration of young people to the cities, leaving many adults and seniors in communities.

Conclusions and recommendations

- Poverty has been declining in the recent years in our country, similar to Latin America; however, the current figures are still high, showing that this is one of the outstanding development tasks: getting millions of people to overcome this condition and therefore the inequality factors that contribute to it.

- In general there are great differences in the behavior of the reduction of poverty by area (urban and rural). This is more significant in rural areas where income poverty has a greater decrease by NBI whose changes are barely visible making that the existing conditions remain above the average of the country for more than two decades ago.

- But also there is decreasing trend of poverty indicators of the cantons that form the Province of Santa Elena (before Guayas Province). Disaggregating the figures it is shown that the differences between urban and rural areas (including one county) are greater than the mean differences between cantons.

- In the same direction the necessity of evaluating the impact of productive development programs (including agricultural, artisanal fishing and tourism) in the improving of income levels of the rural areas of the province, appears to be identifying aspects that can be replicated, strengthened or corrected, and especially be complemented by investment in satisfying their basic needs.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

The status of natural resources is a central issue for the Province, and from which they can look public policies focused on poverty reduction, since we have the access and the control. In this way, for example, water has the main source of supply outside the territory which involves high costs and risk of transfer, compromising the sustainability and development of this region.

References

Acosta, A. (2012). *EL retorno del Estado, primeros pasos post neoliberales, mas no capitalista.* Tendencias.

Altimir, O. (1979). *La dimensión de la pobreza en América Latina.*

Centro de Documentación sobre Desarrollo Humano. (2010). *La desigualdad enAmérica Latina y el Caribe*. Obtenido de http://centrodesarrollohumano.org/: Disponible en:http://www.centrodesarrollohumano.org/pmb/opac_css/doc_num.php?explnum_id=901

CEPAL, C. E. (2013). Panorama social de América Latina 2013. Obtenido de http://www.eclac.cl/: Disponible en: http://www.eclac.cl/publicaciones/xml/9/51769/PanoramaSocial2013.pdf

Falconí, F. (2014). *Al sur de las decisiones, enfrentando la crisis del siglo XXI.* Quito: El Conejo.

Fundación Santiago de Guayaquil. (2009). Plan de Desarrollo y Ordenamiento Territorial 2011-2016 de la provincia de Santa Elena. *Documento Borrador*. Santa Elena, Ecuador: Gobierno Provincial de Santa Elena.

Hammarskjòld, G. (1977). *Informe Hammarskjòld.*

INEC. (1990,2001,2010). *Censo de Población y vivienda* .

Instituto Geográfico Militar. (2013). Atlas Geográfico de la República del Ecuador. págs. 372

Larrea , C. (2006). *Pobreza, Dolarización y crísis en el Ecuador.* Quito: Abyala.

Medina, I., & Florido , A. (2005). *La Pobreza desde Los Pobres.* Librosred.

Mideros, A. (2012). Ecuador: Definición y medición multidimensional de la pobreza. *Review CEPAL*, 108.

Narayan, D. (2000). *La Voz de los pobres ¿hay alguien que nos escuche?* Madrid: Mundi Prensa.

PNUD. (2001). *http://www.pnud.org.ec/.* Obtenido de http://www.pnud.org.ec/Noticias2013/HDR2013%20Report%20Spanish.pdf

SENPLADES. (2011). *¡A (RE)Distribuir! Ecuador para todos.* Quito: Ediecuatorial C.A. SENPLADES. (2013). *Plan Nacional del Buen Vivir 2013-2017.* Quito.

SIISE. (2001). Incidencia de la pobreza de consumo. Obtenido de http://www.siise.gob.ec/siiseweb/PageWebs/POBREZA/ficpob_P13.htm

Universidad de Guayaquil; Facultad de Ciencias Económicas; United Nations Population Fund. (2002). *Poblacion, pobreza y desarrollo en el Ecuador*. Guayaquil.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Statistical Annex

América Latina (4 países): personas en situación de pobreza y de indigencia alrededor de 2005, de 2011 y 2012
(*En porcentajes*)

País	Alrededor de 2005			Alrededor de 2011			2012		
	Año	Pobreza	Indigencia	Año	Pobreza	Indigencia	Año	Pobreza	Indigencia
Perú	2003	52,5	21,4	2011	27,8	6,3	2012	25,8	6
Chile	2006	13,7	3,2	2011	11	3,1	–	–	--
Colombia	2005	45,2	13,9	2011	34,2	10,7	2012	32,9	10,4
Ecuador	2005	48,3	21,2	2011	35,3	13,8	2012	32,2	12,9

Source: Panorama Office in Latin America and the Caribbean 2014, ECLAC
Produced by: Authors

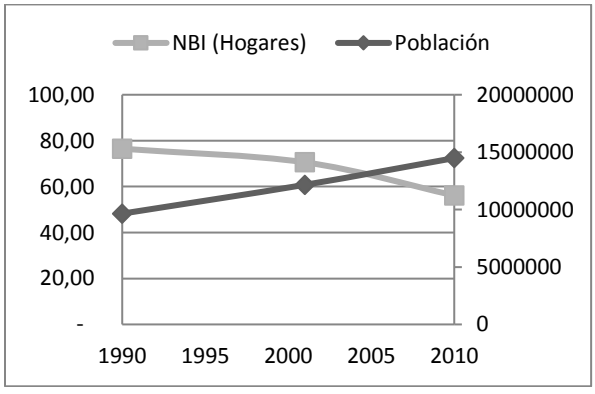
Variación de IDH por países

Posición Mundial IDH 2007	País	IDH 1990	IDH 2000	IDH 2007	Crecimiento 1990-2000 (%)	Crecimiento 2000-2007 (%)
78	Perú	0,708	0,771	0,806	8,9	4,5
80	Ecuador	0,744		0,806	n.a	n.a.
101	Paraguay	0,711	0,737	0,761	3,7	3,3
113	Bolivia	0,629	0,699	0,729	11,1	4,3

Source: Inequality in Latin America and the Caribbean 2010, ECLAC
Produced by: Authors

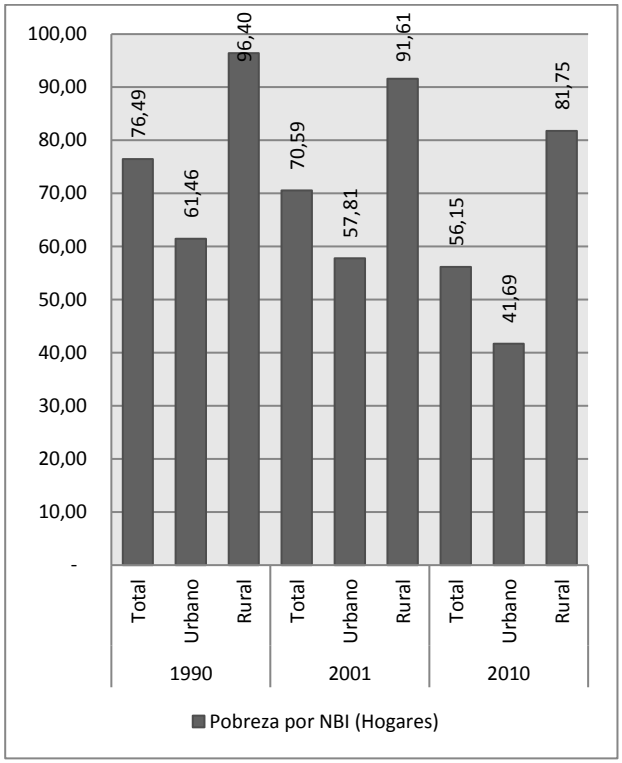
Poverty and population growth

Pobreza y crecimiento poblacional		
Periodo intercensal	Población	NBI (Hogares)
1990	9648189	76,49
2001	12156608	70,59
2010	14483499	56,15



Source: Population and Housing Census INEC 1990, 2001, 2010
Produced by: Authors

Poverty in Ecuador by NBI intercensal

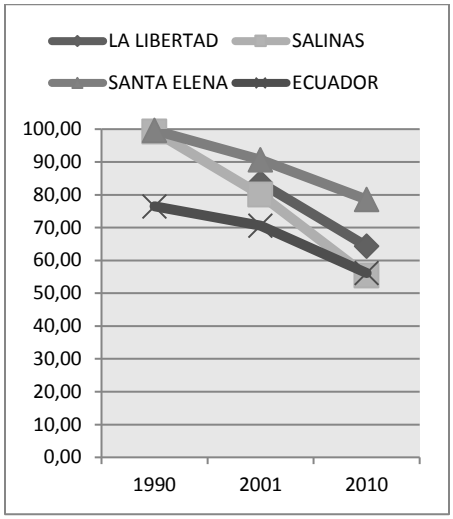


Pobreza por NBI Intercensal		
Año	Indicadores de pobreza	Pobreza por NBI (Hogares)
1990	Total	76,49
	Urbano	61,46
	Rural	96,4
2001	Total	70,59
	Urbano	57,81
	Rural	91,61
2010	Total	56,15
	Urbano	41,69
	Rural	81,75

Source: Population and Housing Census INEC 1990, 2001, 2010
Produced by: Authors

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

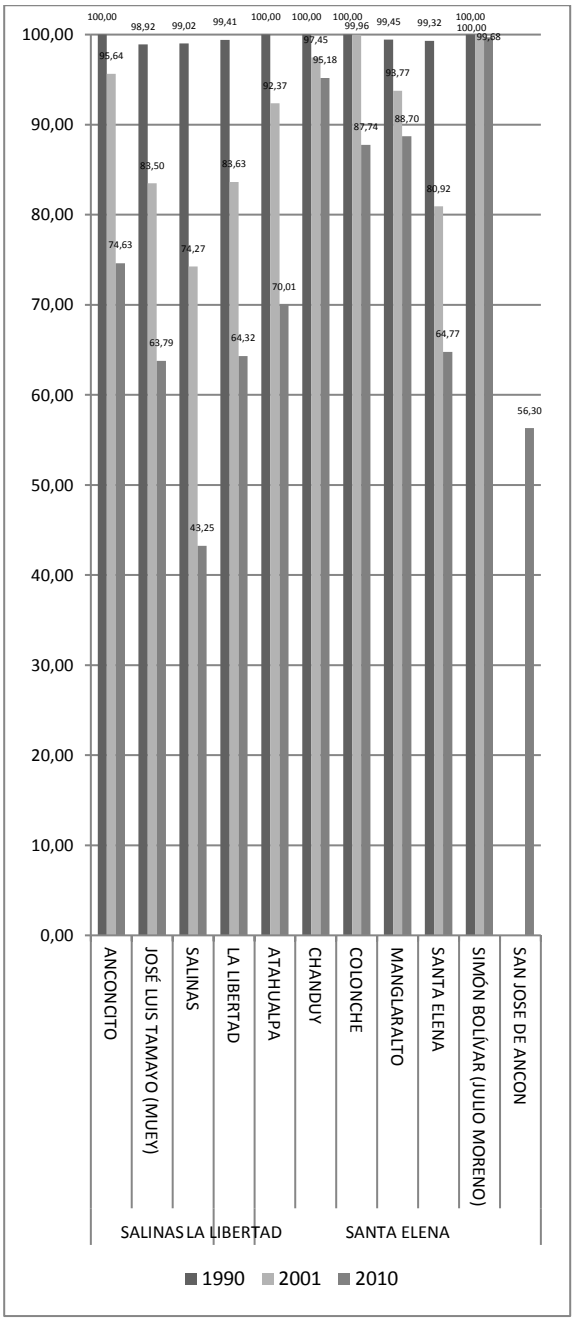
National Comparison - Santa Elena (Intercensal)



Pobreza por NBI Comparación Nacional - Santa Elena (intercensal)				
Pobreza por NBI (Hogares)	LA LIBERTAD	SALINAS	SANTA ELENA	ECUADOR
1990		99,3	99,63	76,49
2001	83,63	80,07	90,73	70,59
2010	64,32	55,4	78,56	56,15

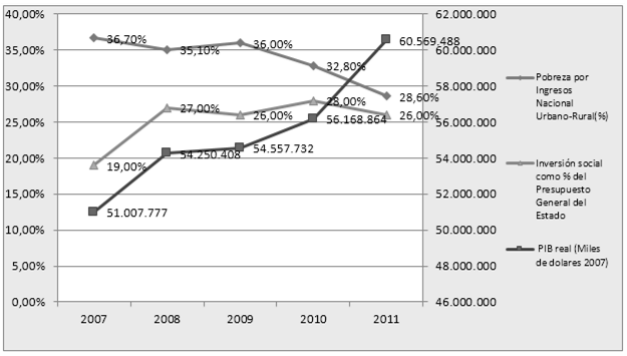
Source: Population and Housing Census INEC 1990, 2001, 2010
Produced by: Authors

Comparison of poverty by NBI parishes



ECORFAN Journal-Mexico
December 2014 Vol.5 No.12 961-972

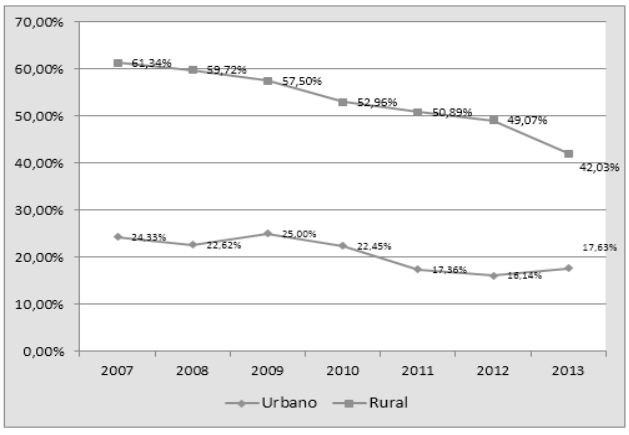
Evolution of the National Poverty by Income



Evolución de la Pobreza Nacional por Ingreso			
Años	Pobreza por Ingresos Nacional Urbano-Rural(%)	PIB real (Miles de dolares 2007)	Inversión social como % del Presupuesto General del Estado
2007	36.70%	51,007,777	19.00%
2008	35.10%	54,250,408	27.00%
2009	36.00%	54,557,732	26.00%
2010	32.80%	56,168,864	28.00%
2011	28.60%	60,569,488	26.00%
2012	27.30%		

Source: INEC Database 2013
Produced by: Authors

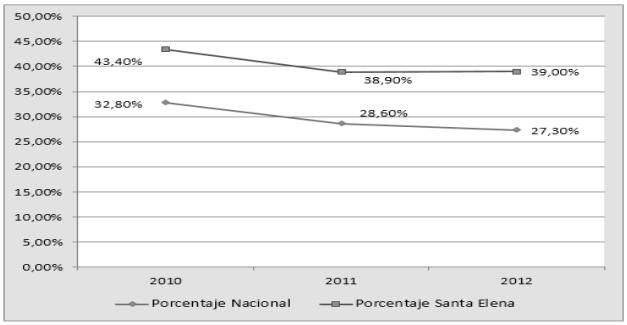
Evolution of the National Poverty by Income



Evolución de la Pobreza Nacional por Ingresos		
Periodo	Urbano	Rural
2007	24.33%	61.34%
2008	22.62%	59.72%
2009	25.00%	57.50%
2010	22.45%	52.96%
2011	17.36%	50.89%
2012	16.14%	49.07%
2013	17.63%	42.03%

Source: INEC Database 2013
Produced by: Authors

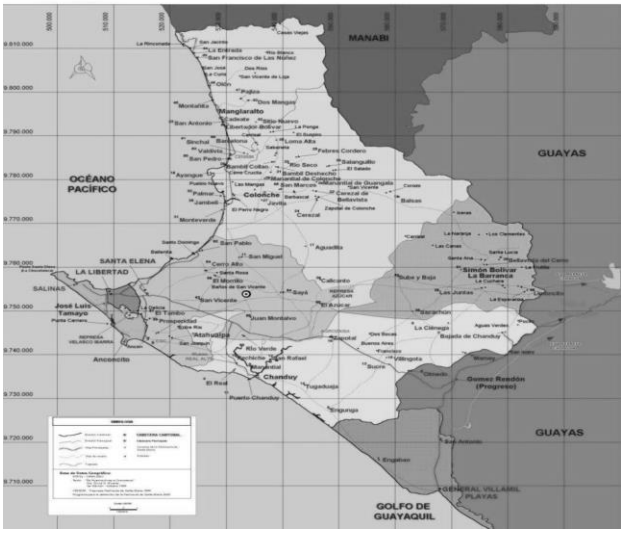
Evolution of the National Poverty by Income



Pobreza por ingresos		
Año	Porcentaje Nacional	Porcentaje Santa Elena
2010	32.80%	43.40%
2011	28.60%	38.90%
2012	27.30%	39.00%

Source: INEC Database 2013
Produced by: Authors

MAPA POLÍTICO DE LA PENÍNSULA DE SANTA ELENA



ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Article **ECORFAN Journal-Mexico**
COMPUTING December 2014 Vol.5 No.12 973-985

Benefits of adoption of Cloud Computing in Mexico

ROCHA- Luis*† & VAZQUEZ-Adrian

Universidad Iberoamericana Prolongación Paseo de la Reforma No. 880, Lomas de Santa Fe, 01219 Ciudad de México, Distrito Federal, México.

Received April 29, 2013; Accepted November 22, 2013

The objective of this paper is to show the benefits that can bring the implementation of cloud computing was the development sectors of the country , whether public and private , are entering a new evolution in computing era , in which installing the tools on your computer is no longer necessary , which seeks this new era of cloud computing is to exploit the information highway available to everyone on the Internet , with the correct use of the internet can have everything available , provide mobility and tools available at any time , there are many benefits that come from implementing cloud computing for both SMEs as well as the government sector in all aspects, from saving energy, infrastructure savings , reduced operating costs all these benefits can be reflected to open new jobs in small and medium enterprises which can support economic development. What this article is to open a panorama towards this new era of cloud computing and can be seen as an option to the use of a technology that forecasts agreements to bring enormous benefits for developing countries to implement this technology .

Evolution, Internet, Cloud Computing

Citation: Rocha L, Vazquez **A.** Benefits of adoption of Cloud Computing in Mexico. ECORFAN Journal-Mexico 2014, 5-12: 973-985

† Researcher contributing first author.

Introduction

Mexico is one of the emerging countries, OECD member which shows to our country as one of the most backward in the field of ICT according to a study by the INEG,until 2012 only 26% of the population has internet, this is caused by the low productivity that is generated in the country. Information technology can be an important development in Mexico and one of them is the cloud computing that can support a large extent to give impetus to the growth of enterprises, the creation of jobs.

Cloud computing is an opportunity that many countries are adopting and which has given excellent results helping economies to have savings in order to create job opportunities that can benefit the U.S. population. As an example U.S. with 50% of its services of IT in the cloud, Japan with 12% and Europe 29% have implemented this technology that will promote their development, there are other success stories such as Colombian with implementation of online assessment in its educational system[7]

Undoubtedly it is a good alternative to deploy it to Mexico and promote the development of the country since the technologies information have acquired a great economic importance to the country's growth. The potential of services of technology information in both large companies and SMEs is the highly demanded due to improving business productivity.

What is Cloud Computing?

Definition[8]

The cloud computing is defined as a way of obtaining computing services on demand, a crude example would be the water we use at home, which only is pay without the need to invest in pipe,that takes the water to home. It is able to minimize the time spent on lower-value activities and allow the staff working in areas of information technology, focus on strategic activities that have a real impact on the business processes of the organization

The use of this concept is spreading with considerable speed, resulting in an increase in the number of companies that provide services through this technology, as well as organizations that are seriously considering the adoption of cloud computing as an entirely viable alternative.

The cloud computing is a bit more complex than this simple principle and is described as follows

Services[9]

The cloud basically offers three services:

- Software as a Service (SaaS) Where the supplier provides applications and software through a subscription model parcel (email, business applications, Office, Stata, etc..) in exchange for a rent. In other words, instead of buying a full license, users can save millions and only rent what they need.

[7] IMCO. (2012). Computo en la nube detonador de competitividad. Pag 17 from http://imco.org.mx/wp-content/uploads/2012/6/computo_en_la_nube_detonador_de_competitividad_doc.pdf

[8] Francisco Carlos Martínez Godínez, B. V. G. G. Computo en la Nube Ventajas y Desventajas. 2014, from http://revista.seguridad.unam.mx/numero-08/c%C3%B3mputo-en-nube-ventajas-y-desventajas

[9] IMCO. (2012). Computo en la nube detonador de competitividad. Pag 7 from http://imco.org.mx/wp-content/uploads/2012/6/computo_en_la_nube_detonador_de_competitividad_doc.pdf

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

- Generally this service, unlike the others do not charge time.

SaaS is the best known in levels of cloud computing. It is a software distribution model that provides customers access to it, via network (usually the Internet). In this way they do not have to worry about the configuration, deployment and maintenance of applications because all these tasks become the responsibility of the vendor.They distributed applications through a Software model as a Service that can reach any company regardless of its size or geographic location.

This model is aimed to the final customers using the software to cover they organization's processes. The Software as a Service (SaaS) can be described as an application consumed over the Internet, usually through the browser, which payment is conditioned and where the logic application and data reside on the platform of the provider. Examples of SaaS are Salesforce, Zoho, and Google App.

- Platform as a Service (PaaS) to make use of internet technology platforms. A company that develops its own applications or get a license from a third, can rent a cloud technology platform that includes hardware, operating system, middleware, and communications to run them online, without being worried about buying and managing their own infrastructure . In this way the rental technology platform can expand or contract based on their demand where is charge usually by hour.

Cloud computing and its fast growth has required "include platforms for building and running custom applications, this concept is called PaaS (or Spanish Plataformas como servicio). The PaaS applications are also known as over demand Web-based or SaaS solutions. "

The provider, besides solving problems in the hardware infrastructure, also handles the software. The client who uses these solutions do not need to install, configure or maintain operating systems, databases and application servers because all of these are provided under this platform.

A platform as a service (PaaS) solves more problems when is compared to a solution that only provides an infrastructure as a service (IaaS), since it presents many limitations related to the runtime environment. These include the type of system, the programming language (in some cases they may use libraries) and the database manager

Companies like Amazon.com, eBay, Google, iTunes and YouTube are some of those using this model and make possible the access of new capabilities and new markets through the Web browser, the PaaS model provide faster and cost-benefit advantage for development and delivery application. "

- Infrastructure as a Service (IaaS), "Infrastructure as a Service is a provision model in which an organization placed 'outside' the equipment used to support operations, including storage of the information, hardware, servers and network components. The service provider. Sometimes IaaS is also referred to as Hardware as a Service or HaaS "

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

The most obvious advantage to use an IaaS, is to transfer to the supplier problems related to the administration of computers. Another attractive advantage is the cost reduction, as usually happens in the technologies associated with cloud computing, to pay only for what is consumed. Infrastructure as a Service also allows automatic and transparent scability to consumer, leaving the responsibility to service providers.

Other features include: providing Internet connectivity, services and policies based on the layout of a virtual desktop. Is the access under demand to servers, storage and network subsystems. For example, instead of storing all the information on your personal computer or on the server of the company, this space is rented to an IaaS provider, saving the cost of investment in the infrastructure. The income of this service is usually estimated by consumed time of computing power of servers, storage space and width.

Implementation models of the cloud [10]

There are many methods of implementation that are described:

Private Cloud. The cloud infrastructure is only used for an organization. It can be given by the company or by a third and can stay at their locations or outside of them.

Community Cloud. The cloud infrastructure is shared by several organizations and binds a specific community that has common preoccupations (eg, mission, security requirements, policy, and compliance requirements or conditions).

It can be given by the company or by a third and can stay at their locations or outside of them.

Public Cloud. The cloud infrastructure is available to general public and is owned by a company that sells cloud services.

Hybrid cloud. The cloud infrastructure is a composition of two or more clouds (private, community, or public) that remain unique entities but are united by standardized technology that allows the portability of data and applications.

Benefits[11]

There are several benefits that brings cloud implementation and several competitive opportunities for organizations that use them.Following there is a list of the main advantages in the use of cloud computing. Costs.

Is one of the most attractive advantage presented by cloud computing, leaving the responsibility of the infrastructure implementation to the provider, the client does not have to worry about buying computer equipment or trainning the staff for the setup and in some cases, the development of the software.

Competitiveness. By not having to buy expensive equipment, small businesses can access to the latest technology at prices within paying only for consumption. Thereby organizations of any type could compete on equal terms in areas of IT against companies of any size. Competitive advantage is not the one that has computing resources but is who uses them better.

[10] EYE OS. Defining the Cloud: Deployment Models. from http://blog.eyeos.org/es/2012/03/30/definiendo-la-nube-modelos-de-implementacion/

[11] Francisco Carlos Martínez Godínez, B. V. G. G. Computo en la Nube Ventajas y Desventajas. 2014, from http://revista.seguridad.unam.mx/numero-08/c%C3%B3mputo-en-nube-ventajas-y-desventajas

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Availability. The supplier must ensure that the service is always available to the client.

