Business Administration and Business Economics

The Effects of Exchange Rate Market in the Economy of Kosova

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Abstract: From a conducted centralized economy, Kosovo's economy became a free market after 1999. This made the economy of Kosovo to face a lot of challenges. One of them and still a topic not studied among Kosovo economists is the Kosovo currency. Kosovo is not yet a member of EU but since 2002 is using euro currency. What are the advantages and disadvantages of using euro currency for the economy of Kosovo? This was not questionable in 2002, because Kosovo was still in the first steps of creating a financial system. But, today the importance of exchange rates in economy is crucial as a result of the internationalization of businesses, the constant increase of world trade with the national one and the rapid change of money transfer technology. In this research, through quantitative and qualitative methods is analyzed the development of exchange rate market in Kosovo and the effects of exchange rates movements in Kosovo economy, its GDP and inflation and in consumer price index. The research will point out the importance of exchange rates as an interest variable for some of Kosovo businesses and its effects in the transition economy of Kosovo which has not been exposed to exchange rates risk on macroeconomic variables.

Keywords: foreign exchange rate; exchange market; commercial bank; oil businesses; consumer price index

JEL Classification: F30; F31; F41

1. Introduction

We are living in an age of globalization, at which governments, companies and individuals make agreements among themselves. This makes everyone exposed to foreign currency exchange risk resulting from fluctuations of foreign currency exchange. Even if a company does not deal with the rest of the world, it is exposed to foreign currency exchange risk because changes in the exchange rate affect that company's participation in the local market. For example, evaluation (appreciation) of the national currency attracts foreign companies to enter in the local market and

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it jeopardizes market participation of domestic companies (Pilbeam, 2006). This is an example of microeconomic effect of foreign currency exchange movement. From the macroeconomic perspective, the movement of foreign currency exchange affects production, employment, inflation, external balance, interest rates and fiscal policies.

One of the many challenges that Kosovo faced after the war was the choice of a monetary framework. Given the great rush to cash holdings of foreign exchange currencies and the disappearance of the Yugoslav dinar as a transaction tool, not surprisingly in September 1999 UNMIK approved the use of the Deutsche mark and other foreign currencies in Kosovo. Deutsche Mark was unilaterally adopted as a de facto legal currency in Kosovo, and there were no negotiations with Bundesbank in Deutschland or the European Central Bank at that time. There was considerable amount of cash in circulation. The population was familiar with this currency. Adoption of monetary structure, based on the use of the Deutsche mark was introduced as a natural choice. The usage of a stable currency was important in maintaining macroeconomic stability and it played a crucial role in rebuilding confidence in the financial sector. It also stipulated providing of significant support for the development of a strategy directed from abroad, which more than a choice was a need, taking in consideration the size of the domestic market.

In early 2002 the replacement of the euro legacy currency in the Eurozone countries, made it necessarily also the replacement of the Deutsche mark in Kosovo. In contrast to the "adoption" of the Deutsche mark as the main currency in Kosovo in 1999 and the legalization of its wide use, switching to euro currency was made in cooperation with the European Central Bank, as well as some national central banks of Eurozone. Special circumstances faced by the authorities in Kosovo, appeared in numerous challenges in preparations. The high degree of orientation of cash in the economy meant that there was no direct way to assess the volume of the Deutsche mark in circulation. Based on the decisions taken by the European Central Bank, the former Banking Payments Authority of Kosovo decided to disperse about 100 million euros before 1st January 2002.

2. Euro Benefits in Kosovo

Euroisation supported the development of the financial sector, which should have been established immediately after the war. In the beginning, there was no bank in Kosovo and virtually all transactions made in cash. In fact, for almost two years, in Kosovo there was no financial sector and the single financial entity, Micro Enterprise Bank (MEB), was specializing in microcredit. However, two years witnessed a rapid development of financial intermediation in Kosovo, especially

the banking sector. Between March and November 2001, six banks were established, which brought much needed competition in the banking sector.

In 2002 and 2003, seven commercial banks in Kosovo expanded significantly. Given the small size of the economy and population of Kosovo and negative experiences with banks in the past, Kosovo's financial system is characterized by a strong participation of foreign entities. In late December 2004, Kosovo's financial system consisted of seven banks, which operated through 247 offices, 14 microfinance institutions, 3 other non-bank institutions, 7 insurance companies and one company saving company.

Reduction of cash from circulation was one of the main objectives of the former BPK. Change from DEM to EUR provided a unique opportunity to achieve this objective and at the same time helped to strengthen the banking system. Former BPK planned to let down free the exchange amounts up to 1,000 DM, and imposed a fee of 2 percent fee for amounts between 1,000 and 10,000 marks, it was also the maximum amount allowed exchange cash. Amounts that exceed 10,000 DEM should be placed as bank deposits in euros. At the same time, every effort was made to facilitate the role of enterprise sales at Deutsche mark removal from circulation through a natural process.