Abstraction of the technical part. The cloud computing allows the customer the ability to forget about the deployment, configuration and maintenance; transferring this responsibility to the service provider.

Access from any location. Using applications designed on cloud computing can be accessed from any computer equipment in the world if is connected to Internet.

Scalability. The client has no need to worry about updating the computer equipment on which it is running the use of the application and the upgrade of the operating system or the installation of security patches. It is the duty of the service provider to perform this kind of updates. In addition, they are transparent to the client, so the application must be available to the user wherever even when the update process at the supplier is in process. Updates and new features are installed almost immediately.

Concentrated efforts in business processes. As a result of the mentioned advantages, the customer was able to concentrate more resources and efforts to an strategic and important aspect, which has a direct impact on the business processes of the organization, transferring to the vendor the responsibility of them implementation, configuration and maintenance of the infrastructure needed to run the application.

As you can see is a technology that can support us to keep our business sector with benefits and the government sector could employ it to further their development.

Analysis of the benefits of the adoption of cloud computing in Mexico.

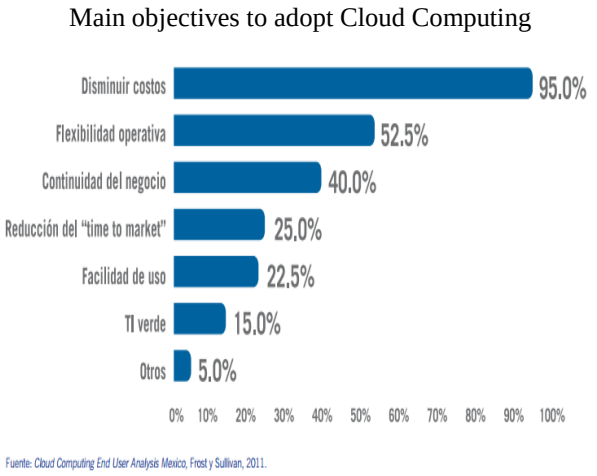
According to an analysis by the ISACA institution only 26 percent of companies that were part of the study have employed the use of an activity of cloud computing and 38% do not use any application of it, the other percentage lives in uncertainty, due to the great doubt that the security of information generetes as shown in Graphic 1.

Companies plans to adopt cloud computing

Fuente: ISACA 2011, *IT Risk/ Reward Barometer—Mexico Edition*

Graphic 1

One of the most important points for the adoption of cloud computing in the surveyed Mexican companies is to reduce operating costs and increase the flexibility of the other companies, the other point is the business continuity in the adoption of this as shown in Graphic 2.



Graphic 2

Consider the following comparison between the investment that would make a company that acquires its IT infrastructure as the traditional way shown in Graphic 3.

Diagram of premise vs. cloud costs for a company that uses Lync + Exchange + SharePonit (Cost is pesos)

Graphic 3

Definitely the use of cloud computing has a significant advantage in system implementation costs, if this was done through the SME sector, savings would be meaningful and businesses would use them to increase their operation. Mexican Institute for Competition analyzed the structure of the 2011 IT budget of some companies from different sub-sectors of the economy in Mexico that require large financial investments in IT to operate. These are:

- No Stock Market financial institutions.
- Trading supermarkets and departments.
- Food industry.
- Radio, television and other telecommunications.
- Savings between 25 and 40% of spending on software to migrate to SaaS applications. (Gartner Inc.)[12]
- Savings between 65 and 85% due to lower support and maintenance costs after the investment costs (Alford and Morton).[13]
- Savings of 30% by changing the data center and the infrastructure of the software services of PaaS (Appirio57 based on customer experience)[14].

The assumptions used are the most conservative scenarios: 25% savings on software, 65% on support and maintenance and 30% of capacity of utilization of the servers through PaaS.

Through these employed assumptions in the unbundled business spending (software, support and maintenance of hardware and servers) in each sub-sector IT all savings were estimated.

[12] SaaS CRM Reduces Costs and Use of Consultants. Gartner Inc. 2008
[13] The Economics of Cloud Computing: Addressing the Benefits of Infrastructure in the Cloud. Booz, Allen, Hamilton 2009
[14] Cloud Computing Savings – Real or Imaginary? Appirio 2009

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

The results showed that credit and financial intermedation institutions could save 1.8% of GDP in their sector if they were implemented to the cloud. Between the companies that increased savings we can find Banamex (1.258 million pesos), Bancomer (1,184,000 pesos) and HSBC (407 million pesos) with savings of 44%, 39% and 32% of their total IT budget, respectively. On average, the companies in this subsector can save 38% of their IT budget equivalent to 1% of total revenues.

Migration to cloud companies in supermarkets save 0.57% of the subsector's GDP. Companies with more savings would be Bodega Aurrera (304 million pesos), Soriana (191 million pesos) and WalMart of Mexico (190 million pesos). These savings represent 33, 30 and 35% of the total IT budget, respectively. On average, the savings in IT spend in the subsector is 31%, equivalent to 0.24% of its total revenue.

According to IT spend into companies in the food industry, moving to the cloud could generate savings of 0.42% of the subsector's GDP. Companies with higher savings would be Grupo Bimbo (426 million pesos), Sigma (127 million pesos) and Grupo Industrial Lala (92 million pesos). The IT saving budget of these agencies is 46% for the first two companies and 44% for the third. The average saving of the subsector companies is 36% of IT spending and 0.25% of total revenues.

Finally, for companies located in the subsector, television and other telecommunications, the estimated savings by migrating to the cloud is 0.27% of the subsector's GDP. Companies with higher estimated savings are Telcel (544 million pesos), Telefonos de Mexico (145 million pesos) and Televisa (74 million pesos).

Savings as a percentage of the total IT budget are 35%, 22% and 29%, respectively.

On average, companies in the subsector save 30% of their spending, which amounts of 0.2% of its total revenue.

In total, the estimated savings that migrate to the cloud computing are these four subsectors that represent 0.08% of total GDP.
If these savings are calculated towards large companies imagine what would happen to our country with SMEs, the savings in initial capital costs allow the entry of new competitors in the market, especially with SMEs, democratizes access to technologies.

In other words, the implementation of the cloud allow to SMEs to compete on the same technology scale that large enterprises. Due to the following factors:

- Not require high investments.
- Take advantage of the Economies of Scale and Large Companies.
- They are no longer concerned about the maintenance and support.
- Obtain better security schemes only with those who have the capability of accessing.
- Improve the time-to-market of new services.

An increased access to technology not only benefits companies, but also to citizens and governments. Anyone can get advantage from the access with more certainty and security (as a patient, student, employee, etc.)., Allowing anyone to access or share their data and files in a simple way via Computer or cell phone, generating significant benefits.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Economic impacts in the adoption of cloud computing [15]

The use of cloud computing, has an immediate impact on the budget of businesses and individuals since it eliminates the initial investment related to IT and costs. This simple transfer of investment costs to operating costs move from Capex to Opex will allow the opening of more companies, especially the small ones.

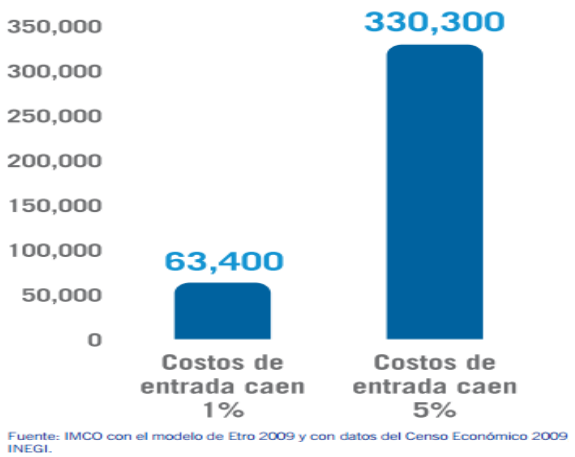
The starting point to explain the benefits of cloud computing are the monetary savings. In order to estimate the potential savings of moving around the cloud, the Mexican Institute for Competition analyzed the structure of the IT budget of 2011 of the top companies in different subsectors of the economy as well as the main institutions of the Federal Public Administration (APF). The results show that the 6 sub-sectors of the national economy could have set a saving of 20 billion pesos, equivalent to 0.16% of GDP savings. These sub-sectors are intensive in the use of IT, and which represents the 36% of total expenditure of Mexico in computer equipment and peripherals (excluding government activities).

Therefore, to estimate an impact of cloud computing on the Mexican economy, (which accounts for 75% of total is spend on computer equipment and peripherals) are extrapolated, we exclude the primary sector (0.04 % of total expenditure on computer equipment and peripherals) and we add government savings (0.08% of GDP) to give an estimated total of savings of 0.31% of GDP. The detail of the calculations for each of the sectors analyzed is described.

Savings in the private sector

The study that was used by the Mexican Institute for Competition to estimate the effects of "cloud computing" in business is 'The Economic Impact of Cloud Computing on Business Creation, Employment and Output in Europe' Etro (2009)", which presents a general stochastic and dynamic equilibrium model that shows a change in the cost, from fixed costs to variable input costs, allows greater openness of companies, job creation and growth economic. The idea behind the model is: the falling of the fixed costs (between 1 and 5%), which promotes the entry of new companies resulting in an increased of production and consumption. It is noteworthy that the model does not consider efficiencies, generated by network economies or positive externalities of energy savings replicating the model used in Europe to Mexico and using the most conservative scenario (1% drop in fixed costs of entry to SMEs)we find that in Mexico could create 1,800 new SMEs, the equivalent of 63,400 jobs. On the other hand, using the optimistic scenario, a fall in the cost of 5% involve the creation of 9,500 SMEs and about 330.300 new jobs.

Employment Generated by the adoption of cloud computing in SMEs



Graphic 4

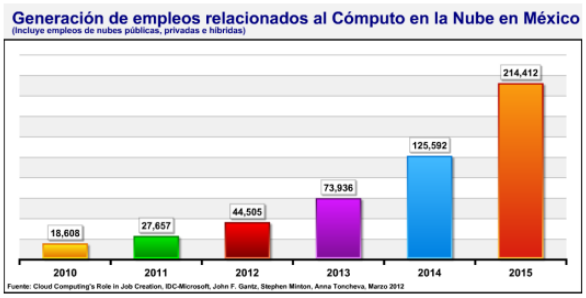
[15] IMCO. (2012). Computo en la nube detonador de competitividad. Pag 31 from http://imco.org.mx/wp-content/uploads/2012/6/computo_en_la_nube_detonador_de_competitividad_doc.pdf

The generation of businesses and jobs for transiting at the "cloud computing" come from savings generated by businesses, especially those who start from scratch because the initial invession is minim, but also those who are already in operation.

The costs involved in operate a system on premise compared to a cloud system are summarized in Graphic 3. As seen in the diagram, the traditional enterprise, is purchasing an IT equipment for operation, where spent $ 1,248,480 pesos per year. This expenditure does not include the cost of computers and the cost of Internet access (with or without cloud).

An investment in the cloud computing allows savings in economies of scale, without the need of having to pay an infrastructure investment.

Generation of jobs related to cloud computing in Mexico



Graphic 5

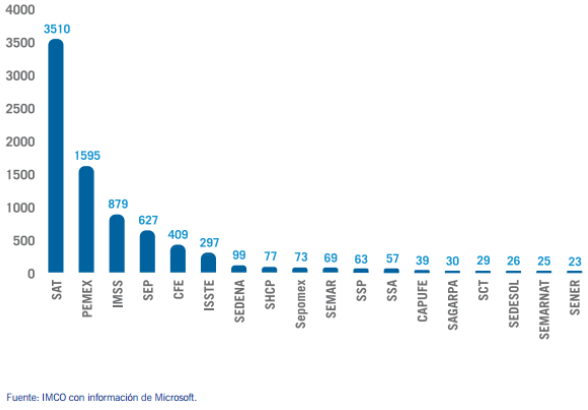
Savings in the public sector

For governments, the Mexican Institute for Competitiveness also use the same assumptions for savings and analyze the structure of the 2011 IT budget of the institutions of the federal government, state and some municipal governments to estimate potential monetary savings to transit cloud.

The estimates show that the public sector would save 1.7% of GDP if the subsector migrates to the cloud. Among the institutions of the federal government that could generate higher monetary benefits to such migration, there is the Tax Administration Service (3,510 million pesos), (1.595 million pesos), the Mexican Institute of Social Security (879 million pesos) and the Secretary of Public Education (627 million pesos). Savings as a percentage of IT budget for these entities would be 64% for TSS, 34% for PEMEX and 33% for the IMSS and the SEP. On average the institutions of the federal government would save 35% of their annual IT spending or approximately 0.58% of the Expenditure Budget of the Federation (PEF) .62 This saving is equivalent to the budget of the Navy (0.53% PEF) and is 10% higher than the National Council of Science and Technology (CONACYT).

As the chart shows, the main savings above the rest of the units would be for the SAT. Migrating SAT platform to the cloud, in addition to the significant savings to the treasury, would better serve taxpayers and avoid saturation of the system during the last days of the annual return of income. As shown in Graphic 6.

Savings of federal government institutions



Graphic 6

Among state governments to generate more savings to migrate their infrastructure to the cloud are the Federal District (190 million pesos) first the State of Mexico (152 million pesos) second the government of Nuevo León (47 million pesos).

The savings of such entities amount 28% of the total IT budget for the DF government and 33% for the other two governments. On average, 32 states would save 27% of their total annual spending, equivalent to 0.1% of their total annual income. As shown in Graphic 6.

Using other methods to estimate the savings from the transition to the cloud, the Mexican Institute for Competitiveness mentions that these estimates may be greater than those described above. Giving the example, Alford and Morton (2009), in which model considers the costs of server hardware, server software for basic, technical support during the transition phase, support and maintenance of hardware and software, labor costs of the IT and energy costs and cooling savings estimated to migrate to the cloud to the Federal Government of the United States of 66% on the cost of maintaining traditional data centers.

For state governments, the savings by migrating to a hybrid cloud in three years represent 87% of their total IT budget and 0.23% of its total expenses while transitioning to a public cloud would generate savings of 95 % of its IT budget, equivalent to 0.25% of its total expenditures.

Using this methodology, PEMEX, with data centers having up to 2000 servers, could save up to 87% of annual IT spending, or 0.65% of its annual budget, migrating to a hybrid cloud in 3 years. The savings could increase to 95% of their IT budget to choose a public (0.7% of its annual budget) cloud.

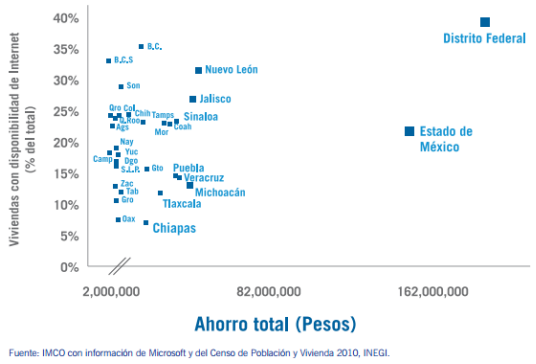
If you do the same calculation for the Federal Public Administration (without PEMEX and CFE) 65 with about 3000 servers, estimates savings of migrating to a hybrid cloud in 3 years, from 88 % of annual IT spending of the APF , equivalent to 1.13 % of the Expenditure Budget of the Federation 66 (PEF) and 1.23 % of PEF to migrate to a public cloud.

In addition to the savings that migration brings, computing cloud services, cloud computing capacity and improve response times in the public sector. This promotes citizen participation and provides information that promotes government transparency and accountability while reducing costs , simplify operations and improve government efficiency .

Thus, the benefits of migration to the cloud can be multiple ; therefore the savings compared to the potential benefits of citizenship, estimated from the percentage of households with Internet access by state (see Graphic 12) .

The greatest potential benefit is in the Federal District , followed by the State of Mexico . See Graphic 7.

Saving state governments and households with Internet access by state, by changing the Federal cloud, followed by the State of Mexico.



Graphic 7

To evaluate the different economic sectors analyzed with the same criteria, the Mexican Institute for Competitiveness think a point system scale of 1 to 5 to sort each potential social impact, according to the following criteria:

Score 5 for the government: the social impact of cloud computing in the government allows ample benefits. At the same time, citizens also benefit directly from increased collaboration between government agencies, as well as improvements in efficiency and transparency.

Score 4 for educational services: universities can benefit not only the citizens savings and efficiencies, but increased availability of computing power for research.

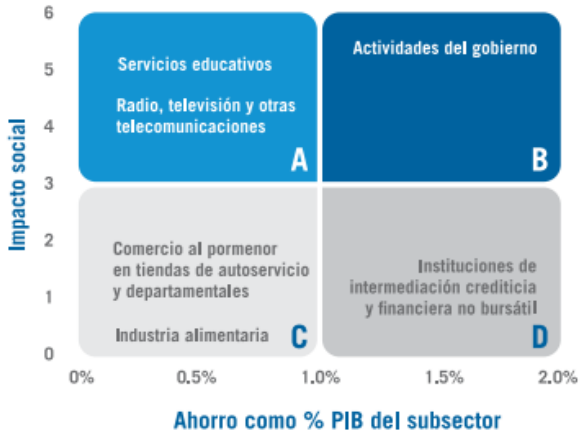
Score 3 for the sector of Radio, Television and other telecommunications: to facilitate collaboration between business and the user, more people can benefit from the ideas of others.

Score 2 for credit institutions and financial intermediaries: these institutions also generate social benefits, to improve customer service across platforms (internet banking) and easier access everywhere

Score 1 for large companies: they do not offer as many externalities for citizens compared to other sectors. In the case of the sectors studied, food industry and retail, like other sectors, impacts citizenship fostering collaboration between employees and improving customer service.

In summary, the major impacts of cloud computing (in monetary and social savings) to Mexico are located in the quadrant. Quadrant D followed then by B, C being the lowest quadrant, both monetary and social impact. The influence to migrate towards the quadrant sectors have important implications for the country.

Saving and social impact move to the cloud by sectors



Fuente: IMCO con información de Microsoft y del Banco de Información Económica (BIE), INEGI.

Graphic 8

According to these studies by the Mexican Institute for Competitiveness, migration towards cloud computing would bring enormous benefits in the areas of the country.

Environmental impacts

Now we will talk a about the environmental issue and how it affects simply migrate to cloud services because in recent years ,an increased in the processing capacity and the digitization of information has stimulated a demand for infrastructure and systems of increasingly powerful information , resulting an increased in the energy demand.

The cloud computing represents significant savings in energy and therefore carbon emissions, so it is considered as Green IT. These savings stem mainly from the optimization of servers that exist in the world.

A study by Accenture, estimated energy savings by migrating to the cloud can be up to 30 % for large deployments (over 10,000 users) and up to 90 % for smaller deployments (100 users).

According to the study, the factors that contribute to these savings are:

- Efficiency: optimize the use of existing servers at full capacity (to tie the server capacity with demand).

- Multiple Tenure: different users using the same application simultaneously, reducing loads during peak hours, to serve large numbers of users and organizations in shared infrastructure

- Higher efficiencies of energy consumption in data centers (places where the servers are hosted) using advanced infrastructure reduces energy consumption by cooling systems, as described below.

Mexican Institute for Competitiveness estimated savings in energy consumption and emissions for Mexico, based on the consumption based in a company of 45 people and CO2 emissions in the sector of medium and large enterprises.

So if a company with 100 employees reduce their CO2 emissions by 90% per user, to change its email, calendar, contacts and collaboration portal.

On the other hand one with 1000 workers reduce their emissions by 85%, due to the electricity consumption of a medium-sized 23 Mw / h per year to maintain their infrastructure, CO2 emissions for these companies fall 13 tons per year while for large companies in 12 CO2e per year. This means that the sector of medium and large companies in Mexico could reduce overall to 680,000 t CO2e per year if all companies migrate to the cloud, which is equivalent to removing 90 thousand vehicles circulating[16].

Conclusions

Cloud computing offers many advantages for a company to be competitive and to government institutions provide greater value to the population, in this article we talk about all the savings and benefits in key sectors of our country in the private, public and environment field, it is important to address the myths that have concerning the use of this technology as the aspect of security, availability, fear of losing control over the data, is one of the main barriers that are encountered to implementing but before taking this step we have to know, establish and manage a recognized provider of the interoperability system in the cloud. It is found that the cloud computing can be a good investment in all productive areas and government institutions as the costs and the flexibility in its implementation and operation.

[16] According to estimates of Microsoft, a company that uses 6 servers spent 33,600 pesos a year on energy (mainly electricity). The use of 23 Mw / h annual results from dividing the total annual cost of electricity between the average price for industry average for 2010 was 1,447 pesos

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Regarding the development, is necessary to promote reforms in the field of communications that help to the spread of technologies such as computing to help the development of enterprises, today many places in the country do not have Internet feature which makes the use of this technology revolutionizing countries and accelerating their growth, hopefully strengthen the National Digital Agenda in internet antennas for all and do not left the writing which is very important to Mexico that begins to restore growth.

The cloud computing can be a good investment and can be the door for companies to open new jobs and governments, can save costs that can leverage to invest in other programs that support communities to develop.

References

AGUILERA, G. (2010). El cómputo en la nube. (Spanish). *Contenido*, (560), 28.

Ardavin, J. A. Las TIC y el Desarrollo econimico en Mexico. Retrieved 30 Abril 2014, 2014, from http://www.slideshare.net/OCDE/las-tic-y-el-desarrollo-econmico-de-mxico-experiencia-de-la-ocde

Ceballos, F. (2013). Cloud Computing, detonador de competitividad. Retrieved 3 Mayo 2014, 2014, from http://www.forbes.com.mx/sites/cloud-computing-detonador-de-competitividad/competitividad,

EYE OS. Definiendo la nube: Modelos de implementación. from http://blog.eyeos.org/es/2012/03/30/definiendo-la-nube-modelos-de-implementacion/

Fernández, F. (2009). DEL «CÓMPUTO EN LA NUBE» A LA EMPRESA 2.0. (Spanish). *Debates IESA, 14*(1), 70-75.

Francisco Carlos Martínez Godínez, B. V. G. G. Computo en la Nube Ventajas y Desventajas. 2014, from http://revista.seguridad.unam.mx/numero-08/c%C3%B3mputo-en-nube-ventajas-y-desventajas

García, D. F. R. M. (2012). Tecnologías de la información y telecomunicaciones para el desarrollo de México. From http://www.observatoriodelaingenieria.org.mx/docs/pdf/5ta.%20Etapa/8.Tecnolog%C3%ADas%20de%20la%20informaci%C3%B3n%20y%20telecomunicaciones%20para%20el%20desarrollo%20de%20M%C3%A9xico.pdf

I. M. p. l. (2009). ¿ Por que son tan importantes las TICs? , from http://imco.org.mx/wp-content/uploads/2009/10/tic_impuslo_tic_09.pdf

IMCO. (2012). Computo en la nube detonador de competitividad. from http://imco.org.mx/wp-content/uploads/2012/6/computo_en_la_nube_detonador_de_competitividad_doc.pdf

INEGI. (2012). Estadisticas y disponibilidad y uso de tecnologia de informacion y comunicaciones en los hogares 2012. Retrieved 1 de Mayo, 2014, from http://www.inegi.org.mx/prod_serv/contenidos/espanol/bvinegi/productos/encuestas/especiales/endutih/ENDUTIH2012.pdf

Secretaria de Comunicaciones y Transportes, S. d. C. y. Anuario Estadistico 2012. Retrieved 2 de Mayo del 2014, 2012, from http://www.sct.gob.mx/fileadmin/DireccionesGrales/DGP/estadistica/Anuarios/ANUARIO-2012.pdf

Article **ECORFAN Journal-Mexico**
OPTIMIZATION December 2014 Vol.5 No.12 986-1000

Comparison of European and Asian valuation of options with underlying average and stochastic interest rate by Monte Carlo simulation

ORTIZ- Ambrosio *† & Martínez-María

Escuela Superior de Economía-I. P. N. Plan de Agua Prieta 66, Plutarco Elías Calles, Miguel Hidalgo, 11350 Ciudad de México, Distrito Federal, México.

Received October 06, 2012; Accepted May 31, 2013

This paper proposes a methodology to obtain the price of an asian option with underlying averagethrough Monte Carlo simulation. It is assumed that the interest rate is driven by a mean reversion process of Vasicek and CIR type with parameters calibrated by maximum likelihood. The simulation includes the quadratic resampling which reduces the use of computational resources, in particular the method improves the generation of variance covariance matrix. The proposed methodology is applied in the valuation of options with underlying price AMXL. The results show that by comparing prices of european options, with both simulated and published by MexDer with their asian counterparts, asian options prices are lower in the case of call and put options in the money. For put options simulated prices were lower in all cases. It was also found that the difference increases as the time to maturity of the option increases.

Geometric Avarage, Matematic Modelation, Asian Options

Citation: Ortiz A, Martínez M. Comparison of European and Asian valuation of options with underlying average and stochastic interest rate by Monte Carlo simulation. ECORFAN Journal-Mexico 2014, 5-12: 986-1000

*Correspondence to Author (email:a7ortiz@yahoo.com.mx)
† Researcher contributing first author.

Introduction

The Asian[17] options, also known as average options are an important class of instruments in exotic derivatives, they belong to the dependent methods of its trajectory, the value of the option on maturity depends not only on the value that reaches the active underlying on maturity, but also of the evolution that has it throughout the life of the contract. Similarly, Asian options can be European or American. There is an extense variety of underlying in these kind of contracts: currencies, equities, interest rates, goods (commodities), insurance and energy (electricity).There are multiple reasons why they are popular and some of which are mentioned in the development of this research.

The purpose of traiding Asian options is to reduce price volatility of the underlying asset just before the due date[18]. These are useful when is made frequent transactions on the same asset in a given time. It is cheaper to buy an Asian option to consider *n* different prices for the same asset (through averaging) on maturity, to buy *n* options of the same asset on different maturities, which consider different *n* premiums being very costly in both alternative which risk coverage is very similar.

Asian options are popular in the financial industry because their premium is less than the European one and they are less sensitive to variation in prices of the underlying assets.

The averages commonly used in the option contracts of this type are the arithmetic or geometric of the underlying.

Most of the Asian options are trade with discrete sampling, if is sampled with daily prices this can be approximated by continuous sampling.

Asian options are classified in various ways. For example, if the strike price depends on a fixed amount, the option is known as an Asian option with fixed strike price or with average price. If the exercise price is proportional to the price of the asset, then it is an Asian option with strike price or an option with floating average strike price. Another distinction can be made according to the nature of the mean or average, if is arithmetic or geometric, both with different weights in the previous observations. The average can be calculated with discrete sampling, with finite number of previous embodiments or by continuous sampling. In practice, all contracts are written by arithmetic mean with discrete sampling, although many papers in the literature consider the continuous case.

Some of the reasons justifying the negotiation of Asian options are the following; because the contracts only depend on the final price of the underlying that are more vulnerable to sudden shocks or large price manipulation, Asian options are less sensitive to these phenomena. Some agents prefer Asian options as hedging instruments, as they may be exposed to the performance of the underlying on a timespan. In addition, Asian options are cheaper and easier to cover than their plain vanilla counterparts.

[17] These options are called Asian because they were operated in some Asian markets to discourage the over year to maturity are first used in 1987, when the office of Bankers Trust in Tokyo's used them to value options with average price on contracts of a barrel of oil .

[18]A more detailed description can be found in Haug (2006).

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

This last results if you take into account that the average volatility will usually be less than the underlying one, the closer to the due date is, the lower the average uncertainty will be. This means that there is less dependence on the Asian option price and changes for a plain vanilla option with the same maturity

With respect to the valuation of these options under probabilistano approach there are solutions for Asian options with arithmetic mean. This approach assumes that the core follows a geometric Brownian motion which is equivalent to assume that the core follows a lognormal distribution. Unlike the geometric mean modeled as a product with correlated lognormal random variables, the arithmetic mean is the sum of the correlated lognormal random variables, which is why there is not a closed form of expression for distribution function of this amount, see Linetsky (2004). The same problem results in the valuation of a basket option, whose price depends on the arithmetic mean of several assets.

The price of an Asian option with arithmetic mean can be approximated by its geometric counterpart in several ways. For example, Turnbull and Wakeman (1991) approximate the price of an option with matching arithmetic to geometric moments with media partners. It can be use the Monte Carlo methods with variance reduction, with the price of the geometric choice and the control variable to calculate the price of arithmetics, see Glasserman (2003). An approximation formula of Asian options shown in Levy (1992).

In literature exists solutions in a closed form for Asian options with geometric mean with continuous sampling, see for example, Angus (1999) Vorst (1992) Kwok and Wong (2000). Dai (2003) also proposes a binomial model to value options of European and American geometric mean. These models have the advantage that the geometric mean of lognormal random variables results to have a lognormal distribution. Once you have the joint density function of the underlying price and the average, the price of the option is given by the expectation of the function of the payment under a neutral measure of risk

In Fouque and Han (2003) combine the approaches of Fouque, Papanicolaou, Sircar (2000) and Vecer (2002) to valuate Asian options under the hypothesis of reversion to the average volatility. His work aims to calibrate parameters with market prices of European options and the price of the option with a numerical algorithm, which consists of solving two partial differential equations with coefficients dependented on time. However, the accuracy of this method was not shown because it does not provide an analytical solution for the option price.

On the other hand, there are several studies that relax the assumption of constant interest rate model of Black and Scholes modeled as a stochastic process. The first work that incorporates stochastic interest rate option valuation is due to Merton (1973).

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

In Goldstein and Zapatero (1996) derive a formula for valuing an option on a share with the assumption that the interest rate is driven by an endogenous process of Vasicek type in an equilibrium approached to the interest rate. Kimy Kunitomo (1999) extends the model of Black and Scholes (1973) to modify the formula with deterministic interest rates and adjustment terms driven by the volatility of the interest rate. Recently Kim, J.-H., Yoon, J.-H. and Yu, S.-H. (2013) propose a model of option pricing in which the interest rate is driven by a process of Hull and White type with a focus on stochastic volatility in order to evaluate the sensitivity of the option price that changes in the interest rate.

In this way in literature there is a wide variety of methods to determine the price of an Asian option with arithmetic mean. In general terms, there are methods based on the solution to a partial differential equation, analytical approaches, lower and upper bounds, binomial trees, processing methods and methods of working of Monte Carlo.This work does not pretend to provide a comprehensive view of the above methods, in other words the objective is to contribute with a methodology based on the Monte Carlo simulation

In this research the price of an Asian option with average strike price on the arithmetic mean is obtained by Monte Carlo simulation. The assumptions of the proposed methodology are: the interest rate is stochastic and is driven by a process of mean reversion, specifically, it is assumed that the dynamics of the interest rate is modeled by a process of Vasicek and CIR types.

To obtain the price of the option under the previous assumptions using Monte Carlo simulation methodology with the quadratic resampling of Barraquand (1995), which improves the accuracy of the calculations and reduces the use of computational resources.

This paper is organized as follows: in the next section payment functions of an Asian option considering the arithmetic and geometric averages also compare with the option prices obtained with the model of Kema, Vorst (1990) Black and Scholes (1973); during the section 3 squares method of Barraquand resampling (1995) ; Section 4 presents the methodology for determining the price of an Asian option with underlying average with stochastic interest rate process driven by a reversion to the mean, in section 5 a comparative analysis is made between prices of European and Asian options with underlying score obtained with the proposed methodology; Finally, conclusions are presented.

Asian options with arithmetic and geometric mean

An option with average strike price is an Asian option where its payment depends on an strike price equal to the arithmetic average of the price of the underlying price during the life of the option. There are several ways to generate average values of the underlying price S_t . If the behavior of S_t is observed in a discrete time intervals t_i in a equidistant way during interval time $h := T / n$, then a serie of prices $S_{t_1}, S_{t_2}, \ldots, S_{t_n}$ is obtained. For example, for the aritmethic average:

$$\frac{1}{n}\sum_{i=1}^{n} S_{t_i} = \frac{1}{T} h \sum_{i=1}^{n} S_{t_i}.$$

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

If the observations are performed continuously during an interval time $0 \le t \le T$, the previous average corresponds to the integral:

$$\hat{S}_a := \frac{1}{T}\int_0^T S_t dt, \tag{1}$$

Most of the contracts are Asian options on arithmetic mean. In other cases, the geometric mean, which is used can be expressed as:

$$\left(\prod_{i=n}^{n} S_{t_i}\right)^{1/n} = \exp\left(\frac{1}{n}\ln\prod_{i=n}^{n} S_{t_i}\right)$$
$$= \exp\left(\frac{1}{n}\sum_{i=1}^{n}\ln S_{t_i}\right).$$

Therefore the geometric mean with continuous sampling rate is the integral:

$$\hat{S}_g := \exp\left(\frac{1}{T}\int_0^T \ln S_t dt\right). \tag{2}$$

If the averages $\hat{S}_a$ and $\hat{S}_g$ are built in the period of time $0 \le t \le T$, then corresponds to a European option. If the early exercise is allowed in $t < T$, and it is rewittren to $\hat{S}_a$ and $\hat{S}_g$, for example:

$$\hat{S} := \frac{1}{t}\int_0^t S_\theta d\theta.$$

With a given average $\hat{S}$ given with the arithmetic mean of (1) average or geometric mean value in (2) payment functions of Asian options are summarized as shown in the following table:

Summary table of payment functions of an Asian option

Pay function	Name of the option
$\max\left(\hat{S}-K,0\right)$	Option with underlying average
$\max\left(K-\hat{S},0\right)$	Option with underlying average
$\max\left(S_T-\hat{S},0\right)$	Option with average strike price
$\max\left(\hat{S}-S_T,0\right)$	Option with average strike price

Table 1

Source: Prepared

By comparing the features of a previous payment with an option of the Vanilla Plan, for an Asian option with underlying average $\hat{S}$ has to replaced S, while for an Asian option with average strike price $\hat{S}$ substitutes K.

A notable feature of Asian options is to use the fact that the underlying average has lower volatility just before the due date.[19]

Kemma and Vorst formula to approximate the price of an Asian option with a continues geometric mean

Kemna and Vorst (1990) show that a continues geometric average of Asian option can be

[19]A more detailed description of the advantages of the use of averages is in Wilmott (2006).

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

valued with the same approach of an option of a Vanilla plan, It should be change the parameters of volatility, σ by σ_a, and the cost of hauling, b by b_A.

According to Kemna and Vorst the formulas for valuing the call and put options are:

$$c \approx S_t e^{(b_A - r)(T-t)}\Phi(d_1) - Ke^{-r(T-t)}\Phi(d_2), \quad (18)$$

$$p \approx Ke^{-r(T-t)}\Phi(-d_2) - S_t e^{(b_A - r)(T-t)}\Phi(-d_1).$$

Where d_1 and d_2 are given by:

$$d_1 = \frac{\ln(S_t/K) + (b_A + 1/2\sigma_a^2)(T-t)}{\sigma\sqrt{T-t}}, \quad (19)$$

$$d_2 = d_1 - \sigma_a\sqrt{T-t}.$$

The function $\Phi(d)$ is the cumulative distribution function of $E \sim N(0,1)$. The adjusted volatility is equal to:

The adjusted volatility is equal to:

$$\sigma_a = \frac{\sigma}{\sqrt{3}},$$

While the cost of carry is set:

$$b_A = \frac{1}{2}\left(v - \frac{\sigma^2}{6}\right).$$

As mentioned in the introduction the price of an Asian option is less than the European one with the same parameters, so we proceeded to investigate this claim empirically, to achieve this goal, considering the following parameters:

Parameters used to calculate prices of Asian options buying and selling with the Kemna and Vorst (1990) and models of Black and Scholes (1973).

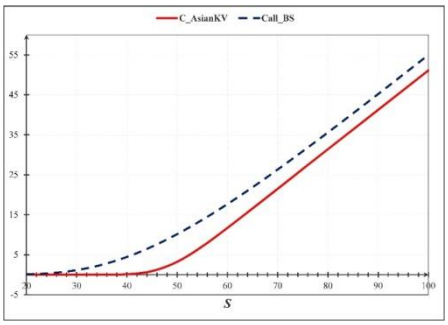
S_t	K	t	T	$\tau = T - t$	r	σ
50	50	0	1	1	0.1	0.4

Table 2

Prices of the options of buying and selling according to the parameters in Table 2 are calculated. Results for purchase options are shown in Graphic 1, the price of the underlying is considered from $S_t = 20$ to $S_t = 100$ in increments of 5.

It is observed that out of the money options for the price of an European call option is greater than the Asian one, for options inside the money price of a European call option is greater than the Asian one with the same parameters , the same is observed for the money options. Similarly with put options are calculated the prices, the results are shown in Graphic 2

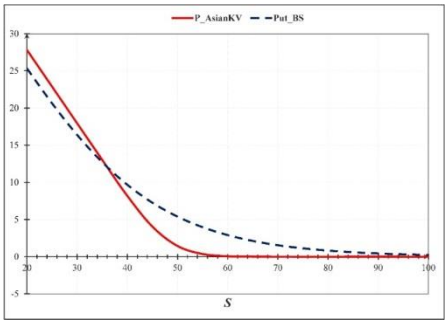
Comparing prices of Asian call options obtained with the Kemna and Vorst (1990) and the Black and Scholes Model (1973)



Graphic 1

Source: Own elaboration

Comparing prices of Asian call options obtained with the Kemna and Vorst (1990) and the Black and Scholes Model (1973)



Graphic 2

Source: Own elaboration

According to the results obtained for put options in Graphic 2 is shown that for options out of the money, within money and inside the money the price of an Asian option is lower than the European one, in all cases. However, for options deeper in money the price is more in Asian than the European.

Quadratic resampling

One of the most representative items of computational finance is the determining of the price of an asset that does not have a closed formula, this methodology generally consists of calculating the expectation of a function of a payment, for example the payment function of an option.

Monte Carlo[20] simulation is a widely tool used in practice, the basic idea is to estimate the hope of functions of random variables using the average of a large number of samples obtained from these simulations, although for proper accuracy is required to increase the number of simulations, with current computing resources where point is not a problem. However, in complex situations is required to simulate a process with several variables, the computations become an issue that deserves special attention.

In this context Barraquand (1995) notes that when random variables are generated, statistics show that in general do not coincide with the theoretical statistics. To take advantage of the properties of the theoretical formulas containing such statistics, it is necessary to transform the data in order to establish equality between the parameters of the sample and the theoretical parameters.

Definitely the key parameter is the variance-covariance matrix of a random vector.

Following this technique is described:

It is $\underline{X} = (X_1,\ldots,X_n)^{\cdot}$ a random vector of n dimension average:

$$\underline{m}_{\underline{X}} = E[\underline{X}] = (E[X_1],\ldots,E[X_n])^{\cdot}, \quad (3)$$

And variance-covariance matrix:

$$\Sigma_{\underline{X}} = E\left[\left(\underline{X}-\underline{m}_{\underline{X}}\right)\left(\underline{X}-\underline{m}_{\underline{X}}\right)^{\cdot}\right] = E[\underline{X}\,\underline{X}^{\cdot}] - \underline{m}_{\underline{X}}\,\underline{m}_{\underline{X}}^{\cdot}. \quad (4)$$

To estimate $\underline{m}_{\underline{X}}$ and $\Sigma_{\underline{X}}$, M simulations are run and then calculate the sample statistics such as:

$$\hat{\underline{m}}_{\underline{X}} = \frac{1}{M}\sum_{k=1}^{M}\underline{X}^{k} \quad (5)$$

And

$$\Sigma_{\underline{X}} = \frac{1}{M}\sum_{k=1}^{M}\left(\underline{X}^{k}-\hat{\underline{m}}_{\underline{X}}\right)\left(\underline{X}^{k}-\hat{\underline{m}}_{\underline{X}}\right)^{\cdot}, \quad (6)$$

Where $\underline{X}^{k}$ is the vector of the k-th simulation. By developing the expression of the sample variance is:

$$\Sigma_{\underline{X}} = \frac{1}{M}\sum_{k=1}^{M}\underline{X}^{k}(\underline{X}^{k})^{\cdot} - \hat{\underline{m}}_{\underline{X}}\hat{\underline{m}}_{\underline{X}}^{\cdot} \quad (7)$$

[20] Véase Boyle (1997) et al respecto al uso de la simulación Monte Carlo en finanzas computacionales.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

According to the law of large numbers when M is too big, $\hat{\underline{m}}_{\underline{X}}$ and $\hat{\Sigma}_{\underline{X}}$ are closer to $\underline{m}_{\underline{X}}$ and $\Sigma_{\underline{X}}$ with good precision.

If M is small the precision is not significant. However, it is posible to modify the data in $\underline{X}$ such that the sample mean and variance-covariance matrix matches the mean of the variance-covariance theory.

In making the estimates based on data $\hat{\Sigma}_{\underline{X}}$ is an square matrix defined as symmetric and positive which the square root of the matrix $\hat{\Sigma}_{\underline{X}}$ exist and is regular:

Consider the matrix:

$$H = \sqrt{\Sigma_{\underline{X}}}\left(\sqrt{\Sigma_{\underline{X}}}\right)^{-1} \tag{8}$$

And the vector:

$$\underline{Y} = H\left(\underline{X} - \hat{\underline{m}}_{\underline{X}}\right) + \underline{m}_{\underline{X}}. \tag{9}$$

If is executed M simulations the new vector is:

$$\underline{Y}^k = H\left(\underline{X}^k - \hat{\underline{m}}_{\underline{X}}\right) + \underline{m}_{\underline{X}} \tag{10}$$

And the simple mean of $\underline{Y}^k$ it is turn in:

$$\hat{\underline{m}}_{\underline{Y}} = \frac{1}{M}\sum_{k=1}^{M}\underline{Y}^k. \tag{11}$$

By developing the sum we obtain an equality between the sample mean of $\underline{Y}$ and the theoretical mean of $\underline{X}$:

$$\hat{\underline{m}}_{\underline{Y}} = \frac{1}{M}\sum_{k=1}^{M}\underline{Y}^k = \underline{m}_{\underline{X}}. \tag{12}$$

Similarly the variance-covariance matrix of $\underline{Y}$ is:

$$\begin{aligned}
\Sigma_{\underline{Y}} &= \frac{1}{M}\sum_{k=1}^{M}\left(\underline{Y}^k - \hat{\underline{m}}_{\underline{Y}}\right)\left(\underline{Y}^k - \hat{\underline{m}}_{\underline{Y}}\right)^{\cdot} \\
&= \frac{1}{M}\sum_{k=1}^{M}\left(H\left(\underline{X}^k - \hat{\underline{m}}_{\underline{X}}\right) + \underline{m}_{\underline{X}} - \hat{\underline{m}}_{\underline{Y}}\right) \\
&\times\left(H\left(\underline{X}^k - \hat{\underline{m}}_{\underline{X}}\right) + \underline{m}_{\underline{X}} - \hat{\underline{m}}_{\underline{Y}}\right)^{\cdot} \\
&= \frac{1}{M}\sum_{k=1}^{M}H\left(\underline{X}^k - \hat{\underline{m}}_{\underline{X}}\right)\times H\left(\underline{X}^k - \hat{\underline{m}}_{\underline{X}}\right)^{\cdot} H^{\cdot} \\
&= H\Sigma_{\underline{X}}H^{\cdot} \\
&= \sqrt{\Sigma_{\underline{X}}}\left(\sqrt{\Sigma_{\underline{X}}}\right)^{-1}\left(\sqrt{\Sigma_{\underline{X}}}\sqrt{\Sigma_{\underline{X}}}\right)\left(\sqrt{\Sigma_{\underline{X}}}\right)^{-1}\sqrt{\Sigma_{\underline{X}}} \\
&= \Sigma_{\underline{X}}.
\end{aligned} \tag{13}$$

This transformation implies that the average of the sample $\underline{Y}^k$ is identical to the theoretical mean of $\underline{X}$ and the variance-covariance of $\underline{Y}^k$ is identical to the theorical variance-covariance matrix of $\underline{X}$. To execute this transformation is necessary to know the theoretical variance-covariance. Under these conditions, this transformation improves the precision of the estimates obtained from the Monte Carlo simulation.

Asian option with underlying average and stochastic interest rate

One way to consider the stochastic nature of interest rates is to model it through processes of mean reversion, such as models of short rate widely cited in the literature as are the models of Vasicek (1977) and Cox-Ingersoll -Ross (1985) among others. With respect to the calibration of these models are generalized method of moments and series of time with an alternative method to calibrate the parameters of interest rate models proposed by Overbeck and Rydn (1997).

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

In practical terms this method consist in estimate a set of parameters within the conditional expectation of a stochastic process: $\mathrm{E}[X_t \mid X_{t-1}]$,then the estimated values are used as initial values to a maximum likelihood approach that accelerates the convergence to a global optimum.

On the other hand, one of the methodologies for determining the price of an option is through Monte Carlo simulation, the flexibility of the methodology proposed here is that with the assumption that the underlying price is driven by a Brownian geometric motion the payment function of the option arises a particular number of underlying paths that are generated and present values with the risk-free rate average trajectories.

This is how it can be determine the price of an European option, exotic options, among others, and is very useful when you have a closed formula. In the purposes of this paper it is assumed that the interest rate which is calculated with the hope pay function for an European call option and sell, and an Asian option price with underlying average, is stochastic and is model with a process of mean reversion.

The methodology is described for determining the price of an Asian option with underlying unpaid average of dividends through Monte Carlo simulation.

Suppose the price of the underlying S_t is conducted by a geometric Brownian motion with stochastic interest rate r_t, process driven by mean reversion and both processes are correlated as follows:

$$\frac{dS_t}{S_t} = r_t dt + \sigma dW_{S,t}, \tag{14}$$

$$dr_t = \kappa\left(\theta - r_t\right)dt + \sigma_r r_t^{\alpha} dW_{r,t}$$

Where $W_{r,t}$ is a Wiener process correlated with $W_{S,t}$, *e.g.*, $\mathrm{Cov}(dW_{r,t}, dW_{S,t}) = \rho dt.$ If $\alpha = 0$ Then the dynamics of the cut rate is driven by a Vasicek model considered $\alpha = 0.5$ for a process of a CIR type.

By making the analogy with stochastic volatility models, the parameters θ, κ and σ_r, are interpreted as a long-term rate, the rate of reversion to the long-term rate and the volatility of the variance of the interest rate (often referred to the volatility of volatility), respectively.

To make the simulation of both processes is necessary to generate trajectories with a structure given by:

$$dW = \begin{pmatrix} dW_{S,t} \\ dW_{r,\mathrm{t}} \end{pmatrix} \square\ N(0,\Sigma), \tag{15}$$

con:

$$\Sigma = \begin{pmatrix} \Delta t & \rho_{r,S}\Delta t \\ \rho_{r,S}\Delta t & \Delta t \end{pmatrix}. \tag{16}$$

To do this it is estimated L given that $\Sigma = LL^{\cdot}$ and simulated $dZ \sim N(0, I_2)$ to obtain $d\hat{W} = LdZ$, it is chosen a number for the partition of the term to maturity of the option, for example $N = 100$ and by the method of quadratic resampling generate dZ, involving $d\hat{W}$ for construction. Be μ_Z and Σ_Z, the

theoretical mean and covariance matrix of dZ respectively:

$$\mu_Z = \begin{pmatrix} 0 \\ 0 \end{pmatrix}, \quad (17)$$

y

$$\Sigma_Z = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}. \quad (18)$$

With the equations it is generated paths of the differential system of stochastic equations raised in (14).

The price of a call option with underlying average is given by the function of payment:

$$C(S_T) = \max\left(\frac{1}{T}\int_0^T S_\tau d\tau - K, 0 \right) \quad (19)$$

And the price of a put option with underlying average is given by:

$$P(S_T) = \max\left(K - \frac{1}{T}\int_0^T S_\tau d\tau, 0 \right). \quad (20)$$

If the underlying is driven by the system given in (14) then the algorithm to determine the prices of options of buying and selling is:

1) Generate $dW_{S,t}$ and $dW_{r,t}$ like:
$$dW_{S,t}^{(k)} = Z_{S,t}^{(k)}\sqrt{\Delta t},$$
$$dW_{r,t}^{(k)} = \rho Z_{r,t}^{(k)}\sqrt{\Delta t} + \sqrt{1-\rho^2} Z_{r,t}^{(k)}\sqrt{\Delta t},$$

2) Discretize the differential system of stochastic equations as:

$$r_{i+1}^{(k)} = r_i^{(k)} + \kappa\left(\theta - r_i^{(k)}\right)\Delta t + \sigma_r r_i^{(k)} dW_{r,t}^{(k)}$$
$$S_{i+1}^{(k)} = S_i^{(k)}\left(1 + r(t_i)\Delta t + \sigma_i^{(k)} dW_{S,t}^{(k)}\right)$$
$$i = 1, \ldots, N-1.$$

3) Define the arithmetic mean of the generated paths:
$$\bar{S}^{(k)} = \frac{1}{N}\sum_{i=1}^{N} S_i^{(k)},$$

4) Calculate the option Price as:

$$C = \exp\left(-\int_0^T r_t dt\right)\frac{1}{M}\sum_{k=1}^{M}\max\left(\bar{S}^{(k)} - K, 0\right)$$ and

$$P = \exp\left(-\int_0^T r_t dt\right)\frac{1}{M}\sum_{k=1}^{M}\max\left(\bar{S}^{(k)} - K, 0\right)$$

Where M denotes the number of simulated paths and N the number of generated prices.