Setting maximum limits on the amounts of exchange, as well as clearly defining the deadline period of dual currency circulation, greatly encouraged holders of cash to deposit their money in banks, rather to risk not to be exchanged in time. This strategy was accompanied by incentives from banks, which have already improved and multiplied their services to attract new clients to open their accounts. Although this scenario seems simple, its implementation posed some problems. The most important, of course, was the continuing lack of confidence in the banking system. This was hurt most by a still limited access of banking services. At this time, commercial banks in Kosovo had available only 24 offices, while the former BPK operated through a network of 23 offices, of which more than a half were small local agencies, which were opened only with limited hours. Disposal of the euro was successfully completed on 28 February 2002. Thus, from this moment, Kosovo's economy is "euroized" completely and effectively. Euroisation often defined as the adoption of the euro as legal currency and official currency by the authorities of a country outside the euro zone. This definition also implies that the authorities decided to reject their instruments of monetary policy and to abandon their national currency. Given the widespread use of informal Deutsche mark and its role UNMIK rejected this option as a "fait accompli" (a completed fact) At the time when Kosovo chose euroisation, the country put a sound monetary foundation that was needed for economic reconstruction, social and political development in the years to come.

The adoption of the euro as a national currency brought also monetary stability in Kosovo. The risk of devaluation of the national currency disappeared. CBK, which acts as a fiscal agent of the Government of the Republic of Kosovo, does not take any exchange risk, and manages the official reserves. These reserves are mainly invested in euro zone countries, in the central banks and financial institutions with good rating. Kosovo's economy faces no significant exchange risks. In the same way, euroisation has prevented Kosovo in having dual exchange rate of the currency, legal and informal. The introduction of the euro significantly simplified and reduced transaction costs both within and outside of Kosovo, especially when considering the importance of trade within the economy. Neighboring countries, mainly former Yugoslav republics, remain the main trade partners of Kosovo. However euro currency, the same as Deutsche Mark before 2002 is widely used in the region.

2.1. The Effects of Euroisation

Euroisation in Kosovo had also some long-term policy objectives. Euroisation in Kosovo was expected to foster economic stability, solve the problem of reliability, and mainly to increase fiscal discipline by eliminating the possibility of reproducing the money to cover fiscal deficits. After a longer period of time this will lead to increased foreign direct investment. Generally, euroisation was expected to foster economic integration, which has adopted the euro with the economies euro emission countries, in this case with the whole euro area. The adoptive country would already have a stronger economy or political ties with the country issuers. Euroisation in Kosovo did not follow this pattern, since it was a direct result of political and economic disintegration of the former Yugoslavia, and the intervention of the United Nations. But looking at the future, it should actually accelerate the full integration of Kosovo in the Euro zone.

Although there were positive effects on the economy, the Euro currency also brought costs. If we exclude the cost of changing the initial euro held in cash, then the loss of income from the "right of the older" and the cost of the opportunity of holding cash reserves in the Central Bank leads to significant cost for Kosovo. However, costs can be considered affordable, compared with the advantages of euroisation. After the unilateral adoption of the euro, CBK maintains available cash reserves in order to supply the economy, which can be used in exceptional circumstances. If euroisation did not solve all the financial problems in Kosovo and has brought restrictions on running an independent monetary policy, its advantages are undoubtedly positive mainly because the use of the euro has contributed to the stability of the overall financial sector.

3. The Exchange Market in Kosovo

Kosovo is still an economy in transition and laws and regulations have been created and managed by foreign mechanisms, consequently the currency was inherited from Europe because the country had an emergency situation. However, there are several factors that have contributed to the creation and development of the foreign exchange market in Kosovo. Many Kosovar citizens have migrated to foreign countries because of difficult economic conditions and their income are transferred to their family members, remittances, which are still the most important driver of the economy of Kosovo. So the foreign exchange market existed much earlier than the war since we needed remittances into usable currency in Kosovo. Even today, except the fact that remittances are highest revenues in Kosovo, they have shown the necessity of establishing the foreign exchange market and the competition in this market. Today in Kosovo, there are exchange bureaus, special financial institutions licensed by the Central Bank of Kosovo, who do the service of conversion of foreign currencies into euros and vice versa. These exchange bureaus operate throughout Kosovo, but the greatest concentration of exchange is in the region of Pristina, Prizren, Gjilan and Ferizaj.