Application and analysis of results

In this section are calculated by Monte Carlo simulation Asian options prices with underlying average, with the underlying share price of AMX-L and compared with rates published in the MexDer newsletter the 25/10 / 2013. It is assumed that the rate of Interest of the option is driven by processes of mean reverting of Vasicek and CIR type, and to estimate the initial parameters we consider the maximum likelihood method proposed by Overbeck and Rydn (1997).

The sample of the interest rate TIIE28 to calibrate the models includes the October 25, 2012 to October 25, 2013 With data obtained from the website of the central bank estimates. The Vasicek and CIR model parameters are as follows:

Summary table of parameter estimation of Vasicek and CIR models by the maximum likelihood method

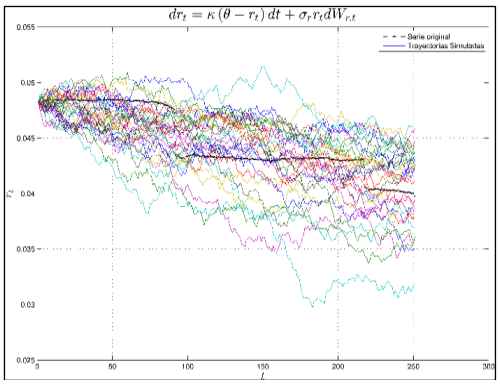
Parameters	Vasicek	CIR
κ	0.749896	0.809136
θ	0.033233	0.034069
σ	0.004879	0.023153
No. Obs. n	251	251
Likelihood Ratio	6.643470	6.641966

Table 2

The results of the above table can verify that the Feller condition is fulfilled: $2\kappa\theta > \sigma^2$ in both cases is important since it implies that the process lead a positive variance.

Graph 3 shows the original series of the risk-free rate and thirty simulated trajectories with the parameters given by the Vasicek model and Graph 4 with parameters given by the CIR model. In both cases the trend toward lower rate is observed, the original series also shows two significant changes: the first of 4.7550% to 4.3450% on 11/03/2013 and the second from 4.3075% to 4.0570%.

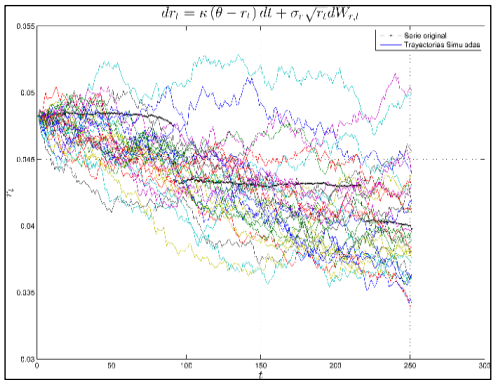
Original series and thirty simulated trajectories parameters calibrated with the Vasicek model



Graphic 3

Souce: Own elaboration

Original series and thirty simulated trajectories parameters calibrated with the CIR model



Graphic 4

Source: Own elaboration

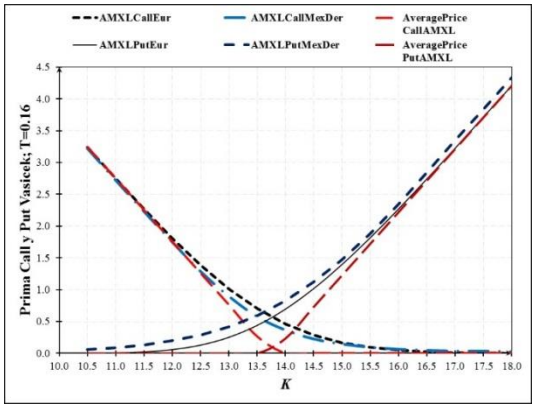
The results of the application are shown in the Appendix. Graph 5 shows results for terms ranging from T = 56, 147, 238 and 329 days, option prices obtained with the Vasicek model, and Graph 6 for option prices obtained with the CIR model.

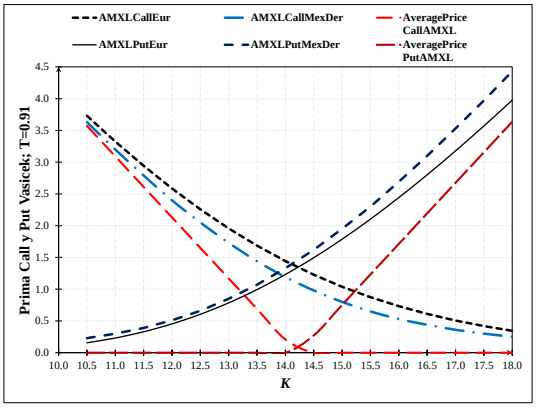
The number of trajectories that was simulated to determine the price of the options was a hundred-thousand. An important result is that by comparing prices of European options, with both simulated and published by MexDer with their Asian counterparts, Asian options prices are lower in the case of buying and selling options inside the money. For deeper options in the money the difference is smaller.

It is observed that as the term to maturity of the option is greater, the difference increases. For simulated purchase option prices the differences are greater compared to rates published by MexDer. To put options is why the simulated prices were lower in all cases.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

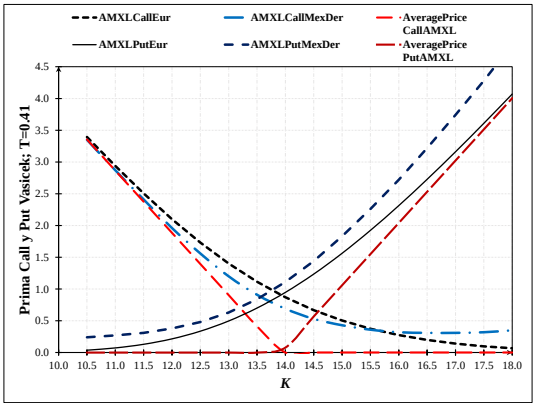
Comparing prices of European options and underlying average, with parameters calibrated with the Vasicek model

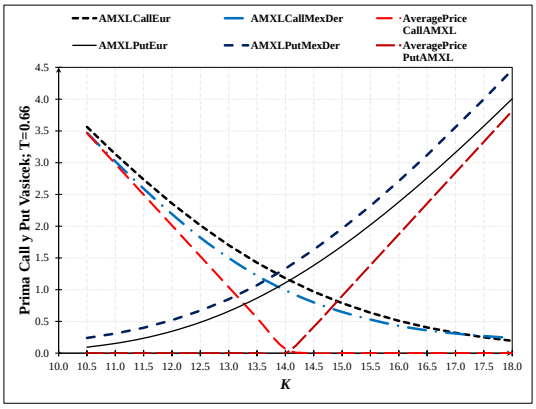




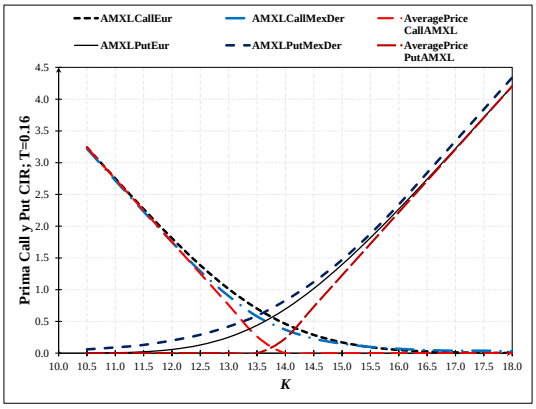
Graphic 5

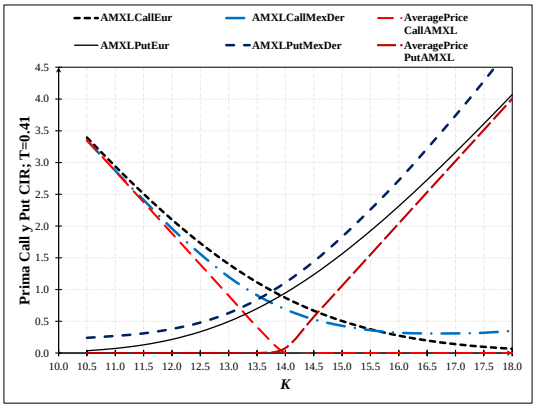
Source: Own elaboration

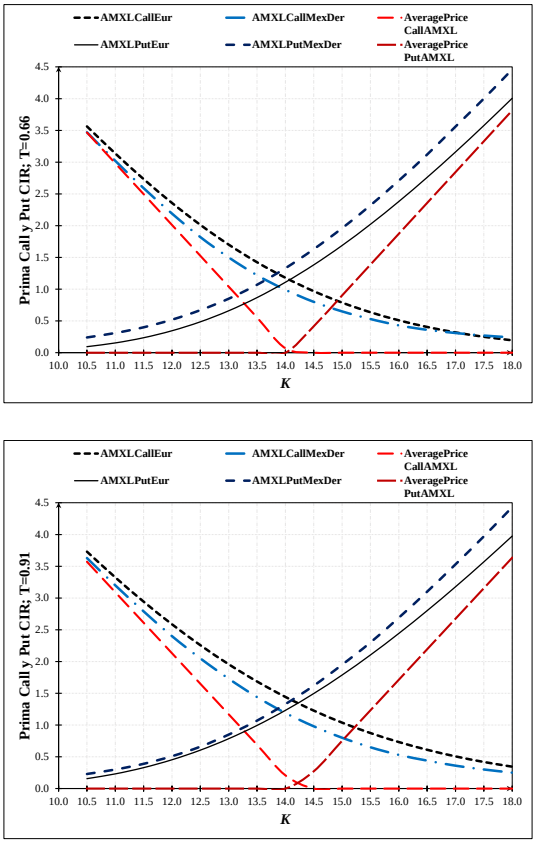




Comparing prices of European options and underlying average, with parameters calibrated CIR model







Graphic 6

Source: Own elaboration

Conclusions

Asian options are options where the underlying is the average price for a period of time. With this feature they have a lower volatility and therefore are cheaper compared to European options.Are mainly traded on currencies and commodities that have low trading volumes.

They were originally used in 1987 when the office of Trust Bank in Tokyo used them to determine the price of options on the average price of a barrel of oil, and therefore the option is known as "Asian".

Asian options can be classified into three categories: arithmetic and geometric mean and both can be weighted in various ways, in which a certain weight is applied to each underlying where the average is calculated. This can be useful to determine the average of a sample with a skewed distribution. An additional feature of Asian options is that the underlying may be the average price or the strike price of the underlying average take over the contract period.

In this research through Monte Carlo simulation and the method of quadratic resampling of Barraquand (1995) were determined prices of European options for buying and selling, and option prices of purchase and sale with average core, also known as average price (call and put) also assumes that the interest rate is stochastic and driven by a process of mean reversion type Vasicek and CIR.

The results show that by comparing prices of European options, with both simulated and published by MexDer with their Asian counterparts, Asian options prices are lower in the case of buying and selling options inside the money. For deeper options inside the money the difference is less, in both cases it was observed that as the term is mature the option is greater. To put options simulated prices were lower in all cases.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

References

Angus, J., (1999).A note on pricing derivatives with continuous geometric averaging, *Journal of Futures Markets*, Vol. 19, pp. 845-858.

Barraquand, J. (1995). Numerical valuation of high dimensional multivariate European securities", *Managment Science*, Vol. 41, No. 12, pp. 1882-1891.

Black, F. y M. Scholes (1973). The Pricing of Options and Corporate Liabilities, *The Journal of Political Economy*, Vol. 81, No. 3, pp. 637-654.

Boyle, P., M. Broadie, P. Glasserman (1997). Monte Carlo methods for security pricing, *Journal of Economic Dynamics and Control*, Vol. 21, pp. 1267-1321.

Cox, J. C., J. E. Ingersoll, y S. A. Ross (1985). A Theory of the Term Structure of Interest Rates, *Econometrica*, Vol. 53, No. 2, pp. 385-407.

Dai, M. (2003). One-state variable binomial models for European-American-style geometric Asian options, *Quantitative Finance*, Vol. 3, pp. 288-295.

Fouque, J.-P.,Papanicolaou, G. ySircar, R. K. (2000). Derivatives in Financial Markets with Stochastic Volatility, Cambridge University Press.

Fouque, J. P. y Han C. H. (2003). "Pricing Asian options with stochastic volatility", *Quantitative Finance*, Vol. 3, pp. 353-362.

Glasserman, Paul (2003). Monte Carlo methods in financial engineering, Springer-Verlag,NewYork.

Goldstein, R. y Zapatero, F. (1996). General equilibrium with constant relative risk aversion and Vasicek interest rate, *Mathematical Finance* Vol. 6, No. 3, pp. 331-340.

Haug E. G. (1997). The complete guide to option pricing formulas. Ed. Mac Graw-Hill. Second Edition.

Kemna, A., Vorst, A. (1990). A pricing method for options based on average asset values, *Journal of Banking and Finance*, Vol. 14, pp. 113-129.

Kim, J.-H., Yoon, J.-H. y Yu, S.-H. (2013), Multiscale Stochastic Volatility with the Hull-White Rate of Interest, *The Journal of Futures Markets*, Vol. 33 , No. 10, pp. 1-19

Kwok, Y. K. y Wong, H. Y. (2000).Currency-translated foreign equity options with path dependent features and their multi-asset extensions, *International Journal of Theoretical and Applied Finance*, Vol. 3, pp. 257-278.

Levy, E. (1992).Pricing european average rate currency options, *Journal of International Money and Finance*, Vol. 11, pp. 474-491.

Levy, E. (1992).Asian Options, en: Exotic Options: The State of the Art, ed. L. Clewlow and C. Strickland (Washington, DC: International Thomson Business Press).

Linetsky, V. (2004).Spectral Expansions for Asian (Average Price) Options, *Operations Research*, Vol. 52, No. 6, pp. 856-867.

Merton, C. R. (1973). Theory of Rational Option Pricing, Bell Journal of Economics and Management Science. Vol. 4, No. 1, pp. 141-183.

Overbeck, L. y Rydn, T. (1997). Estimation in the Cox-Ingersoll-Ross model, *Econometric Theory*, Vol. 13, No. 3, pp. 430-461.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Turnbull, S y Wakeman, L. M. (1991). A quick algorithm for pricing European average options, *J. Financial Quant. Anal.* Vol. 26, No. 3, pp. 377-389.

Vasicek, O. (1977). "An Equilibrium Characterization of the Term Structure", Journal of Financial Economics, Vol. 5, No. 2, pp. 177-188.

Vecer, J. (2002)."Unified pricing of Asian options", *Risk*, June, pp. 113-116.

Vorst, T. (1992). Prices and Hedge ratios of average exchange rate options, *International Review of Financial Analyst*, Vol. 1, pp. 179-193.

Kim, Yong-Jin y Kunitomo, N. (1999). Pricing Options under Stochastic Interest Rates: A New Approach, Asian-Pacific Markets, Vol. 6, No. 1, pp. 49-70.

Wilmott, P. (2006). Paul Wilmott on Quantitative Finance, Second Edition, John Wiley & Sons, England.

Wong, Hoi Ying y Cheung, Ying Lok (2004). "Geometric Asian options: valuation and calibration with stochastic volatility, *Quantitative Finance*, Vol. 4, pp. 301-314.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Article **ECORFAN Journal-Mexico**
RISKS December 2014 Vol.5 No.12 1001-1009

Moral Judgment Competence Between Public and Private Workers. A Comparative Study in Mexico

ROBLES- Victor†*

Universidad Autónoma Metropolitana Canal de Miramontes 3855, Ex Hacienda San Juan de Dios, Tlalpan, 14387 Ciudad de México, Distrito Federal, México.

Received January 18, 2012; Accepted July 23, 2013

This paper presents the findings of moral judgment competence from a comparative investigation between 112 public and 114 private workers in Mexico. The moral judgment competence was assessed by quantifying the C index, using the Moral Judgment Test (MJT) in both sets. The results showed no significant differences between both groups of participants, showing that the ability to deliberate and take moral decisions is equal in both work settings.

Moral judgment, public workers, private employees, comparative study

---

Citation: Robles V. Moral Judgment Competence Between Public and Private Workers. A Comparative Study in Mexico. ECORFAN Journal-Mexico 2014, 5-12: 1001-1009

---

† Researcher contributing first author.

Introduction

The number of studies on organizational values on the public and private sectors has grown rapidly in recent decades, with greater attention on the differences and similarities between the ethics of government and business (Van Der Wal & De Graaf, 2006). In their context, public and private managers daily taking decisions about ethical dilemmas in their jobs. Thus, the main purpose of this study is to examine the difference in the level of moral judgment between public and private employees. What are the levels of moral judgment between the both kinds of workers?

Initially, the hypothesis of this research, there are differences of the level of moral judgment between public and private employees, was developed through the context of the ethical dilemmas of both workers, secondarily, by the perception of their actions, their taking ethical decision and mainly by the theoretical framework of moral reasoning.

This research made a comparison between two independent samples, taken in an instant and at the same time, 112 employees of the public and 114 of the private sectors. The Judgment Moral Test was applied in a single instant in both groups, obtaining the evaluation of the moral judgment by quantifying the C index. The proof of the main hypothesis was done using the Student's *t*-test for independent samples. The results rejected the hypothesis, the existence of the differences of the moral judgment between public and private employees. This document shows the results and specific derivations of this comparative study.

Theoretical framework

Public and private organizations have important differences in the actions and policies: measuring of the results, effectiveness and political development. About these organizations exist exaggerated prejudices, where the government and businesses observe each other in negative terms. These two kinds of workers are perceived as undesirable, both profit maximization and bureaucracy. In this debate, the traditional characteristics of public organizations (neutrality, predictability, loyalty, reliability) and private organizations (profit, courage, innovation, efficiency) are not interpreted positively, on the contrary perceived in terms of load and of side effects. Public organizations and their employees are presented as dysfunctional, ineffective, alienated, with a lack of training and subject to ineffective rules, known as bureaucracy. The ethics of bureaucracy is characterized by inefficiency and incompetence, and the bureaucracy is sometimes treated as a corruption. In turn, companies and their employees and managers are often described as avaricious people who only think about making money and ruthlessly pursue their own interests and those of its shareholders, who apparently do not care about the effects of their activities on the environment, public welfare, or even the lives of ordinary people (Van Der Wal & De Graaf, 2006).

The differences in the actions, decisions and behaviors of public or of private employees, indicate inequalities in their moral reasoning.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

The literature on studies in ethics and decision taking is wide, O'Fallon and Butterfield (2005), in their review from 1996 to 2003 on the ethical decision-making point, found that the years of employment slightly influence in the ethical decision. Also, some research shows that having a managerial position is negatively related to ethical decision making and that the work experience is positively related to ethical decision making. Also, on the other hand, there are not significant differences between students from neither various university nor other areas that non-business students are more ethical than business students (O'Fallon & Butterfield, 2005). Having established that, the ethics of a person reflects the sum total of his individual experiences and his beliefs. So, the process of making good ethical decisions is complex and influenced by the individual, organization, location and external factors, as well as interpersonal and organizational influences. A person tends to have certain theories about the world, about other people or themselves, which affect their ethical decision -making (Jepson, Hine, Noblet, & Cooksey, 2009).

Decision making involves moral reasoning in many complicated situations, moral dilemmas, about which must deliberate the bureaucrats. Forcing theirself to decide whether their loyalty is to their boss, organization, law or conscience. They must decide whether they usually condemn tactics such as lying, are praiseworthy in certain situations. They must decide whether the involvement of elected officials is democracy at work or a threat to the legal rules and procedures. They must also decide whether a personal moral code trumps the collective wisdom of the bureaucracy or the community (Gormley Jr., 2001).

Meanwhile, in the field of private company employees are designed models of dishonesty, by respecting the property, compliance with rules and truthfulness (Scott & John, 2003). Also, organizational ethical dilemmas can focus on the treatment of employees in marketing, accounting, finance, natural environment, emerging technologies and international business, and many organizations have a formal management programs ethics and codes of ethics to guide decision -making. However, those responsible for such programs and committees are not perceived as effective in institutionalizing ethics as channels of culture, leadership and communication (Jepsen, Hine, Noblet, & Cooksey , 2009) .

According to the theory of Kohlberg's moral reasoning, people, knowing what is right, this motivates them to act accordingly (Krebs & Denton, 2005). The ability to make decisions and people's moral judgments is conceptualized as moral judgment competence. Same as it is based on internal principles and individuals act according to such judgments (Kohlberg, 1964). In this research the moral judgment competence is measured by the index C with a range of 1-100, indicating the percentage of the variation of the total response of an individual, which reflects the quality of their moral reasoning about the described behavior. The index C meets the criteria of evaluating skills and is independent of the person's moral attitudes, such as: a moral task is not falsifiable, has a gradual learning curve and smoothed curve of forgetting (Lind, 1999). For this reason, the index C is known as a pure index of moral competence (Lind, 2004; 1999).

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

The moral judgment of people transits through six different normativities of reciprocity and justice (Kohlberg, 1958). The pre-conventional level, with stages 1 and 2, the conventional level, with 3 and 4, and post-conventional level, with 5 and 6. Morally, refers conventional adherence to social norms, means conformity and maintaining them. Furthermore, the prefix pre and post, to the conventional term, referring to the way in which social norms reason, assessing only the consequences of its execution or by deliberation and execution of them, respectively (Kohlberg & Hersh, 1977).

Thus, workers, in stage one of moral judgment, perform an exclusive appraisal award or punishment, avoiding looking for one or the other. In stage two, an employee will only accept the exchange of interest only with a predominant authority of your organization. In the three he recognizes the group's interest and seeks its acceptation. The four represents the organizational and social conventionalism, where the worker shows to agree with the social system and freely accepted rules. The five stage represents a social contract morality, law and social welfare in the long term, such as dignity, is what recognizes the employee at this stage. The sixth, the worker accepts a morality of universal principles that transcend any organizational or social contract law (Kohlberg, 1958, Kohlberg & Hersh, 1977).

The development of these six stages has shown a transcultural universality because its convergence is verified using several methods related to decisions between different cultural groups (Gibbs, Basinger, Grime, & Snarey, 2007).

Moral judgment is based on the role - taking opportunities and socio-moral perspective (Schillinger, 2006). Collectively, states that the affective and the cognitive structures are inseparable but distinct, where the affective depends of energy and the cognitive is determined by the structure (Piaget, 1974, Kohlberg, 1958; Lind, 2004). In this cognitive-affective parallelism, there is a correlation between the index C and moral stages: negative or very low for stage one -two moderate for three and four and high positive for the last two, five and six (Lind, 2004).

Then, the question is: the moral judgment of people in the role of public employee has a different behavior than private?

Considering the index C as a quantification of such competence, is there any difference between the respective indices C? So, the main hypothesis of this study was to assess, whether the moral judgment competence in two groups of participants, employees of a public and private company workers were different. It also asks about moral stages of the participants, which established a sub-hypotheses or secondary hypothesis, if the moral judgment competence as assessed by the index C is different between public and private workers, then the six moral stages of both groups of participants will be different, because the stages are directly related to the index C.

Method

This research was cross-sectional and compared two independent samples. The quantification of the level of moral judgment competence between public and private employees was completed using the index C.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

This is as dependent variable of the kind of employees as independent variable: The six moral stages, in addition to age, education, years of education, level of academic achievement and labor antiquity. In this research, demonstration of the main hypothesis and secondary hypotheses was performed using the t-test for equality of means for independent samples, also considering the Levene test for equality of variances.

Participants

Participants were 112 employees of public sector and 114 private sector employees. Also, it was a non-probability sample, since the choice of respondents was not random, as the participants were appointed by the head of human resources of each organization. Table 1 shows the characteristics of workers in the public and private sectors, with the first group of the following: An average age of 43 years, with a little work experience over 17 years with a recorded schooling of the 11 years on average and school performance averaged 8.19 out of 10. On the other hand, the 114 private sector workers had an average age of 32 years, with a work experience of 7.5 years, with a school of just over 10 years, with an average of 8.45 school performance.

Participants

Group statistics

	Employee	N	Mean	Standard deviation	Standard error of the mean
Age	Public	111	43.23	8.153	.774
	Private	114	32.13	10.169	.952
Labor antiquity	Pública	108	17.1944	9.24336	.88944
	Privada	0[a]	.	.	.
Experience in months	Pública	109	22.85	8.481	.812
	Privada	111	7.48	7.674	.728
Years of educaion	Pública	108	11.4954	3.67900	.35401
	Privada	111	10.6712	3.89025	.36925
Academic achievement	Pública	96	8.1948	.58154	.05935
	Privada	43	8.4488	.61967	.09450

Table 1

Note: The average of labor antiquity in the private organization could not be calculated, this variable was not answered by these participants. As such, we observed differences in the age of 11.1 years, in the labor antiquity of 15.37 months, 0.82 in the school years, and 0.25 in average achievement. But the difference is not significant in years of education nor academic achievement.

On the other hand, Table 2 shows the t-test for equality of means between groups of public and private workers, accepting only matching stockings school years studied, as it was obtained a p-value of 0.109, more than 0.05, assuming equal variances with the corresponding p-value of 0.304.

Independent Samples. Test for public and private workers

		Levene test for equality of variances		T test for equality of means						
		F	Sig.	t	Fd	Sig. (bilateral)	Difference of means	Std. error of the difference	95% Confidential interval for the difference	
									Inferior	Superior
Age	Equal variances assumed	8.618	.004	9.021	223	.000	11.103	1.231	8.677	13.528
	Equalvariances no assumed			9.047	215.132	.000	11.103	1.227	8.684	13.521
Experience in months	Equalvariancesassumed	1.591	.208	14.096	218	.000	15.365	1.090	13.216	17.513
	Equalvariances no assumed			14.083	215.015	.000	15.365	1.091	13.214	17.515
Years of education	Equalvariancesassumed	1.062	.304	1.610	217	.109	.82420	.51193	-.18479	1.83319
	Equalvariances no assumed			1.611	216.827	.109	.82420	.51153	-.18402	1.83242
Academic achievement	Equalvariancesassumed	1.513	.221	2.333	137	.021	-.25405	.10890	-.46940	-.03869
	Equalvariances no assumed			-2.277	76.416	.026	-.25405	.11159	-.47628	-.03181

Table 2

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Note. In both groups, the public and private workers, equal variances not assumed, because the p value is greater than 0.05, in: Experience in months (p value = 0.208), the years of education (p value = 0.304) and academic achievement (p value = 0.221). Equal variances assumed only in age (p value = 0.004). In addition, only accepted matching stockings school years studied, since it was obtained a p value (0.109) greater than 0.05, by t-test for equality of means assuming equal variances with the corresponding p-value (0.304).

Materials and procedure

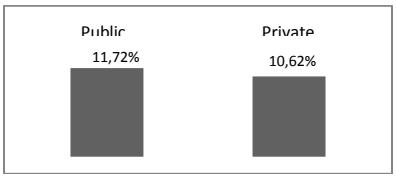
The instrument applied was the Moral Judgment Test MJT, theoretically and empirically validated by Lind (2008), which quantifies the moral judgment competence through the index C , which is quantified by a partition of the sum of squares similar to a MANOVA (Lind , 1999). MJT items form a multivariate experiment with design 6 by 2 by 2 orthogonal dependent. This questionnaire is constituted by two stories by way of moral dilemmas, rank according to the resolution of the dilemma, by six arguments in favor and six against the decision made by the protagonist of each dilemma. Where, each argument is one of the six moral kohlbergian stages, each one questioning the level of acceptance about the arguments, pro and against, on a scale from -4 to +4 (Lind, 2008).

Results and discussion

Graph 1 shows the comparison of mean C index among participants, public sector workers and private. Showing a higher moral judgment competence in public sector workers, as these reported a value of 11.72 points out of a hundred, higher than the private sector, as these were worth 10.62 points, giving a difference of 1.1 in favor of the first.

Confirming, first, that there are more than a resemblance to a difference between the ethics of government and business (Van Der Wal & De Graaf, 2006), particularly as it relates to moral judgment between the two types of workers. Additionally, contrary to other studies, they find a very low moral judgment of bureaucrats in relation to employees of private enterprise and that such differences are significant (Robles, 2012).

Comparison of the average C index between public and private workers. 112 public and 114 private employees, showing a slight difference of only 1.1 on 100 by the first ones



.

Graphic 1

Demonstration of the hypothesis. Table 3 shows the rejection of the fundamental hypothesis of this investigation, the existence of differences of moral judgment as assessed by the index C, between public and private workers. From the independent samples t test, the difference of only 1.1 for public workers was not significant and the null hypothesis was accepted, demonstrating that the means of the public and private workers C index are equal. Thus, it is concluded that the ability to deliberate and make moral decisions of public sector workers is equal to private.

With the rejection of the fundamental hypothesis is confirmed assertions Van Der Wal and De Graaf (2006), which are prejudices exagerated on bureaucracy and private business employees.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

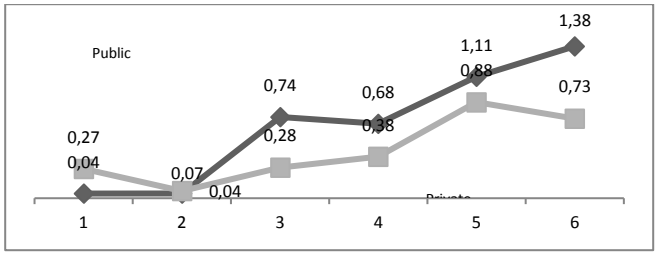
Well either perception or dysfunctionality daily practice, rules ineffective against the operability and effectiveness, moral reasoning is the same between the two types of workers.

Test for equality of means of the index C between participants from the public and private sectors

		Levene test for equality of variances		T test for equality of means						
		F	Sig.	t	Fd	Sig. (bilat.)	Diferen ce of means	Std. error of the difference	95% Intervalo de confianza para la diferencia	
									Inferior	Superior
C index	Equal variances assumed	1.011	.316	.867	224	.387	.011054	.012751	-.014073	.036181
	Equalvariances no assumed			.866	222.391	.387	.011054	.012759	-.014089	.036197

Table 3

Note. In the Levene test, SPSS reports a P value of 0.316 > 0.05, accepting the null hypothesis, then assume equal variances between the two groups of participants. Thus, the test T reports a P value of 0.387 > 0.05, therefore the null hypothesis is accepted and established that the means of the index C of both groups of participants, public and private workers are equal.



Graphic 2

Graphic comparative six moral stages between the public and private sectors. Public sector participants obtained a value in stage three (0.74), four (0.68) , five (1.11) and six (1.38) greater than those for the private sector (0.28, 0.38, 0.88 and 0.73), only in the one (0.04) was lower than the private (0.27) and the public in the two (0.07) was almost equal to the private (.04)

The resulting stages mean that public workers are morally more conventional , show greater adherence to social norms (Kohlberg & Hersh, 1977) that the private company .

Similarly, bureaucrats have more postconventional reasoning, deliberating on social standards and analyze their execution (Kohlberg, 1958, Kohlberg & Hersh, 1977) more strongly than private workers.

Demonstration of sub-hypotheses. The secondary hypothesis of this research was that there is a difference of six moral stages between public and private workers. Table 4, through T Test for equality of means and respective p values indicates an acceptance of equal variances to the five moral stage between the two groups of participants, only six rejects Stadium equal variances. Thus, it is accepted that the averages agree stages one, two and five; contrary, reject that the means match in stadiums three, four and six. From here, we demonstrate partially sub-hypothesis, establishing that the moral stages differences between public and private workers are moderate. This means that participants have a fairly similar reasoning regarding the various normativities of reciprocity and justice.

T test for equality of means of the six stages between participants from the public and private sectors

		Levene test for equality of variances		T test for equality of means						
		F	Sig.	T	Fd	Sig. (bilateral)	Differen ce de means	Std. Error of the differe-nce	95% Confidential interval for the difference	
									Inferior	Superior
Stage 1	Equal variances assumed	.305	.581	-1.303	224	.194	-.22513	.17282	-.56569	.11542
	Equalvariances no assumed			-1.303	223.664	.194	-.22513	.17273	-.56552	.11525
Stage 2	Equal variances assumed	.036	.850	-.136	224	.892	-.02115	.15567	-.32791	.28561
	Equalvariances no assumed			-.136	223.203	.892	-.02115	.15572	-.32803	.28573
Stage 3	Equal variances assumed	.002	.964	3.011	224	.003	.45814	.15218	.15825	.75802
	Equalvariances no assumed			3.012	223.421	.003	.45814	.15209	.15843	.75784
Stage 4	Equal variances assumed	.201	.654	2.043	224	.042	.30138	.14754	.01064	.59211
	Equalvariances no assumed			2.044	223.018	.042	.30138	.14743	.01085	.59190
Stage 5	Equal variances assumed	1.765	.185	1.419	224	.157	.23214	.16364	-.09033	.55461
	Equalvariances no assumed			1.420	222.486	.157	.23214	.16349	-.09005	.55434
Stage 6	Equal variances assumed	6.301	.013	3.757	224	.000	.65805	.17515	.31289	1.00321
	Equalvariances no assumed			3.765	212.377	.000	.65805	.17476	.31356	1.00254

Table 3

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Note. The t test and the Levene test show that in both groups, public and private workers, equal variances are accepted in stage one to stage five because their p-values (0.581 , 0.850 , 0.964 , 0.654 , 0.185) are greater than 0.05, only the p-value (0.013) of stage six is inferior than 0.05 and equal variances is rejected . Thus, accepting that the means coincide stages one, two and five, because their values p (0.194, 0.892, 0.157) are higher than 0.05. Conversely, we reject that the means match in stadiums three, four and six, as their p values (0.003, 0.042, 0.000) are less than 0.05.

Conclusions

The conclusion of this investigation, on the equality of means of moral judgment between public and private workers, shows that the ability to take decisions and make judgments about what is good or bad is the same in both roles. Showing empirical evidence, supporting the view that the public and private sectors share basic values and norms, therefore moral behavior is very similar (Van Der Wal & De Graaf, 2006).

Regardless of public or private context, efforts should be an ethical and moral or ethical education (Mobleyx, 2004) in order to develop and improve the ability to perform moral evaluations in the organizational context is critical for such capacity, both for the individual's moral behavior that influences its own to identify and be receptive of good or bad behavior of others (Leavitt and others, 2010).

Although there are some discrepancies to observe the different social justice normativities for both types of workers, such differences are minor. This finding contradicts results of other research, which shows that the moral judgment of private workers is significantly higher than the public (Robles, 2012).

It follows that the results of moral judgment are observed peculiarities are not generalities, and that this judgment is not static in any environment, but depends on its distinctive details (Van Vuggt, Hendriks, Stams, & Van Exter, 2011), which wonders about employment flexibility of the different stages of moral judgment in unequal contexts (Krebs & Denton, 2005).

On the other hand, it is possible that some populations due to cognitive distortions obstruct proper assessment and in some cases the moral judgment competence is under-or over assessed, furthermore such competition is independent of public or private role, of age, intelligence and type of education (Van Vuggt , Hendriks , Stams, & Van Exter, 2011). This investigation showed that the differences in age, educational achievement, and work experience, between public and private workers, did not involve a difference of moral judgment in the two types of workers.

References

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences (2a edición).* Hillsdale NJ: Erlbaum.

Gibbs, J., Basinger, K., Grime, R., & Snarey, J. (2007). Moral judgment development across cultures: Revisiting Kohlberg's universality claims. *Developmental Review, 27*(4), 443-500.

Gormley Jr, W. (2001). Moralists, Pragmatists, and Rogues: Bureaucrats in Modern Mysteries. *Public Administration Review, 61*(2), 184-193.

Jepsen, D., Hine, D., Noblet, A., & Cooksey, R. (2009). Employee ethical attitudes: contextual differences and impact on perceived quality of leadership relationships. *International Employment Relations Review, 15*(1), 39-52.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Kohlberg, L. (1958). *The development of modes of moral thinking and choice in the years ten to sixteen.*Chicago, IL: Disertación doctoral no publicada, Universidad de Chicago.

Kohlberg, L. (1964). Development of moral character and moral ideology. En M. L. Hoffman, L. W. Hoffman, M. L. Hoffman, & L. W. Hoffman (Edits.), *Review of Child Development Research* (Vol. I, págs. 381-431). New York: Russel Sage Foundation.

Kohlberg, L., & Hersh, R. (1977). Moral development: A review of the theory. *Theory Into practice, 16*(2), 53-59.

Krebs, D., & Denton, K. (2005). Toward a More Pragmatic Approach to Morality: A Critical Evaluation of Kohlberg's Model. *Psychological Review, 112*(3), 629-649.

Leavitt, K., Reynolds, S., Barnes, C., Schii, Schlipzand, P., & Hannah, S. (2010). Different hats, different obligations: plural occupational identities and situated moral judgments. *Academy Of Management Journal, 55*(6), 1316-1333.

Lind, G. (1999). *Una Introducción al Test de Juicio Moral (MJT).*Constanz: Autor.

Lind, G. (2004). The meaning and measurement of moral judgment competence revisited – A dual-aspect model. En D. Fasko, & W. Willis, *Contemporary Philosophical and Psychological Perspectives on Moral Development and Education* (págs. 185-220). Cresskill NJ: Hampton Press.

Lind, G. (12 de Enero de 2008). *The Moral Judgment Test.*Recuperado el 7 de Abril de 2008, de http://www.uni-konstanz.de/ag-moral/mut/mjt-certification.htm#certified_versions

Piaget, J. (1974). *El criterio moral del niño.*Barcelona: Fontanella.

Lind, G. (2009). Favorable Learning Environments for Moral Development – A Multiple Intervention Study With 3.000 Students in a Higher Education Context. *Annual conference of AERA.* San Diego.

Lind, G. (2011). Promoviendo las competencias morales y democráticas: Expresarse y escuchar a otros. *Postconvencionales, 3*, 26-41.

Mobleyx, S. (2004). Public Administrative Ethical Decision-Making. Conference Papers -- Midwestern Political Science Association, N.PAG. . *Conference Papers -- Midwestern Political Science Association*, (pág. N. Pág).

O'Fallon, M., & Butterfield, K. (2005). A Review of The Empirical Ethical Decision-Making Literature: 1996-2003. *Journal Of Business Ethics, 59*(4), 375-413.

Robles, V. (2012). Complejidad De La Moralidad Organizacional: Una Discusión Sobre Diferentes Roles. *Sotavento, 20*, 106-117.

Schillinger, M. (2006). *Learning environment and moral development: how university education fosters moral judgment competence in Brazil and two German-speaking countries.* Aachen: Shaker Verlag.

Scott, E., & Jehn, K. (2003). Multiple Stakeholder Judgments of Employee Behaviors: A Contingent Prototype Model of Dishonesty. *Journal Of Business Ethics, 46*(3), 235-250.

Van Der Wal, Z., & De Graaf, G. (2006). The Bureaucrat, the Businessperson, and Their Perceptions of Each Other's Value Orientation. *Public Integrity, 9*(1), 45-62.

Van Vuggt, E., Hendriks, J., Stams, G., & Van Exter, F. (2011). Moral judgment, cognitive distortions and implicit theories in young sex offenders. *Journal Of Forensic Psychiatry & Psychology, 22*(4), 603-619.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Article **ECORFAN Journal-Mexico**
FINANCE December 2014 Vol.5 No.12 1010-1018

Financial Information for the permanence of the Agri-food Smes

CERVANTES- María*†`,ALVARADO- Sergio`, GALLARDO- Luis``

`Universidad de Occidente. Avenida de las Americas 9-84, Quetzaltenango, Guatemala
``Research National System.

Received April 01, 2013; Accepted October 29, 2013

In México, the small and medium-sized enterprises play a relevant role in the economic structure. However, the SMEs mortality rate is high and is attributed to several factors, among which include: no or weak planning, poor access to financing, constraints arising from lack timely financial information, and suffer from a suitable organizational structure.This is a theoretical work, done within the framework of a doctoral research, taking as reference the analysis of Financial Reporting Standards issued by the Council for Research and Development of Financial Reporting Standards (CINIF, 2012), the International Financial Reporting Standards for SMEs (2009), and complementary researches of Kalantaridis Vassileb (2011), Aragon & Rubio (2005), Lacayo & García (2011), Julien (2011) and Segovia & Huerta (2011). This paper includes the results of an exploratory study which let find the importance given by SMEs to the accounting aspect. The first target is to analyze how the SMEs in the food industry use information derived from the accounting records and make decisions to strengthen the permanence in the market. It was found that 66.7% of SMEs surveyed do not have a catalogue of accounting accounts, so do not have accounting or financial information to analyzed and make right decisions about the business.

Financial Information, SMEs, Food Industry

Citation: Cervantes M, Alvarado S, Gallardo L.Financial Information for the permanence of the Agri-food Smes. ECORFAN Journal-Mexico 2014, 5-12: 1010-1018

*Correspondence to Author (email:maria.cervantes@udo.mx)
† Researcher contributing first author.

Article ECORFAN Journal-Mexico
FINANCE December 2014 Vol.5 No.12 1010-1018

Introduction

The SMEs in the food industry have a very important role in the Mexican economy, generated employment and participate on provide food. The National Statistics Board of Economic Units (DENUE) has registered to May 2013, 3738 companies of this type. Morales & Najar (2011) note that SMEs face serious problems such as low administrative capacity, lack of management expertise and low innovation.The Economic Commission for Latin America and the Caribbean (2010) mention that SMEs need to survive government financial support and unfortunately this support is not for all.

In a Business Victimization Survey prepared by the INEGI, businessmen mention that the main problems they face are insecurity and crime (28%), the low purchasing power (19%), lack of government financial support (18%), the tax burden (16%), the paperwork with the government (11%) and corruption (8%). The above problems reflect in the continuing business closures across the country. Researches conducted by CONCAMIN (2012) show that one hundred percent of the start ups companies, at the end of the first year only remains fifty percent, at the end of the year fifth remains only twenty percent.

Following last researches, we can see that is a high rate of companies that go out of market, and colateral losses are not possible to quantify, as well as aspects that directly impact the entrepreneur pocket, like time loss and negative potential consequences from employers frustrated.

To stay in business, enterprises require information as a basis for decision making. Globalization, continuous changes on the environment and competition, forces SMEsto use systems that generate timely information for decision making. This is the reason why needs information have evolved.

In 2002 was created in Mexico, the Mexican Board for Research and Development of Financial Reporting Standards, with the aim of developing financial reporting standards that favor international convergence. These financial reporting standards are considered the minimum requirement of accounting techniques.

The International Financial Reporting Standards for SMEs are published in 2009 and notes that the objective of financial statements is to provide information about the financial position, performance, the cash flows and financial management. The qualitative characteristics of financial statements obtained by the application of International Financial Reporting Standards for SMEs are understandability, relevance, materiality, reliability, substance over the form, prudence, completeness, comparability, timeliness and cost-benefit balance. However, these standards are not born with the character of compulsory and Financial Reporting Standards applied in Mexico only represent a minimum requirement of accounting techniques.

The Ministry of Economy, in the stratification criteria of companies published in the Official Gazette of 2009, are recognized that industrial SMEs have eleven employees as minimum and until two hundred and fifty employees as maximum; and revenues goes four to two hundred fifty million pesos.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

When are constituted only as individuals, tax obligations depend on the regime under which taxed.

In accordance with Mexican tax law, individuals are taxed at the rate of small taxpayers (this regimen will disappear in 2014), by now are not required to keep accounts or accounting records , in some cases, their only concern is to fulfill its taxes. In a research conducted by Segovia and Huerta (2011) found that a third of SMEs in Mexico do not have accounting records so you do not have information that may be considered as a basis for decision making.

The SMEs in Mexico have very specific characteristics and as objects of study represent a major challenge by its heterogeneity. Among its main features can be listed that has a flexible structure that allows them to adapt to the changing environment, a low level of specialization, reduced size, informal coordination mechanisms and simple information systems (Fong, 2008). Cleri (2007) notes that a quick response to the environment, allows them to gain competitive advantage, however, this adaptability is wasted, otherwise, mortality rate of SMEs could be lower.

For Hernández (2012) the capital mix, the labor force, and management are focused on producing goods and services, increases employment resources and allows to the growth and development of enterprises. The administrator has a close relationship with the accounting and financial information, and their decisions are based on economic performance which although are derivatives of administrative management, are the result of the accounting process too.

The objective of this paper is to analyze the importance of the use of information derived from the accounting records for decision making in small and medium enterprises in the food industry and the use of it to build the permanence in the market. First, a survey was conducted in a sample of the Guasave City, Sinaloa; in order to know who are those use an accounts catalogue to the accounting and the importance given to the accounting of business transactions andthat allows them to obtain timely information for decision making.

Subsequently, will be applied interviews to fully understand how SMEs in the food industry are organized, which kind and specialization degree of human resources are require to meet the information needs of users for proper decision making. Following the above reasoning, the question arises,

Does carry out accounting records enabling to SMEs have adequate financial information for decision making?

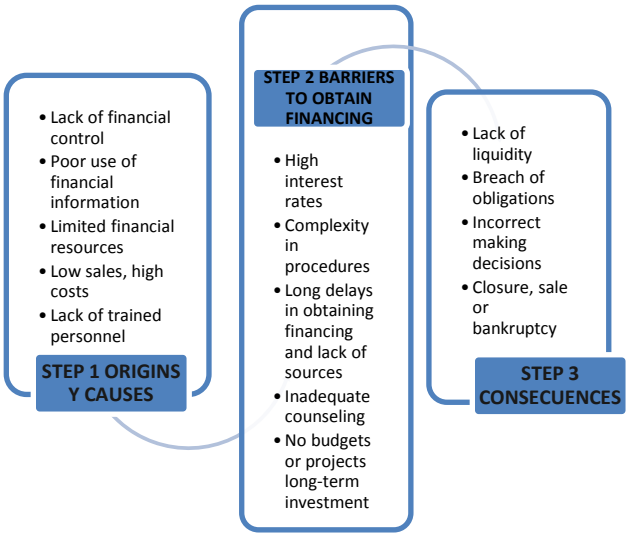
Financial Information

The Financial Reporting Standards (2013) define financial information like quantitative, and descriptive; should showing the position and financial performance of an entity in order to target the general userin making decisions. As part of the information needs of the general user are mentioned evaluation of the financial economic behavior, the ability to optimize their resources and viability as a going concern. Financial statements should be useful for making investment decisions, financing, assessing the ability of the entity to generate resources and distinguish the origin and characteristics of these resources, the ability to distinguish growth and cash flow generation, among others.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

In a world of rapid change, accounting can not be excluded, therefore, has been evolving, always aiming to provide useful decision-making information. However, in a study conducted by Lacayo & Garcia (2011) on the main problems that hinder the permanence of Mexican companies, found that poorly used financial information which generates incorrect decisions. Additionally mention problems related to the financing, management of resources, reduced sales and increased costs as the source of problems; within the obstacles to obtaining financing said the high interest rates, terms and the difficulty of getting up to the closure, sale or bankruptcy of the company.

Evolution of the financial problems of Mexican companies



Graphic 1

Source: Authors. Adapted from Lacayo and Garcia (2011)

Cervantes and Gallardo (2012) note that decision making is an important factor of economic and financial information as it is going to facilitate, through methodical analysis, surpass the achievements by making appropriate decisions.

Knowing the financial information for prior years can trace the path that you must go for higher profits from previous years and that the company can grow having defined parameters to enable the evaluation of progress. Despite the limitations of the use of accounting information may be the most accessible source of information (Mateos, Marin and Segui, 2011).

Financial information must be structured and managed according to the problem to be solved according to the sector to which the company (Pacheco, 2011) so as to facilitate the planning and achievement of business goals without neglecting belongs environment in which the company operates.

Success or business failure

To understand the business success you must know the meaning of failure. To Mosqueda (2008) failure is when exists non-compliance of financial objectives issued from management, the corporate bankruptcy is cancer of the economy, when businessman can not sell their products on the market, is because the company did not understand the signs indicating that business failure was imminent. Justo (2007) notes that it is important to analyze the failure moments to obtain additional knowledge and create value without dying in the attempt.

Mateos, Marin and Segui (2011) set business failurethrough a literature review ofvarious researches about business failure and claim that the orientation is towards the elements of financial statements, to doing a comparison of insolvent companies with solvent companies, the objective of the study is oriented to models of business about prediction of business failure.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

The definitions of business success are many and varied, the most important are related to obtaining sustainable benefits (Wernefelt, 1984), higher performance than competitors (Aragon and Rubio, 2005), sustentables gains (Collins, 2011), getting strong financial returns (Kalantaridis, Vassileb and Fallon, 2011), performance improvement on global sense (Cebada, 2008), efficient and effective performances (Ríos, Ferrer and Regalado, 2010), a long-lived business and with quality of life too (Restrepo and Rivera, 2006), the power lies in the structure of the company and to facilitates the achievement of its purposes (Greiner, 1994), Garcia (2006) using models of balanced and sustainable growth.

SAGE (2006) states that the difference between success and failure lies in making decisions regarding: focus on the needs and experiences of consumers, understand and adapt to change and assimilate and learn from past experiences . For this article, success is the permanence of the companies in the market by obtaining sustainable yields that facilitate the growth and development of the company, in addition to enabling the return on investment to the owners without affecting the financial future of the same.

Business permanence

One of the most important goals of an organization is to survive (Morales, 2002), however, for Collins (2012) companies can improve with basis their reality, although could be unfavorable, looking to do things better than the competition and get economic benefits through people appropriate for the organization. Dominguez and Rosas (2010) conclude that culture, strategic planning and entrepreneurial orientation are the leitmotif for the business permanence.

Aragon and Rubio (2005), derived from an investigation about 1201 Spanish SMEs mentioned that obtaining competitive advantages allows companies be profitable in the long term, and lets them achieve the survival and success.

On the other hand, Rivera (2007) conducts a study and identifies changes required in the organizational structure andfinancial performance of the companies that survive. To Capelleras and Kantis (2011) companies can use growth as a strategy to stay on the market and argue that it is a sign of vitality and strength.

For this article, the permanence is that the company achieves its objectives and the ability to remain a going concern, that is, minimizes uncertainty about its continuity in the market.

Methodology

First, we reviewed the related literature about the subject of research and subsequently we collect the information. The scope focuses on achieving the objective to explore the reality of the SMEs of Guasave, regarding the register and use of financial information. This research is descriptive because it collects information about how SMEs used its financial information.

The design of the research was not transversal since information was collected only once, using as an instrument of data collection, a survey applied to leaders or owners of SMEs considered as sample.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

We considered the total population constituted by the number of business registered on the National Statistical Directory of Economic Units (DENUE) of the National Institute of Statistics, Geography and Informatics (INEGI) and as selection criteria these companies, should be locate in the county seat of Guasave, Sinaloa, Mexico.

The total number of companies registered in Guasave on the DENUE is 10,329. For this research was considered only companies with 11 employees as minimum and 250 as maximum, which gives us a total of 624, of which were removed government agencies, corporations and associations, branches and subsidiaries as well as the parastatals companies, the final population considered was only 195 SMEs.

To determine the sample statistical we used the formula for finite population with an error level of 0.06 and a 95% confidence level was applied, the particular sample was 112 companies. The survey was applied to the total sample, but we do not considered business with less than ten employees and with less of four million income pesos, according to stratification of enterprises of the Ministry of Economy published in the Official Gazette in 2009, which ranks companies as micro and are not the subject of this investigation. However, we add to the sample, companies that meets at least one criteria, on the complement we add 45 SMEs. The results of the Micro business, we will analyze on other paper later, because have very different characteristics.

Main findings

Of those surveyed managers, 31.1% are family, 8.9% are not family related and the rest are the owners. 48.9% of companies belong to commercial sector , 35.6% belong to industrial sector,and the rest belongs to other services. For analysis of the number of employees and the income range we used the contingency table generated by software SPSS Ver 20, which shows below:

Contingency Table
Classification by number of employees and revenue range

		Revenue Range			Total
		Until $4 Mills	From 4.01 until 100 millones	From 100 to 250 millones	
Employees	0 to 10	0	11	0	11
	11 to 30	5	9	1	15
	11 to 50	8	6	0	14
	31 to 100	0	3	0	3
	51 to 250	0	1	0	1
	More than 100	0	1	0	1
Total		13	31	1	45

Table 1

Source: Research results. MACR (2013)

As can be seen in the previous table, we found 11 companies with a total of less than ten employees and a rank of income that fluctuate from 4.01 to 100 million pesos,5 business in a rank of eleven to thirty employees, and earning less than four million pesos, we found too, nine business with revenues of 4.01 to one hundred million pesos, and we found, only one business with income above 100 million without exceeding the 250. In the commercial and services sectors with a range from 11 to 50 employees and less four million income can we list eight companies and with over four million pesos but less than 100, we found six companies.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Only found three SMEs with revenues ranging from four to one hundred million pesos of revenues, in the same income range we found only one business but belongs to the industrial sector, and in the service sector we found only one business too but with over a hundred employees even in the same income range.55.6% of companies surveyed have more than fifteen years operating and 20% is in the range of six to ten years, 11.1% has less than five years operating and 13.3% ten to fifteen year, as we can note in Table 2.

Years of Operation of the companies surveyed

Operating years

		Frequency	Percentage	Percentage valid	Percentage accumulated
Valid	0 to 5 years	5	11.1	11.1	11.1
	6 to 10 years	9	20.0	20.0	31.1
	10 a 15 years	6	13.3	13.3	44.4
	More than15 yrs	25	55.6	55.6	100.0
	Total	45	100.0	100.0	

Table 2

Source: Research results. MACR (2013)

To analyze the accumulated managerial years by managers and business propietors, for the analysis we chose a descriptive study using a mean statistics, Namakforoosh (2010) notes that serves to obtain the sum of the values divided by the number of observations. In this case, the arithmetic mean is at 12.74 which represents the average of years old of all managers and leaders of the sample, as shown in Table No. 3

Mean of accumulated managerial years by managers and business propietors

	N	Min	Max	Mean	St Desv.
Accumulated managerial yrs	45	0	40	12.74	9.063
N valid (accord list)	45				

Table 3

The above table shows that those in charge of SMEs are not people without experience, otherwise has accumulated more than twelve years of experience, and which is reflected in the managed companies. The core of this work is summarized in the following contingency table, taking into account whom makes decisions in the company, if they have a mission for define the objectives of the company in the long term, and if they have a catalog of accounts evidencing the obtaining of financial information for decision making.

Table contingency for decision-making, business mission and catalogue of accounts

Decision Making, business mission and catalogue of accounts						
			Mission			
Catalogue of accounts			Mission, no published	Mission published	mission, not defined yet	Total
Catalogue of account	Decision Making	Only Proprietors	6	7		13
		Manager	1	0		1
		Others	1	2		3
	Total		8	9		17
No catalogue of accounts	Decision Making	Proprietors Only	11	6	10	27
		Manager	1	0	0	1
	Total		12	6	10	28
Total	Decision Making	Proprietors Only	17	13	10	40
		Manager	2	0	0	2
		Others	1	2	0	3
	Total		20	15	10	45

Table 4

From the information provided by the forty-five companies, twenty of them has a mission however, this is not published, so the people within the company are not familiar with the objectives of the company's long-term and neither are involved on the enforcement planning . On fifteen of them has published its mission, only in ten has not been defined mission. Regarding the decision-maker, forty of them said that only the owner is whom decide.

However, they consider on account the views of middle managers and workers involved. The companies thatmake its financial information are around 37.8% and handled the catalogue of accounts, which means that the rest does not meet accounting standards and much less are used the financial information for making decisions.

Importantly, 75% of those surveyed said that financial information is used exclusively for the fulfillment of tax obligations and it is not always possible to do so in a timely manner as the company is the mainstay of the family support, so give priority to meeting the basic needs of the family and then to the payment of taxes. 85% are registered in any of the tax systems of the Tax Administration Service (which was not verified), from which 32% of companies have an accountant employee, 53% used the services of accountants external and the rest are involved in the informal economy.

References

ARAGÓN, A. y RUBIO, A. (2005). *Factores explicativos del éxito competitivo: el caso de las Pymes del estado de Veracruz.* Revista Contaduría y Administración. No. 216. Mayo-Agosto.

BARLEY, Sherbi (2008). "*Éxito sostenido en la organización ¿Reto inalcanzable?".* En Revista Éxito Empresarial. No. 77. Pp. 1-4.

CERVANTES, María y GALLARDO, Luis (2012). Estrategias de pemanencia de Pymes: Entre la viabilidad y el riesgo. EnM. Ramos, F. Miranda (eds.) Optimización-Estoscástica-Recursica-Coherente-Sistémica y sus variantes (probabilidad, econometría y estadística aplicada). Temas Selectos de Optimización. Volumen 1. Pp. 407-424.ECORFAN. Santiago de Compostela. ESPAÑA.

COMISIÓN ECONÓMICA PARA AMÉRICA LATINA Y EL CARIBE (2010). *Políticas de apoyo a las Pymes en América Latina. Entre avances innovadores y desafíos institucionales.* Naciones Unidas CEPAL. Santiago de Chile.

CONFEDERACIÓN DE CÁMARAS INDUSTRIALES DE LOS ESTADOS UNIDOS MEXICANOS. (2012). *Diversificar motores: El papel de las Pymes.* Revista Pulso Industrial. Año 5. Núm. 56,

GARCÍA R. Constantino (2006). *Factores determinantes de la sostenibilidad del crecimiento empresarial.* In Pecvnia. No. 3, pp. 21-44

GREINER, Larry (1994). *Evolution and Revolution as organizations grow.* .En Mainiero L. and Tromley, C. Developing Managerial Skills in Organizational Behavior; Exercises, Cases and Readings*Englewood Cliffs, NJ: Prentice Hall. 2d. ed. Pp. 322-329*

LACAYO, O. María y GARCÍA, P. Sara. (2011). *Principales problemas que impiden la permanencia y el crecimiento de las pequeñas y medianas empresas.* Pp. 1-22. Readed from the web:
personales.ya.com/aeca/pub/on_line/comunicaciones_aal2011/…/62c.pdf

JULIEN, Pierre .A. (2011). Desarrollo de las pymesen Administración de Pymes: Emprender, dirigir y desarrollar empresas. Jacques Filion, Luis; Cisneros Martínez, Luis Felipe y Mejía Morelos, Jorge H.Pearson Educación, México 2011.

KALANTARIDIS, C., Vassilev, I., y Fallon, G. (2011). *Enterprise Strategies, Governance Structure and Performance: A Comparative Study of Global Integration.* Regional Sudies. February 2011;45(2):153-166. Available from: Business Source Complete, Ipswich, MA. Accessed August 11, 2012.

MATEOS Ronco, A.; MARÍN Sánchez, Ma. Del M. y SEGUÍ Mas, E. (2011): Los modelos de predicción del fracaso empresarial y su aplicabilidad en cooperativas agrarias", CIRIEC-España, Revista de Economía Pública, Social y Cooperativa, no. 70, abril, pp. 179-208.

MOSQUEDA A. Rubén M. (2008). *Indicadores del fracaso en las empresas mexicanas. Modelo ponderado de valoración del riesgo.* Instituto Mexicano de Ejecutivos de Finanzas. México

NAMAKFOROOSH, Mohammad N. (2010). Metodología de la Investigación. Second Edition.Editorial Limusa. México

RIOS, M. Sanjuana, FERRER, G. Julián y REGALADO, H. Rafael (2010). La estrategia y la ventaja competitiva elementos esenciales para el éxito de las empresas mexicanas. In Revista Panorama Administrativo. Año 4. No. 8. Pp. 3-26

SAGE (2006). *Business Lifecycle: Survival of the fittest. A SAGE CRM white paper.* SAGE Ireland

SEGOVIA, M.L. y HUERTA, Esperanza (2011). Contabilidad enlas pymesen Administración de Pymes: Emprender, dirigir y desarrollar empresas. Jacques Filion, Luis; Cisneros Martínez, Luis Felipe y Mejía Morelos, Jorge H.Pearson Educación, México 2011.

SIMON, Hebert A. (1988) El Comportamiento Administrativo. *Estudio de los procesos decisorios en la organización administrativa.*Aguilar Buenos Aires.

WERNEFELT (1984). A Resource Based View of the Firm, *Strategic Management Journal*, vol.5, pp. 171-180.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Article **ECORFAN Journal-Mexico**
ADMINISTRATION December 2014 Vol.5 No.12 1019-1034

Strategic Orientation in students with high academic avarage in the University of San Francisco Xavier de Chuquisaca

RAMÍREZ- Ivonne †& PALMA- María*

Universidad de San Francisco Xavier de Chuquisaca.Junin esq Estudiantes

Received April 18, 2013; Accepted November 31, 2013

To analyze the preference in the learning approach of students with high academic performance, at the University of San Francisco Xavier de Chuquisaca. Subjects and methods. The study was conducted on 392 students with high and high average academic performance of the faculties of health sciences, social, economic and technology at University of San Francisco Xavier [Sucre, Bolivia]. The questionnaire ASSIST Entwistle [1993] was applied, which evaluates the approaches or approximations of students to studying. SPSS V.21 with Chi square, Student T and Crosstabs was used in the statistical processing. Results. The preference for the study approach differs by gender; there is more preference for the strategic approach on females and for deep approach on males. This increased preference for strategic approach shows the use of organizing techniques of study, awareness to the demands of the tasks, achievements and effectiveness monitoring and, in the case of males the use of evidence and interest in ideas. Conclusions. The learning approach has important gender differences and their relationship to high performance is significant. It shows the need to think of a differentiated pedagogy that enhances the techniques that each group applies.

ASSIST. Learning approaches, Academic performance

Citation: Ramírez I, Palma M. Strategic Orientation in students with high academic avarage in the University of San Francisco Xavier de Chuquisaca. ECORFAN Journal-Mexico 2014, 5-12: 1019-1034

*Correspondence to Author (email: mepalmo@hotmail.com)
† Researcher contributing first author.

Article ECORFAN Journal-Mexico
ADMINISTRATION December 2014 Vol.5 No.12 1019-1034

Introduction

The present study is based on one of the most international concepts the “strategic learning”. In the academia both researchers and educators have a daily challenge the how to increase the level of ownership, maintenance and implementation of a specific content and approaches of how to learn and teach in this new historical period.

Begin by noting that the national university context have been dedicated numerous events to the discussion of how to optimize the process of facilitating learning; However, some authors (1,2) have failed passive learning methodologies, focusing on the teaching and learning process from the traditional role of keynote presentations with the culture of sitting in classrooms, passively listening to the lesson, take notes , absorb, repeat and take periodic tests to certify their learning.

Educators need to incorporate into our daily lives based on good scientific information, how the brain learns, (2) in an attempt to learn more and go deeper into the brain theory at this particular historical period, where changes in access and provision of information are plentiful.

From various theories of learning psychology has sought to explain how individuals learn the content for its application and from the perspective of psychophysiology, the term learning refers to the process by which experiences change the nervous system and therefore, the behavior. (3); also assumed (4) that from a procedural point of view is not possible to separate learning memory, nor it is possible to make a distinction within the neuronal circuit.

From the theories of constructivist psychology, when talking about learning, one of the most cited concepts is the "learning to learn" (5) learning and memory are complex processes for more than a century challenge both researchers and teachers to understand the mechanisms involved.

The study presented is based on the constructivist approach that learning is a process of making meaning where the student is considered as an active and inventive that seeks to construct the meaning of the contents, taking a leading, independent, self-regulated and effective role (6) that knows how to plan, regulate, evaluate and optimize their cognitive processes to respond to an emerging demand for a context.

The concept of performance and knowledge acquisition must be profoundly transformed since it is known that both the strategies and skills are related to learning to learn, whereas in this process the education system is not neutral and favors the development of more reflective theoretical students and more practical. (7)

The term strategic learning (8) in the global context appears as one of the educational psychology principles underlying the new arena of higher education because as important as learning what is certain is, that learning, improving contents procedures and strategies to continue learning throughout life. It is known that effective thinkers, put least attention to determined cognitive performance in relation to the underlying structure, mentally process and strategies that enable such achievements.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

This is why it is very important to know what strategies students apply to guide more accurately the teaching and learning process.

In the case of Bolivia, higher education has gone through more traditional paradigms of Pavlovian classical behaviorism in the IXX century, through the instrumental models of SkinnerXX and Watson, later in this century venture into more models as Piaget and Ausubel constructivist and social of Vigotsky including some of its postulates that are currently holding the Act of Education Reform Elizardo Siñani and Avelino Perez (9).

In its wide dimension process involves learning as personal, not personal and context in which it develops components. In that sense it is stressed that learning (10) turns out to be a complex, diversified, highly influenced by factors such as the developmental characteristics of the learner, the situations and the socio - cultural in learning, content types or aspects of reality which must appropriate, the resources available and the level of intentionality, consciousness and organization among others; such factors are important to analyze, students with effective performance that makes students distinguish with the ineffective.

This concept considers the involvement of several categories of analysis and this research seeks to deepen the role that have the processing and organizing information; fact that is gaining much importance and therefore the attention of researchers has been directed to analyzing the activities learn, retain and recall.

It was said that traditional teaching at the University is aimed at imparting knowledge (1.2) relating to a particular subject and learning, most often rote (12). For domestic authors (13) university training processes have been characterized by interest focus on the objectives and content in the underlying processes, rather than on the processes involved in it.

Note that universities in the country in general management in 2011 and 2012 have made significant reforms in the case of the University of San Francisco Xavier de Chuquisaca, in 2011, has put in place a new academic model (14), based on a socio-systemic approach outlined in chapter IV on specific targets for training stresses the importance of incorporating appropriate methods. Thus the findings of the various events of higher education (15,16, 17) indicate that oriented and creativity as the linchpin to promote self learning and educational innovation generation must improve education. (18)

The perception of context is very important for several authors (10,11, 20, 22) and with the Entwistle model (25) shows how different learning environments can interact with the characteristics of learners affecting learning and guidance academic results, and the types of strategies that apply to this learning approach will be different

In attetion to the different studies related to this ítem, some variables are followed by Gutiérrez (2008) (26): the academic goals, qualifications, self-concept, academic achievement, gender, conceptions of learning and motivation among others.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

During the profesional formation according to the students who are coursing will be a greater verbal and numerical process, but studies are inconclusive, considering them the most important.

Entwistle and Tait said, cited by Marin (20) that there are differences in the learning environment preferred among students of different careers, or how the assessment preferred by students is related to the orientations of study, strategies or processes of study and motivation.

Regarding to the hypothesis of the approaches applied to academic performance studies shows that there exists significant correlation between deep and achieving approaches and the academic qualifications (69) Gargallo (70) Valley (71).

To Beltrán and Barriga (72) there is a relationship between approaches to learning and academic performance. Deep learning (meaningful guidance approaches) with high scores (high yield) surface learning approach to low scores (low performance) is associated.A significant relationship between low scores with superficial approaches and high scores with deeper approaches.

The background in terms of academic performance and learning approaches are also different, they emphasizes to Abalde (73) approaches orientation to meaning and understanding, get a good academic performance to Broc (56) the 2011 that best discriminated between performance groups (high, medium and low) are learning variables such as time management, effort regulation and metacognitive self-regulation. De la Fuente (74) there is a positive relationship between deep strategy with the procedural performance.

To Salmerón (44) achievement goals approximation and self-regulation strategies are related to academic performance. Students from health sciences and engineering have high scores on achievement goals and strategies for self-regulation approach. Oriented approaches are correlated with the middle and high academic achievement.

Barca; (69) The Source (74) noted that there were higher ratios between deep focus and self-awareness for self-regulated learning and academic achievement, to Pérez Villalobos (75) results showed low ratios between deep learning approach and strategies for resource management and organization of time, but other authors highlight reasons associated with rewards, such as finding a good job or a good social position, maintaining positive relationships with the use of cognitive and self-regulatory strategies. Valle et al. (76).

Therefore, this author (54) states that academic results are more related to achievement goals, characterized as the concern of the student for the performance itself, with goals of learning, characterized by behaviors aimed at improving knowledge and desire to learn, but that is not the main objective of achieving good academic results.

To Broc (56) a higher performance, a lower incentive of a negative base, the negative feelings and the emotions related to oneself related to the task and visualization of negative consequences in a failure situation, are bigger.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Cabanach (54) in their studies says thart there is more influence of the achievement goals and the external attributions are the internal attributions and the academic self-concept, belief that academic results are due to internal factors (ability, effort) and perceived as competent have a direct, positive and meaningful way on academic performance.

To Broc (56) there is low correlation between some volitional variables and academic performance through its direct relationship with metacognitive strategies that supposedly mobilized and put into operation.Following these results (54) also influence the cognitive performance, variables such as metacognitive strategies; and other motivational variables such as motivational strategies and motivational regulation strategies.

Metacognitive variables are correlated with performance, such as time management and effort regulation, and incentives carryforwards, which constitute a volitional variable. Broc (56) there are no differences in volitional variables

Note that students does not adopt prototype approaches. The characteristics that define this group can probably have some correspondence with some studies on motivation called "work avoidance goals" and avoidance motivation, which is a type of motivational orientation identified in academic contexts that differs on two types of targets usually not considered (learning and performance). Valle et al. (40).

To Salas (66) high academic achievement would be associated with the strategic focus and deep, Valle, 1997 (40) emphasizes that the deep approach is related to intrinsic motivation. But Salim (77) preference for deep T approach does not necessarily generate good academic results and but stresses could make tasks with deep approaches, higher expectations of success in the various tasks and show academic achievement levels significantly higher.

Deep learning approaches and achievement tend to be associated with high academic achievement. Abalde 2009 (73) noted that in this study and their learning processes study, obtained a strong positive and significant correlation with high academic performance but also is said that (69) pupils in average yield and high motives and strategies adopted deep and achievement.

Oriented approaches to the meaning or understanding with one goal: obtaining a good or high academic achievement and a lesser extent, the superficial approach when orientation is related to poor performance or academic performance. There is an inverse relationship in the motives and strategies of deep and surface learning used by students in their study and learning processes. Abalde (73).

Cano (43) notes that there are higher scores by students with profound processing styles (learning significantly, comparing, conceptualizing ...) and top scores for the students with methodical learning style (learning in an organized manner, using classical study skills). Abalde (73).

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Valle et al suggested. (76) finding a positive social value may be a reason to promote a strategic implication. There are other goals that promote involvement in the study, as seeking approval, or the intention to highlight the strengths and own abilities.

Broc (56) indicates that the differences in these variables are given between the group of higher performance with the medium and low, but not between the medium and low performance, which suggests the importance of the proper functioning of these variables in the highlights and do not with volitional variables that do not discriminate between the three groups of students performance.

For other authors as Hernandez (67) note that in the deep approach there is a clear consistency between the motives and strategies used, some college students with profound motivation could make use of surface strategies if the demands of the institution require them, students with superficial motivation can use deep strategies with subsequent help from the teacher.

Regarding the hypothesis of implementing the approach and Salas gender (66) indicates that men are more related to the strategic approach and the clearer while women relate more to the deep approach, which increased in both sexes with age, and Broc (56) states there are no differences in learning Barca variable (42) highlights multicultural consistency and coherence between surface approach and academic underachievement and Abalde (73) embodying indicaque the students with superficial learning achieved academic ow performance.The intention can be to understood (deep focus), but the evaluation fosters change in the approach to adopt (superficial). Salim (77).

Salim (77) emphasizes the value of cultural context what appears as 'surface' is achievement and that would explain a high value of superficial motivations and strategies of top performers.González et al., (54) suggested that shallow and deep focus are exclusive and planning is a strategy that does not correlate with shallow focus Perez (75) nor with external regulation Camarero. (27).

Regarding the superficial approach Salim (77) emphasizes that the transition in style deep surface could be explained as an attempt to meet the demands and perceived as an improvement in their learning strategies, the evaluation and accreditation of knowledge. Students adjust their approach according to the demands (strategic adaptability).

Salmeron (44) suggests that future studies should examine the influence of contextual variables on achievement goals, self-regulation strategies and academic performance. Note that all strategies for learning are high correlations with approaches / styles meaning orientation. Support strategies and coding which gets higher coefficients. Barca (42).

Regarding the metacognitive self-regulation also correlated with stress reduction actions, these being larger and more effective as this increasing and vice versa. Broc (56).

Metacognitive self-regulation is negatively correlated with negative incentive bases. It is likely that when there is an adequate self-regulation does not appear in their cognitive and affective system such self emotional representations of failure or fear. The correlations showed a similar pattern in the variable time management and effort regulation. Broc. (56).

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Valle et al., (76) notes that in addition to the learning-oriented goals, other goals (oriented social assessment and the achievement of a good employment situation in the future) that promote the use of strategies and involvement in the study.

The goals oriented to lead the involvement in the study derived from a defense of self and those derived from a search of improved self-esteem are also significantly related to the use of cognitive strategies and self-study. . Valle et al, (76) Boat (42) in the approximation of the student's interplay of three key elements: intent (motive) of the learner, the process used (strategy) and achievements obtained (yield).

The implication for interest in studies and the acquisition of competence and personal control reasons would be able to secure a strategic information processing study and self-regulated academic performance. Valle et al., (76), to this author is a positive relationship between the component approach to performance goals, strategic information processing and self-regulation of the learning process. "Try to do better than others."

However more research, as Brophy notes quoted by Valle et al., (76) would be needed to understand the true extent of the prospect of "multiple targets" taken from everyday classroom practice.

The results shown in the Medical Career Veliz (78) noted that students not only not became more strategic, but tended to be superficial and shallower in their approaches to learning because over time, unlike the results reported in this paper, is less interested in the ideas and made less use of evidence during his apprenticeship, similar results in the group of students who apply strategic focus throughout the career in a 2012 study.

Instead Escanero (79) states that in the case of these students enrolled in the final year, their learning is related to professional practice which apparently determines greater strategic direction regardless of sex. It is possible to plan and monitor their actions and process information strategically in areas that do not like them but it is know they need each other to achieve goals that are important or interesting to them, to achieve a good record, get a good job. Valle et al. (76)

Know and understand how students approach or focus their learning getting greater success in the academic process.

The research question is: Does the approach to learning of students with high academic performance in the different faculties of the Universidad San Francisco Xavier de Chuquisaca is preferably strategic?

The general objective is to analyze the approach to learning of students with high academic performance in the faculties of the Universidad San Francisco Xavier de Chuquisaca.

Material and methods

The research paradigm is positivist, while seeking to demonstrate the relationship between the study variables.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

The process is supported by the use of quantitative methods and techniques that will be explained later in more detail.

Quality criteria search rigor in terms of external validity and uses the previous theory, generating contrasting hypotheses. Barrantes (120). In this research preference levels are evaluated in the implementation of certain learning strategies in students with high academic performance.

In methodological approach is quantitative, where considers the alternation between moments of induction (going direct to the theory model) and other deductible (ranging from theory to specific) and vice versa; (121) is suggested by Newman and Benz (121) for whom a recursive between theory and empirical evidence and vice versa is possible prosecution process.

In the process, quantitative methods for the processing of information will be applied and shall be supplemented with analysis, synthesis, induction and deduction, in view of this, quantitative and objective variables will be analyzed like test scores of the steps 2009 to 2012.

Study is correlational Hernandez (120) because it has aimed to evaluate the statistical relationship between variables such as strategies and approaches to learning of students in the four areas of knowledge.

The study by temporal scope is transversal, or synchronous.

According to its purpose, is an applied research and with its depth in a kind of ideographic research (123) emphasizes the particular limited to students with high and medium academic achievement at the University of San Francisco Xavier de Chuquisaca and with its purpose, this research corresponds a type of descriptive as it seeks to solve practical problems to transform theTerms of a given process, event or phenomenon.

The sample of students was drawn from the faculties of health sciences , nursing, health technology , social sciences , humanities and sciences education, economic , accounting and financial sciences and colleges of technology, agronomy and architecture , who accepted the invitation issued by the Directorate of Research Science and Technology and the Vice President of the USFXCH.Then two groups of students from the schools were formed . Group 1 with high academic achievement and group 2 with medium high academic achievement , looking with this second group compare results and validate the data obtained with the sample of study.The first 146 students were integrated using non-probability sampling defined by internal university criteria that recognize the first two levels averages for second , third, fourth and fifth year of different undergraduate courses of each management granting the distinction to " Alfredo Arce Arce " .

Table 1

Studied Samples 2009 to 2012

Áreas	Nº students
Technological Sciences	98
Health Sciences	157
Economics and Finance	122
Social Sciences	115
Total	492

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Table 2

High average 2009 to 2012 for knowledge areas

Knowledge areas	High average 2009 to 2012
Health Sciences	82,502
Social Science	87,977
Economics and Finance	91,148
Technologicals Sciences	76,943

Source: Database of USFXCH

Inclusion and exclusion criteria Inclusion criteria

- Group 1: The first two students with highest efforts during 2009 to 2012.
- Group 2: Students with high academic average performance during 2009 to 2012 steps per faculty.
- Studying second to fifth year.
- Age between 19-25 years old.
- Both sexes.

Exclusion Criteria

- Students with irregular attendance.
- Students with reinstatements.
- Students with drag subjects.
- Physical or sensory deficit that requires adjustments to instruments.
- Graduates in steps outside the temporal boundaries.

Research Methods

Throughout the process were used the analysis, synthesis, induction, deduction and methods such as document analysis, logical and historical sistemático.The instruments used were the ASSIST questionnair of Entwistle, 1998 (25) for the analysis of approaches form of learning and research ethics and informed consent for research use.

Questionnaire for learning approaches ASSIST

The questionnaire Approaches and Study Skills Inventory for Students (ASSIST) (25) is an instrument that evaluates the use of learning strategies of students in their work activities and the quality of learning. It consists of 66 items divided into three sections: The first 6 items to identify the concept of learning. The second contains 52 items to determine the different approaches to study, this section being that taken in this investigation.And consists of 8 items for the type of courses of the person answering the questionnaire. The answer offered 5 options of the Likert scale (OK, more or less agree, do not know, more or less disagree and disagree) are presented in three different learning strategies: deep learning; Strategic Learning and surface Learning. These have the following components:

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Analysis of results

shallow focus	Strategies
Lack of purpose	Low importance by school subjects Do not seem relevant Searching explanation of their decisions Take courses for different reasons than the others
Memorize without relating	Concentration on memorization Ideas seem unrelated Not identify the important aspects Difficulty understanding
Law of Least Effort	Tendency to read only what is required Study just enough to pass the course Study is limited to the minimum You like the detailed explanation of the activities
Afraid to fail	Stress from everything you need to study Do not know if you can manage content Fear of be delayed Do not rest for thinking about it

Initially we proceeded to determine the Cronbach's alpha to estimate the reliability of both instruments, the extent to which the instrument measured is intended to measure. The measure of reliability using Cronbach's alpha assumes that the items (measured on Likert scale) measure the same construct and are highly correlated. The reliability of the scale is 865 for deep focus., 877 for the strategic and 823 for surface data with each sample to ensure reliable measure of the construct in concrete research samples.

Strategic focus	Strategies
Management of Time	Time management means careful organization Do homework on time studying constantly Proper use of daily time
Attention to task demands	feeling efficient Put more effort Determination to succeed Not difficult to motivate
Achievements	Impress the teacher with homework Follow teacher comments Think of the issues reviewed Focus on what he considers important
Monitoring the effectiveness	Impress the teacher with homework Follow teacher comments Think of the issues reviewed Focus on what I've considers important

To perform the data processing is started making scales for determining the level of ASSIST. The scales that were obtained allowed to categorized the use of the variable of frequency of strategies and approaches to learning.

ASSIST Scale (Sample 492)
Students from Universidad de San Francisco Xavier

For statistical processing SPSS V.21 was applied through the application of non-parametric tests such as Chi square, Student t and Crosstabs for the analysis of the results the Chi square test was applied to check whether there is a relationship between the independent and dependent variables that are qualitative. The Crosstabs procedure allows for two-dimensional tables and the process of means generate a descriptive statistics to calculate the difference.

Enfoques	Frecuencia				
	Muy Baja (10%)	Baja (20%)	Moderada (40%)	Alta (20%)	Muy Alta (10%)
E. Profundo	16-52	53-57	58-67	68-74	75-80
E. Estratégico	20-64	65-73	74-86	87-93	94-100
E. Superficial	16-35	36-41	42-50	51-58	59-80

Deep focus	Strategies
Search for meaning	Understanding personally Discover the ideas in a written Stop and think while studying Understand the background of a problem or activity
Relation of ideas	Relations between different topics Mentally integrate all knowledge Read to stimulate your thoughts Reflect on own ideas
Use of the evidence	Consider the information Ask questions about what they hear or read Examine the details before making an interpretation Follow the thread of the arguments
Interest in the ideas	Thinking outside of class on academic content feeling emotion feel interest Wishes to continue studying
Study organization	Terms of optimal study Organization prior to exams Compliance readings suggested by his teacher Planning the weekly activities

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

The t-test for two independent samples allowe the hypotheses regarding the difference between two independent means that have been studied. The qualitative analysis was based on the interpretation of data following a qualitative approach since the triangulation techniques, saturation and constant comparison.

Analysis of results

Sex	Value	Gl	Next asymptotic (bilateral)
Chi-square	4,870[a]	4	,301
Likelihood ratio	4,925	4	,295
Asociation line by line	3,502	1	,061
Number of cases	181		
Chi-square	16,227[b]	4	,003
Likelihood ratio	16,723	4	,002
Asociation line by line	11,529	1	,001
Number of cases	311		

The value of the test for male students is 4,870. The p-value associated with this value is 0.301. Therefore a 0.05 significance level the null hypothesis of independence is not rejected and, therefore, we conclude that there is no relationship between the variable frequency, deep approach and performance.

The value of the test statistic for female students is 16,227. The p-value associated with this value is 0.003. Therefore a 0.05 significance level the null hypothesis of independence is rejected and, therefore, we conclude that there is a relationship between the variable frequency deep focus and performance.

Contingency table No. * Performance * Deep Frequency Sex

Sex				Strategic frequency					Total
				Too low	Low	Moderate	high	Too high	
M	Performance	High	Count	8	8	27	10	2	55
			Expected frequency	9,1	12,5	21,6	8,2	3,6	55,0
			% Performance	14,5%	14,5%	49,1%	18,2%	3,6%	100,0%
			Deep Freq%	26,7%	19,5%	38,0%	37,0%	16,7%	30,4%
		High	Count	22	33	44	17	10	126
			Expected frequency	20,9	28,5	49,4	18,8	8,4	126,0
			% Performance	17,5%	26,2%	34,9%	13,5%	7,9%	100,0%
			Deep Freq%	73,3%	80,5%	62,0%	63,0%	83,3%	69,6%
	Total		Count	30	41	71	27	12	181
			Expected frequency	30,0	41,0	71,0	27,0	12,0	181,0
			% Performance	16,6%	22,7%	39,2%	14,9%	6,6%	100,0%
			Deep Freq%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
F	Performance	High	Count	4	7	40	29	11	91
			Expected frequency	5,9	17,3	39,5	20,8	7,6	91,0
			% Performance	4,4%	7,7%	44,0%	31,9%	12,1%	100,0%
			Deep Freq%	20,0%	11,9%	29,6%	40,8%	42,3%	29,3%
		Alto	Count	16	52	95	42	15	220
			Expected frequency	14,1	41,7	95,5	50,2	18,4	220,0
			% Performance	7,3%	23,6%	43,2%	19,1%	6,8%	100,0%
			% dentro Frec Estratégico	80,0%	88,1%	70,4%	59,2%	57,7%	70,7%
	Total		Recuento	20	59	135	71	26	311
			Frecuencia esperada	20,0	59,0	135,0	71,0	26,0	311,0
			% Performance	6,4%	19,0%	43,4%	22,8%	8,4%	100,0%
			% dentro Frec Estratégico	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Contingency table No. * Performance * Deep Frequency Sex

Sex				Deep frequency					Total
				Too low	low	Moderate	High	Higher	
M.	Performance	High	Count	4	13	20	11	7	55
			Expected frequency	7,0	12,8	22,2	8,2	4,9	55,0
			% Performance	7,3%	23,6%	36,4%	20,0%	12,7%	100,0 %
			Deep Freq%	17,4%	31,0%	27,4%	40,7%	43,8%	30,4%
		High	Count	19	29	53	16	9	126
			Expected frequency	16,0	29,2	50,8	18,8	11,1	126,0
			% Performance	15,1%	23,0%	42,1%	12,7%	7,1%	100,0 %
			Deep Freq%	82,6%	69,0%	72,6%	59,3%	56,3%	69,6%
	Total		Count	23	42	73	27	16	181
			Expected frequency	23,0	42,0	73,0	27,0	16,0	181,0
			% Performance	12,7%	23,2%	40,3%	14,9%	8,8%	100,0 %
			Deep Freq%	100,0 %	100,0%	100,0%	100,0 %	100,0 %	100,0 %
F.	Performance	High	Count	3	14	37	29	8	91
			Expected frequency	8,8	18,1	38,9	18,1	7,0	91,0
			% Performance	3,3%	15,4%	40,7%	31,9%	8,8%	100,0 %
			Deep Freq%	10,0%	22,6%	27,8%	46,8%	33,3%	29,3%
		Mediu m	Count	27	48	96	33	16	220
			Expected frequency	21,2	43,9	94,1	43,9	17,0	220,0
			% Performance	12,3%	21,8%	43,6%	15,0%	7,3%	100,0 %
			Deep Freq%	90,0%	77,4%	72,2%	53,2%	66,7%	70,7%
	Total		Count	30	62	133	62	24	311
			Expected frequency	30,0	62,0	133,0	62,0	24,0	311,0
			% Performance	9,6%	19,9%	42,8%	19,9%	7,7%	100,0 %
			Deep Freq%	100,0 %	100,0%	100,0%	100,0 %	100,0 %	100,0 %

The value of the test for male students is 6,081. The p-value associated with this value is 0.193. Therefore a 0.05 significance level the null hypothesis of independence is not rejected and, therefore, we conclude that there is no relationship between the variable rate strategic approach and performance.

The value of the test for female students is 16,205. The p-value associated with this value is 0.003. Therefore a 0.05 significance level the null hypothesis of independence is rejected and, therefore, we conclude that there is a relationship between the variable rate strategic approach and performance.

Contingency table No. * Performance * Deep Frequency Sex

Performance	Sex		Strategic frequency					Total
			Too low	low	Moderate	high	Too high	
High	Masc	Count	8	8	27	10	2	55
		Expected frequency	4,5	5,7	25,2	14,7	4,9	55,0
		% Inside de sex	14,5%	14,5%	49,1%	18,2%	3,6%	100,0%
		% inside Strategic Fre	66,7%	53,3%	40,3%	25,6%	15,4%	37,7%
	Fem	Count	4	7	40	29	11	91
		Expected frequency	7,5	9,3	41,8	24,3	8,1	91,0
		% Inside de sex	4,4%	7,7%	44,0%	31,9%	12,1%	100,0%
		% inside Strategic Fre	33,3%	46,7%	59,7%	74,4%	84,6%	62,3%
	Total	Count	12	15	67	39	13	146
		Expected frequency	12,0	15,0	67,0	39,0	13,0	146,0
		% Inside de sex	8,2%	10,3%	45,9%	26,7%	8,9%	100,0%
		% inside Strategic Fre	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Lower	Masc	Count	22	33	44	17	10	126
		Expected frequency	13,8	31,0	50,6	21,5	9,1	126,0
		% Inside de sex	17,5%	26,2%	34,9%	13,5%	7,9%	100,0%
		% inside Strategic Fre	57,9%	38,8%	31,7%	28,8%	40,0%	36,4%
	Fem	Count	16	52	95	42	15	220
		Expected frequency	24,2	54,0	88,4	37,5	15,9	220,0
		% Inside de sex	7,3%	23,6%	43,2%	19,1%	6,8%	100,0%
		% inside Strategic Fre	42,1%	61,2%	68,3%	71,2%	60,0%	63,6%
	Total	Count	38	85	139	59	25	346
		Expected frequency	38,0	85,0	139,0	59,0	25,0	346,0
		% Inside de sex	11,0%	24,6%	40,2%	17,1%	7,2%	100,0%
		% inside Strategic Fre	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Table No. chi-squared tests

Performance		Value	gl	next (bilateral)
High performance	Chi-square	11,215[a]	4	,024
	Number of cases	146		
Lower performance	Chi-square	10,756[b]	4	,029
	Number of cases	346		

a. 2 cells (20.0%) have an expected frequency less than 5. Minimum expected frequency is 4.52.

b. 0 cells (, 0%) have an expected frequency less than 5. Minimum expected frequency is 9.10.

The value of the test for high-achieving students is 11,215. The p-value associated with this value is 0.024. A significance level of 0.05 the null hypothesis of independence is rejected; therefore is concluded that there is a relationship between the variable and strategic approach. The statistic value in the average income is $ 10,756 higher. The p-value associated with this value is 0.029. Therefore a 0.05 significance level the null hypothesis of independence is rejected and, therefore, we conclude that there is a relationship between the variable strategic focus and sex

Discussion

Studies on deep approach developed in different contexts Beltrán y Barriga [72] Valle Arias País [40] Alfonso [69] and. Barca, Peralbo. [42] Barca; [69] De la Fuente 2008 talk about their significant relationship with high performance; is possible to say that the results founded in the group of San Francisco have some differences with Salim studies [77] when he says that the deep approach does not necessarily generate a good academic results and in this group we see the intense Relationships with the high performance group.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

The results founded in the female group show that the San Francisco deep approach if associated with high academic achievement.

Regarding the strategic focus in high performance in the female group do not have a significant differences with the male group in organization of the study, time management, achievements and effectiveness, monitoring results were also reported by A. Valle, Ramon G. Cabanach, Goals [76] and also highlights that there is a relationship between performance and the strategic planning. Preferably in females is observed by the strategic approach, results in another discoveries Ramirez (138) study; but differ from those obtained by Salas [66] who say men preferably applied a strategic approach.

To Broc [56] and Cabanach [54] highlight high metacognitive self-regulation and achievement goals in the case of high yield figure. AriasPaís Valle [40] H. Salmeron [44], emphasizes time management and achievement goals and self-regulation strategies.

To Broc [56 the difference between performance groups (high, medium and low) are time management, effort regulation and metacognitive self-regulation, which are the components in which differences were found between high and upper middle in this research in the USFXCH.

To several authors Salas [66] Broc [56] Abalde [73] Gargallo approaches [70] Carvallo Soto (80) high performance students apply both a deep strategic approach.

To Valle [71] the relationship of deep focus and achievement occurs in both high academic performance as average high and Barca [69] the average yield and high and deep reasons adopts and achievement strategies, but we see that in the group are higher because there are strong differences in the study group of USFXCH

Students with highest average also applied a superficial focus since there are significant differences in lack of purpose, unrelated memorizing and fear of failure. To Gonzalez R, Valle A, Suarez JM, Fernández [54], Valle Arias País [40] shallow focus is related the motivational components of extrinsic character that is the fear of the consequence and not much interest in the study itself same.

To Soto Carvallo [80] this superficial approach is not related to the planning and Waiters. [27] Perez [75] this approach is deficient in regulation, Broc showing the findings [56] when he is referred to the differences between the highest performance with the medium.

Although De la Fuente (74) emphasizes that there is a relationship between the DEEP approach, the average yield and high refering that both approaches could be found in the preferred application of this approach however upper mids are more superficial than students of high groups.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Important to note that despite being groups of high-achieving students and high average, these strategies make use of shallow focus Broc [56] for whom there is no use of strategies the case of shallow focus, perhaps concerned that the purpose of using a certain type of strategy is different, as the case of memorizing unrelated to achieve a grade without compredener, and if the goal is to get high scores, strategy must be applied, which is the case of students whose goal is more greater to the success and achievements, not so much of a student with greater preference for deep focus. Therefore, it is possible to say that the surface approach and deep are exclusive following González R, Valle A, Suarez JM, Fernández [54].

Conclusions

There are significant differences in the group with a preference for female strategic approach with a higher average in the organization of the study components, attention to the demands of the tasks, achievements and effectiveness monitoring where women obtained higher averages.

The female students of high performance group obtained higher means in the deep and strategic approaches, in the second there are significant differences in organization of the study; time management, monitoring achievements and effectiveness in all components of female students in high yield averages in metacognitive self-regulation, management of time and regulation in the important case of strategic learning.

In shallow focus, males scored higher than female values, especially when there is a lack of purpose and memorization; more preferably invites us to reflect on why a student who has a high preference for the deep approach also has a preference for the surface approach, which shows the need to analyze what aspects should be reviewed so that the student go to the high performance memory and does not have a clear purpose in the process of learning.

Many elements of reflection arise before the results of this study certainly known as the mental processes that apply gender, students are different and it is important to analyze the importance of facilitating knowledge considering the diversity of approaches that have these violent groups of the San Francisco Xavier.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

References

Roosta M., Suárez L., Rodríguez J.Bolivia: Diagnóstico Nacional sobre las Políticas de Investigación en las Universidades Instituto Internacional de Educación Superior para América Latina y el Caribe (IESALC-UNESCO. Universidad Tecnológica Privada de Santa Cruz. Bolivia: Santa Cruz. 2007.

Salas R. ¿La educación necesita realmente de la neurociencia? Universidad Austral de Chile. Red de Revista Científicas de América Latina, España y Portugal. Estudios pedagógicos.2003.(29); 155 -171.

Carlson N.R. Fisiología de la Conducta. Barcelona: Ariel-Psicología, 1999.

Machado S.,Portella C., Silva J., VelásquezB., Bastos V., Cunha M., Basile L., Cagy M., Piedade R., Ribeiro P. Aprendizaje y memoria implícita: mecanismos y neuroplasticidad. Revista de Neurología, 2008: 46(9); 543-549.

Pozo J.,Monereo C. El aprendizaje estratégico. Madrid: Santillana, 1999.

Beltrán J. Estrategias de aprendizaje. En V . Santiuste y J.A. Beltrán (eds. Dificultades de aprendizaje. Madrid: Síntesis,1998.

Luengo R. y González J. Relación entre los estilos de aprendizaje, el rendimiento en matemáticas y la elección de asignaturas optativas en alumnos de enseñanza secundaria obligatoria (E.S.O.. Revista iberoamerica de educación matemática. Valencia España 2005 (3); 25-46.

Pozo J., Monereo C. (coords. El aprendizaje estratégico, España: Aula XXI Santillana, 1999.

Ley de la Educación Nº 070 "Avelino Siñani – Elizardo Pérez". 2011.

Castellanos, D. La comprensión de los procesos del aprendizaje: apuntes para un marco conceptual. Colección Proyectos. Instituto Superior Pedagógico Enrique JoséVaronaCuba: La Habana. 1999.

Puente, A., Poggioli L. y Navarro A.Psicología Cognoscitiva. Desarrollo y Perspectivas. Caracas: Mc Graw Hill. 1989.

Escanero J. Elementos para el diseño de una práctica de metacognición: Conocimientos del cómo. Disponible en: http://www.evavalpa.org/modulos/modulo_05/elementos_metacognicion.pdf.

Flores M. La Lectura comprensivo crítica como apoyo a los procesos de enseñanza y de aprendizaje en el nivel superior de educación. Bolivia: Sucre . Universidad Mayor, Real y Pontificia de San Francisco Xavier de Chuquisaca. 2004.

Universidad Mayor Real Pontificia de San Francisco Xavier de Chuquisaca. Modelo Académico. Bolivia: Sucre. 2011.

Daza R., Roca V. Estudio de la educación superior en Bolivia. Bolivia: Santa Cruz UPSA. 2006.

Santa Cruz J. La educación Superior en el marco de la descentralización: Contexto y Perspectivas. Ministerio de Hacienda. Red de Análisis Fiscal. Disponible en: http://www.forodac.org.bo/upload/301_Ed_Superior.pdf. Consultado en

CEUB. Congreso Nacional de Universidades.Lineamientos para el desarrollo curricular del XI Bolivia: La Paz.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

2012.http://www.ceub.edu.bo/documentos/11_congreso/53 Lineamientos para el desarrollo curricular.pdf

Congreso Nacional de Educación, Documento de trabajo I. Resumen de los Congresos Departamentales. Bolivia: La Paz. Industrias Lara Bisch S.A. 2005.

Universidad Mayor Real Pontificia de San Francisco Xavier de Chuquisaca. Cifras. Bolivia: Sucre. 2012.

Marín M. A. La investigación sobre diagnóstico de los estilos de aprendizaje en la enseñanza superior, Universidad de Barcelona. Revista de Investigación Educativa. 2005. 20 (2); 303-337

Bernard J.A. Análisis de estrategias de aprendizaje en la Universidad. Investigación 22. Instituto de ciencias de la educación. España: Universidad de Zaragoza. 1992.

Monereo C. (Comp. Estrategias de enseñanza y aprendizaje. Formación del profesorado y aplicaciones en la escuela. Barcelona: Graó. 1994.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Article ECORFAN Journal-Mexico
NET BUSINESS December 2014 Vol.5 No.12 1035-1044

Marketing capability, entrepreneurship and organizational innovation in hotel sector

RUIZ-José *†′

Universidad Autónoma de Baja California. Benito Juárez S/N, Ex Ejido Coahuila, 21100 Mexicali, Baja California, México

Received April 29, 2013; Accepted November 22, 2013

The objective of this research was to determine whether the sustainable competitiveness of micro, small and medium hotel companies in the city of Ensenada, Baja California, Mexico, it is explained by some of the endogenous variables analyzed: ability of marketing, entrepreneurship or organizational innovation, as an alternative to confront the problem of low flow of tourist in the State as a result of a perception abroad as a violent and unsafe place. Through the cited literature, surveys and structured interviews, applied to the involved agents in these companies, it was possible to determine the variables that explain further its sustainable competitiveness.

Marketing, competitiveness, hotels, tourism

Citation Ruíz J. Marketing capability, entrepreneurship and organizational innovation in hotel sector. ECORFAN Journal-Mexico 2014-11: 1035-1044

*Correspondence to Author (email: gabruiz@uabc.edu.mx)
† Researcher contributing first author.

Introduction

Nowadays, the hotel sector in Baja California shows a disturbing behavior; the Mexico Secretariat of Tourism states that factors such as the perception abroad that Baja California is a violent and insecure place play a key role on it. For the city of Ensenada particularly, this problem results in the low tourist influx, as stated by the Ensenada Hotel and Motel Association, that during 2010 the fall in room occupancy was between 40% and 50%. Likewise, the Baja California State Tourism Secretariat reports a fall of -6.7% in hotel occupancy between January and February 2011 compared to 2010. This research aims to determine whether the sustainable competitiveness of micro, small and medium hotel companies in Ensenada, Baja California, Mexico, is explained by the marketing capability, entrepreneurship and organizational innovation.

Tourism is an important sector from the economic perspective, since it is an activity with a lot of hierarchy for its impact on national development, especially in the redistribution of income, the balance of payments, the employment level, the Gross Domestic Product (GDP) and the regional economies (Maroni, Mastroscello and Montefiore, 2007).

Tourism includes a wide range of different activities, these include: transportation to and at destinations, accommodation, catering, shopping, travel agencies services, inbound and outbound tourism operators; especially, international tourism is a major source of income for many destinations.

Considering this situation, it becomes evident the need to implement strategies that affect the sustainable competitiveness of the hotel sector. If we consider the concept of Conde (2004) which states that competitiveness aims to identify the type of competitive advantage that a hotel can prevail and to assess the extent to which this advantage is defensible.

On the other hand, as explained by Monfort (2002) it must be taken into account that in the context of the tourism sector, competitiveness is delimited by a wide range of capabilities ranging from the unique strategies and the companies resources, to the most indirect elements, such as infrastructure to its fullest extent or the activities of different nature: social, political, economic or work activities.

Creating a competitive advantage in the business sector requires a strategic attitude of the company in the constant search for new sources of advantage or consolidating the existing one. This implies a management approach that encourages an attitude centered on technological learning which guarantees innovation and/or technological adaptation (Diaz, 2001).

Other authors such as Weerawardena (2003) and Chaston, Badger and Sadler-Smith (2001), state that entrepreneurship plays a key role in competitiveness of small entrepreneurial companies. The success of these will depend on their pro-activity, innovation and the more they are prepared to take big risks.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Jasso (2004) on the other hand, explains that innovation affects and particularly defines the organization competitiveness, by the dynamics of their marketing and manufacturing strategies, since if the company continues with the current strategies, the same designs or products are still generated, and the company is considered to be in a stage of maturity and stagnation. On the other hand, he states that if new designs or products dominating the market are created through innovation, this can result in a dynamism of strategies that will be translated into better results.

Afuach (1999) relates innovation with the capacity of the organization, which is called organizational vision of innovation, taking into account if the organization creates new knowledge, that is, if it makes obsolete the previous one(radical innovation) or if on the contrary it increases or improves the current knowledge, that is, it does not make obsolete the existing one (incremental innovation).

It is important to emphasize that the concept of competitive success, understanding this as the capability of a company competing with others to achieve a favorable competitive position, maintain and increase its market position and achieve superior results without necessarily depend on the poor remuneration of the production factors (Aragon and Rubio, 2005), goes together with the idea of excellence, which according to Zufiria (2008) derives from quality and will be the only path that will allow being competitive and sustainable in the medium term.

From the foregoing, in this research the hotel sector was selected, since according to Monfort (2002) such sector contains the most representative sections of the tourism business structure. In this sense, Gandara (2005) states that the most important influence on the competitiveness quality of a tourist product is the capability to meet the quality demands of a tourist who has anincreasingly experienced profile, with greater access to information and consequently with higher demands regarding the quality of tourist products.

For the city of Ensenada in particular, this problem results in the low tourist influx, as stated by the Ensenada Hotel and Motel Association, that during 2010 the fall in room occupancy was between 40% and 50 %. Likewise, the Baja California State Tourism Secretariat (hereinafter SECTURE) reports a decrease of -6.7% in hotel occupancy between January and February 2010 compared to 2009.

Taking the above into account, this research has as general objective to determine whether the sustainable competitiveness of micro, small and medium hotel companies in Ensenada, Baja California, Mexico, is explained by the marketing capability, entrepreneurship and organizational innovation.

Methodology

Correlational studies are intended to measure the degree of relationship between two or more concepts or variables, in a particular context in which the utility and main purpose of this kind of studies is to know how a concept or variable can behave knowing the behavior of another or other related variables (Hernandez, 2003).

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Considering the previous concept, it was determined that according to its purpose and scope this research is correlational, because it sought to determine whether the marketing capability, entrepreneurship and organizational innovation (independent variables) affect the sustainable competitiveness (dependent variable). This means that, specifically for this research, it was sought to observe the degree of relationship between the values obtained in the measurements of these four variables.

The data collection was done through the application of 29 surveys addressed to owners, managers, directors and people in charge of hotel companies in Ensenada, Baja California. These surveys were applied to a sample grouped by company size, education, age and gender of the respondents.

The instrument used in this research was based on a research conducted by researchers at the National Polytechnic Institute of Oaxaca, Mexico called: The Sustainable Competitive Advantage in Small and Medium Hotel Companies of Southern Mexico (Castillo, 2006). The applied data collection instrument was a survey that consists of three sections: the first one is related to the general data of the hotel company; the second one to the general data of the study subjects, and the third one consists of 94 direct questions with subjective five-point Likert-type scales, which are related to the variables to be analyzed in the model.

The subjects for analysis of the research were micro, small and medium companies in the hotel sector of the city of Ensenada, Baja California, Mexico; the data collection began in May 2010 and ended on December that year.

Considering that population or universe is defined as the set of all cases that match certain specifications (Hernandez, 2003), for this research the data base of hotels provided by the tourist office of Ensenada (PROTURISMO) was taken as population, which determined that there are 37 hotel companies registered at this entity and that meet the condition of hotel.

The study subjects to whom the surveys were applied were owners, managers, directors and people in charge of the hotel companies. They were applied to a sample characterized by company size, education, age and gender of the respondents. Table 1 shows the characterization of the sample subject to analysis according to its size.

Table 1

Classification of the sample according to its size

Company size	Frequency	Percentage	Cumulative percentage
MICRO	13	44.8	44.88
SMALL	11	37.9	82.8
MEDIUM	5	17.2	100.0
Total	29	100.0	

Source: Own elaboration

According to the established model, it was proceeded to make the operationalization of the variables. Table 2 shows the composition of the analyzed variables, the dimensions of which they were integrated according to the undertaken research, as well as the indicators with their respective items to measure the variables.

Once the information was collected, it was proceeded to perform the tabulation of results using the Statistical Package for the Social Sciences SPSS through which the analysis of reliability was performed with the Cronbach's Alpha method and the instrument's validity.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Considering that reliability of a measuring instrument refers to the degree in which its repeated application to the same subject or object produces consistent and coherent results (Hernandez, 2003) and that there are several proceedings for calculating this coefficient, for this research the Cronbach's Alpha was applied for the calculation of reliability.

In the reliability analysis of the instrument in general and of each of the component variables based on Cronbach's Alpha, it was considered that the coefficient can range between zero and one, where a zero coefficient means no reliability and one represents a maximum in reliability (Hernandez, 2003).

Regarding the reliability of the general instrument, a coefficient of 0.906 was obtained, indicating a high reliability; this means that all items integrating the instrument are measuring the same attribute, that is, sustainable competitiveness.

The reliability analysis of the variable Entrepreneurship was 0.680, and therefore there is an average reliability, which means that the 14 items integrating this variable, measure Entrepreneurship in hotel companies in a regular manner.

The reliability coefficient of the variable Marketing capability was 0.778, indicating an acceptable reliability, so the 43 items integrating this variable, measure the marketing capability in hotel companies in an acceptable manner.

It can be seen that the reliability coefficient of the Organizational innovation variable was 0.816, indicating that reliability is good, and it means that the 18 items integrating this variable, measure Organizational innovation in hotel companies in a satisfactory manner.

The Competitiveness variable obtained a reliability coefficient of 0.879, indicating that reliability is good, and it can be deduced that the 19 items integrating this variable, measure Organizational innovation in hotel companies in a satisfactory manner. These coefficients are summarized in Table 3.

Table 2

Operationalization of the variables

Variable	Dimension	Indicators	Measured with the item
Entrepreneurship	Innovation capacity	Improvements	V1, V2, V3, V5
		Planning	V4
	Risk taking	Owned Resources	V6, V7, V8
		External Resources	V9, V10
	Pro activity	Competitors	V11, V13, V14
		Exploring New Opportunities	V12
Marketing capability	Customer Service	Consumer Satisfaction	V15, V16, V17, V18
		Additional Service	V19, V20, V21
	Effectiveness of promotional activities	Advertising effectiveness	V22, V23, V24
		Packages effectiveness	V25
	Quality of employees	Customer relation	V26, V27, V28, V29,V30
		Pro activity	V31
	Strength in the distribution chain	Relation with intermediaries	V32, V33, V34,V35, V36
	Amount of resources committed for advertising	Advertising expenditures	V37, V38, V39, V40, 41, V42, V43
	Marketing research	Client	V44,V45, V46

		Competitors	V47, V48, V49
	Ability to differentiate services	Prioritization	V50, V51, V52
		Competitors	V53
	Rate of service introduction	Implementation time	V54, V55, V56, V57
Organizational innovation	Service Innovation	Service improvements	V58, V59, V60, V61, V62, V63
	Process innovation	Computer and technological applications	V64, V65, V66, V67, V68, V69, V70
	Marketing innovation	Rates	V71, V72
		Market Search	V73, V74, V75
Competitiveness	Profitability	Personnel Increase	V76
		Growth	V77,V80,V 81
		Sales increase	V78,V79
	Consumer Satisfaction	Customer Satisfaction	V82, V83, V84, V85
		Company image	V86
	Market Share	Participation and	V87
		Incursion	V88
	Inimitability	Competitive Strategy	V89, V90. V91
		Distinctive capabilities	V92, V93, V94

Source: Own elaboration

Table 3

Cronbach's Alpha of analyzed variables

Variable	Cronbach's Alfa
Entrepreneurship	0.680
Marketing capability	0.778
Organizational innovation	0.816
Competitiveness	0.879

Source: Own elaboration

Results and discussion

It was performed a two variable Pearson's correlation analysis, analyzing the existing relation between variables: competitiveness, entrepreneurship, marketing capability and organizational innovation.

As shown in table 4, marketing capability is significantly correlated with competitiveness with a .498**; likewise, it can be seen that with a correlation of .220, entrepreneurship is not significantly correlated with competitiveness. On the other hand, it can be seen that organizational innovation is correlated with competitiveness in a .564 *.

Table 4

Two variable Pearson's correlation between model variables

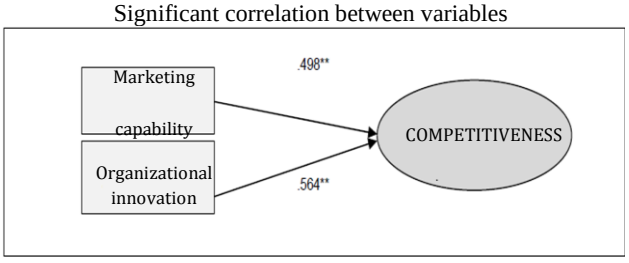
VARIABLES	COMPETITIVENESS
ENTREPRENEURSHIP	.220
MARKETING CAPABILITIES	.498(**)
ORGANIZATIONAL INNOVATION	.564(**)

** Correlation is significant at level 0.01 (bilateral)
Source: Own elaboration

Regarding the correlation of .220, where entrepreneurship is not significantly correlated with competitiveness, it means that a hotel company will not be more competitive by possessing entrepreneurial capabilities, that is, according to the obtained results, the capability the hotel has to innovate, take risks and being proactive, does not necessarily translate into a greater level of competitiveness which allows it to successfully face its competitors. That is not the case with the organizational innovation variable, which correlates with competitiveness in a .564 ** (see figure 1).

Graphic 1

Significant correlation between variables



** Correlation is significant at level 0.01 (bilateral)
Source: Own elaboration based on data obtained from the SPSS program

As shown in Table 5, relations that were not made in the hypothesis but were believed to be obvious, were presented as follows: Marketing capability does relate with entrepreneurship in a .471** and with organizational innovation in a .505 **; on the contrary, entrepreneurship does not show a significant relationship with organizational innovation, since it only obtained .176.

Table 5

Partial correlation between entrepreneurship, marketing capability and organizational innovation

	ENTREPRENEURSHIP	MARKETING CAPABILITY	ORGANIZATIONAL INNOVATION
ENTREPRENEURSHIP	1	.471(**)	.176
MARKETING CAPABILITY	.471(**)	1	.505(**)
ORGANIZATIONAL INNOVATION	.176	.505(**)	1

** Correlation is significant at level 0.01 (bilateral)
Source: Own elaboration

Conclusions

When speaking about competitiveness in hotel sector, it refers to the set of capabilities and characteristics a hotel company has, which allows it to grow, consolidate and remain in the market. Such capabilities are the comparative advantages, which translate into the attributes that allow the hotel to compete and achieve a better market position. Possessing these qualities, that makes it different from its competitors, will allow it to obtain higher yields and the possibility to stay in the long-term market.

As can be seen, with the literature cited above, different approaches of several authors Conde (2004), Gandara (2005) and Monfort (2002) can be appreciated, regarding hotel sector competitiveness, making reference of their intangible assets, reputation, image and quality of employees, as well as several types of capabilities and factors that will help achieve a long-term sustainability.

Considering that the objective of this research was to prove if certain capabilities that hotel companies of Ensenada, Baja California have (marketing, entrepreneurship and organizational innovation) in some way affect the acquisition of advantages that allows them to compete and at the same time to maintain themselves in a long term, according to the obtained results it can be concluded that the hotel companies possessing marketing and organizational innovation capabilities will allow the hotel company to have competitive advantages over its competitors, which will be reflected in major profitability, recognition and positive image within the sector; that way there will be theconditions to achieve a long term sustainability.

The above mentioned proves that statements of some authors such as Diaz (2001), Weerawardena (2003), Aragon and Rubio (2005) who claim that marketing capability targeted to customer service will allow companies to satisfy needs, to be effective on their promotional activities, and to obtain a greater participation in the market.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Having employees with suitable characteristics to satisfy their clients with a strength in the distribution chain that impinge in an ideal relation with intermediaries who contribute with business and who manage resources in an ideal manner. Advertising, will allow the hotel sector to have the possibility of increasing its market share; to generate a culture to develop market research with the purpose of knowing its clients' needs; to have the ability to differentiate, know the priority and prioritize its services; to have the ability of introducing new services in a fast and appropriate manner.

Agreeing with Jasso (2004), Hernandez et al. (2007) and Afauch (1999), hotel companies that possess organizational innovation to perfect the service by introducing improvements in each one of the processes, acting differently from their competitors in the way of reaching clients, will allow hotels to have a more competitive business, which consequently, will contribute with elements to maintain themselves in the market.
Likewise, it has been proved that competitiveness in such companies is also explained by organizational innovation, since those who develop it, will be able to perfect the service, because having innovation on their processes leads them to introduce improvements in each of the business processes, which results in a better customer service, that will allow hotels to have a more competitive business in that sense.

At the same time, it was found that the capability that a hotel possesses to innovate, take risks, and be proactive, does not necessarily mean a higher grade of competitiveness that allows it to face its competitors successfully.

Within the research findings it was found a positive influence between marketing capability and competitiveness; a positive relation between organizational innovation and competitiveness; an insignificant influence between entrepreneurship and competitiveness regarding hotel companies in the city of Ensenada.

From a deeper perspective, it can be stated that the developed research achieved to prove that it does exist dependence between the capabilities of the hotel company regarding marketing related with customer service and effectiveness of its promotional activities with the competitiveness that it may reach within the market.

This research pretends to serve as support to hotel companies of the city of Ensenada, and a positive impact on them, therefore, will be reflected in benefit for society involved with the financial activity that such business sector generates; there it comes its social relevance. As the purpose of this research was to closely present reality about the problem of hotel sector at the city of Ensenada, the data collection was made through the application of surveys instrument directly to the businessmen of such sector, and this is why this research has practical application. This research entails short, medium, and long term benefits, which will have an impact on the sector and the city itself. As to the short term benefits, they will allow the city hotels to know which capabilities they have to develop in order to increase their competitiveness in the market; at a medium term, they will allow them to acquire the elements to obtain a feedback regarding the actions taken in the short term period and to apply continuous improvement measures; at a long term, it will be reflected on the evaluation of the profits increase and on the hotel company success through its fulfillment of objectives.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

References

Afuah, A. (1999). La dinámica de la innovación organizacional: un nuevo enfoque para lograr ventaja competitiva. México: Oxford University Press.

Aragón, A. y Rubio, A. (2005). Factores explicativos del éxito competitivo: el caso de las PyMES del estado de Veracruz. *Contaduría y Administración Magazine*, (216), 35 – 69. Retrieved April 20, 2010 from http://www.ejournal.unam.mx/rca/216/RCA21603.pdf

Castillo, D. (2006). Capacidades organizacionales distintivas y ventaja competitiva sostenible de la micro, pequeña y mediana empresa hotelera. Retrieved February 1, 2010, fromhttp://itzamna.bnct.ipn.mx:8080/dspace/bitstream/123456789/1042/1/1295_2006_CIDIROAXACA_MAESTRIA_deyta_castillo_ diana.pdf

Chaston, Badger & Sadler-Smith (2001). Organizational learning: an empirical assessment of process in small U.K. manufacturing firms. Journal of Small Business Management, No.39. Pp: 139-151.

Conde, E. (2004) La Orientación al Mercado en Hoteles, una opción en busca de competitividad. *Revista de gerencia. com.*Retrieved April 14, 2010 from http://www.degerencia.com/articulo/la_orientacion_al_mercado_en_hoteles_una_opcion_en_busca_de_competitividad

Díaz, I. (2001). Marketing y competitividad ¿Relación o contradicción?. Retrieved August 10, 2010 from http://www.sappiens.com/castellano/articulos.nsf/Marketing/Marketing_y_competitividad_¿relación_o_contradicción/640196D84EBC287141256B0C004FB056!opendocument

Gandara, J. (2005). Hoteles sostenibles para destinos sostenibles – La calidad hotelera como instrumento para la sostenibilidad. Retrieved April 20, 2010 from http://eco.mdp.edu.ar/cendocu/repositorio/00020.pdf

Hernández, J., Domínguez, M. & Castillo, D. (2008). Ventaja competitiva sostenible en pequeñas y medianas empresas hoteleras del sur de México. *Pensamiento y Gestión Magazine*, México, No.25. Pp: 161-177.

Hernández, R., Fernández, C. & Baptista, P. (2003). Metodología de la investigación (3ª. Ed.). México: McGraw-Hill.

Jasso, J. (2004). Trayectoria tecnológica y ciclo de vida de las empresas: una interpretación metodológica del rumbo de la innovación. *Contaduría y Administración Magazine*, No.214. Pp: 87-90. Retrieved November 12, 2010 from at:http://redalyc.uaemex.mx/src/inicio/ArtPdfRed.jsp?iCve=39521405& iCveNum=1513

Maroni, A., Mastrocello, L. & Montefiore, F. (2007). Efectos de cambios en el tipo de cambio real bilateral en las exportaciones de turismo. *Virtual Library of Law, Economics and Social Sciences.* Retrieved September 12, 2010 from http://www.eumed.net/libros/2007a/225/indice.htm

Monfort, V. (2002). Estrategia competitiva y desempeño en la industria hotelera costera: evidencias empíricas en Benidorm y Peniscola. *Cuadernos de Turismo Magazine* No.10. Pp:7-22. Retrieved August 13, 2010 from http://revistas.um.es/turismo/article/viewFile/21881/ 21171

Secretariat of Tourism (2007). Annual Report.México.
Baja California State Tourism Secretariat (2010). About Ensenada. México.

Weerawardena, J. (2003) The role of marketing capability in innovation-based competitive strategy. *Journal of Strategic Marketing*, No.11.Pp:15-35.

Zufiría, J. (2008). Excelencia y competitividad. Retrieved January 10, 2011 from http://www.cotizalia.com/cache/ 2008/04/18/41_excelencia_competitividad.html

[Title in Times New Roman and Bold No.14]

Last name -First name, (in uppercase) -1st † Last name -First name (in uppercase) -2nd Author's name

Institutional mail No.10 Times New Roman and Italic

(Report Submission Date: Month, Day, and Year); accepted (Insert date of Acceptance: Use Only ECORFAN)

Abstract

Title

Objectives, methodology

Contribution

(150-200 words)

Keywords

Indicate (3-5) keywords in Times New Roman and Bold No.11

Citation: Last name -First name (in uppercase) -1st † Last name -First name (in uppercase) -2nd Author's name. Paper Title. Title of the Journal. 2015 1-1: 1-11 - [All in Times New Roman No.10]

† Researcher contributing as first author.

Introduction

Text in Times New Roman No.12, single space.

General explanation of the subject and explain why it is important.

What is your added value with respect to other techniques?

Clearly focus each of its features

Clearly explain the problem to be solved and the central hypothesis.

Explanation of sections Article.

Development of headings and subheadings of the article with subsequent numbers

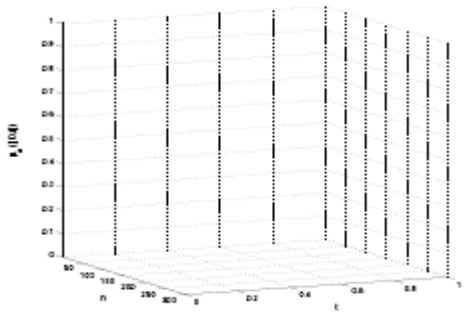
[Title No.12 in Times New Roman, single spaced and Bold]

Products in development No.12 Times New Roman, single spaced.

Including graphs, figures and tables-Editable

In the article content any graphic, table and figure should be editable formats that can change size, type and number of letter, for the purposes of edition, these must be high quality, not pixelated and should be noticeable even reducing image scale.

[Indicating the title at the bottom with No.10 and Times New Roman Bold]



Graphic 1 Title and Source (in italics).

Should not be images-everything must be editable.

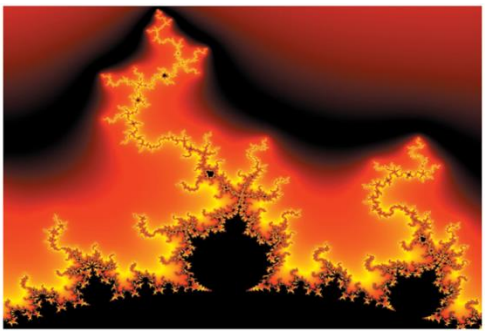


Figure 1 Title and Source (in italics).

Should not be images-everything must be editable.

Table 1 Title and Source (in italics**).**

Should not be images-everything must be editable.

Each article shall present separately in **3 folders**: a) Figures, b) Charts and c) Tables in .JPG format, indicating the number and sequential Bold Title.

For the use of equations, noted as follows:

$$Y_{ij} = \alpha + \sum_{h=1}^{r} \beta_h X_{hij} + u_j + e_{ij} \qquad (1)$$

They must be editable and number aligned on the right side.

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Methodology

Develop give the meaning of the variables in linear writing and important is the comparison of the used criteria.

Results

The results shall be by section of the article.

Annexes

Tables and adequate sources thanks to indicate if they were funded by any institution, University or company.

Conclusions

Explain clearly the results and possibilities of improvement.

References

Using APA system, should **Not** be numbered, either bulleted, however, if necessary, will be because reference number or referred to in any of the article.

Data Sheet

Each article must submit your dates into a Word document (.docx):

Journal Name
Article title
Abstract
Keywords
Article sections, for example:

1. Introduction
2. Description of the method
3. Analysis from the regression demand curve
4. Results
5. Thanks
6. Conclusions
7. References

Author Name (s)
Email Correspondence to Author
References

ISSN-Print: 2007-1582- ISSN-On line: 2007-3682

Mexico, D.F ____, ____ 20_____

Originality Format

I understand and agree that the results are final dictamination so authors must sign before starting the peer review process to claim originality of the next work.

_____

Article

_____

Signature

_____

Name

Mexico, D.F ____, ____ 20_____

Authorization form

I understand and accept that the results of evaluation are inappealable. If my article is accepted for publication, I authorize ECORFAN to reproduce it in electronic data bases, reprints, anthologies or any other media in order to reach a wider audience.

_____

Article

_____

Signature

_____

Name

ECORFAN-Journal Mexico

Economy

"Poverty incidence in the Province of Santa Elena: poverty opinion in Julio Moreno."
Olives- Juan, Carcelén-Francisca, Benavides-Artur, Alejandro- Carola
Universidad Estatal Península de Santa Elena

Computing

"Benefits of adoption of Cloud Computing in Mexico"
Rocha- Luis & Vazquez-Adrian
Universidad Iberoamericana

Optimization

"Comparison of European and Asian valuation of options with underlying average and stochastic interest rate by Monte Carlo simulation"
Ortiz- Ambrosio, Martínez-María
Escuela Superior de Economía-I. P. N.

Risks

"Moral Judgment Competence Between Public and Private Workers. A Comparative Study in Mexico"
Robles- Victor
Universidad Autónoma Metropolitana

Finance

"Financial Information for the Permanence of the agri-food Smes"
Cervantes- María, Alvarado- Sergio
Universidad de Occidente
Gallardo- Luis
Research National System

Administration

"Strategic Orientation in students with high academic avarage in the University of San Francisco Xavier de Chuquisaca"
Ramírez- Ivonne, Palma- María
Universidad de San Francisco Xavier de Chuquisaca.

Net Business

"Marketing capability, entrepreneurship and organizational innovation in hotel sector"
Ruiz-José RUIZ-José
Universidad Autónoma de Baja California

2007 3682
ISSN 2007 - 3682

www.ecorfan.org