But, exchange bureaus as one of the participants of the foreign exchange market, they need to convert foreign currencies collected and thus these create monetary reserves, monitors the foreign currency movements and benefit from foreign currency exchange movements. Other participants in the foreign exchange market are commercial banks in Kosovo. Commercial banks in Kosovo have the possibility of opening accounts in foreign currencies, depositing foreign currencies and withdrawing them, and also exchanging foreign currencies such as USD, CHF and GBP in Euro and vice versa. Exchange bureaus also have separate accounts in commercial banks and through these they exchange foreign currencies. Thus, through the collection, exchange, deposits and withdrawals of foreign currencies, each commercial bank in Kosovo creates open position in foreign currencies. The purpose of commercial banks in Kosovo is holding this open position (known internationally as Open Currency Position-OCP) as close as possible to zero, meaning that the bank's assets and liabilities should be equal. Foreign currency assets of a commercial bank are: cash in hand, the balance of current accounts of commercial banks, placements with correspondent banks, foreign currency bonds, loans or overdrafts in foreign currencies. The main liabilities in foreign currency of the balance sheet of a commercial bank are customer deposits in foreign currencies.

Kosovo Central Bank has so far licensed 31 exchange bureaus. To earn a license these exchange bureaus must have minimum capital of EUR 50,000.00 and an object in which they conduct their activity. However, according to several exchanges with which I approached the research, some of which are: "Euro"

exchange bureau In Prizren city, "Prizreni" in Prizren city, "CUFA" in Prishtina city, exchange bureau "Veli" in Prishtina, "Gazi" exchange bureau in Peja city, said they had no control or monitoring by the supervisory institution of these special financial institutions. Consequently, commercial banks in Kosovo when they purchase foreign currencies from their customers; they have to sell them through their account in correspondent banks and vice versa. In this way, in one hand the bank increases the assets side, cash in foreign currency, while on the other hand they reduce the balance of foreign currency in their correspondent bank account. But besides the exchange bureaus, the most important part of the market are businesses that cooperate with other countries and do business in foreign currencies. Among the businesses that mostly do their business in dollar currency are oil businesses. Oil imported from neighboring countries and Kosovo businesses licensed to import petroleum oil make this business cycle in dollar currency. This is due to the fact that exchange rate movements in financial market are very sensitive and the price of oil is affected by the movement of exchange rates. Below is the graph that shows the oil price movements depending on the exchange rate of the dollar against euro.

Figure 1. Oil Price movements vs. EUR/USD exchange rate

Source: www.bloomberg.com

An exchange bureau in the capital of Kosovo, "CUFA" in Prishtina which exchanges around 500,000 euros per day in foreign currencies USD or CHF, during our discussion for how activity in the foreign exchange market and the impact of the Kosovo businesses cited the clients interest for currency speculation is at lower levels, perhaps for lack of information and knowledge about this field. The only ones who actively deal with foreign exchange currencies, depending on rate

movements are speculators (informal exchange currency persons), which are not businesses at all. While based on exchange bureaus owner opinion, businesses that import goods from abroad, which are numerous, have a tendency to follow the market and to convert the amounts needed in the best moments, but nevertheless this is not a phenomenon that has a great impact. Mainly due to the lack of any proper planning and good management, business purchase USD to fulfill their needs when they need to realize transfers.

But, the important participants of the foreign exchange market are commercial banks in Kosovo. All banks, thus counting: ProCredit Bank, Raiffeisen Bank, TEB Bank, NLB and less participation from banks like Private Bank for Business and Banka Ekonomike perform foreign exchange transactions (USD, CHF and GBP) against euro and vice versa according to customers' requirements and the daily turnover of exchange foreign currencies may take up to EUR 2 Mio. From these transactions commercial banks in Kosovo create high profits, and those 100,000 euros per month. Commercial banks have access to the platform for the exchange of foreign currencies obtained from various international banks.

So bankers specialized for foreign exchange process and procedures, part of Treasury Departments of most of the commercial banks in Kosova follow the price of foreign currencies against the USD, CHF and GBP. Businesses and customers are those who are concerned about exchange rates and bank serves about advising them and also trying to complete their requests and needs on exchanging foreign currency funds. Banking officers working in the branches are the ones that meet the client and on their first request for exchanging money, inform Treasury Department of the bank and request the exchange rate from them. Depending what the request is, sale or purchase of foreign currency, Treasury specialists give the exchange rate to the client. Of course, the exchange rate offered to the client is weaker than the market rate and that depending on the bank's internal procedures. Once the customer decides to buy or sell currency, assets of the bank in that currency decrease/increase. So to cover the open currency position, which is the difference between total assets and total liabilities in foreign currency, commercial banks make the reverse operation, i.e. selling or buying a currency on the platform, meaning selling/buying the currency on their accounts in commercial banks. Platforms (such as the following example) when the bank decides to Buy or Sell then her account in foreign currency or in euro in any foreign bank is being credited/debited. So, the bank does the reconciliation of this position. Banks follow the movement of the different foreign exchange rates and quote the customers with a less favorable rate than the bank rate offered by correspondent banks. Or they even wait until the exchange rate is in favor of the bank. This difference is the pure profit of the bank. Below is shown the platform that some of commercial banks in Kosovo use:
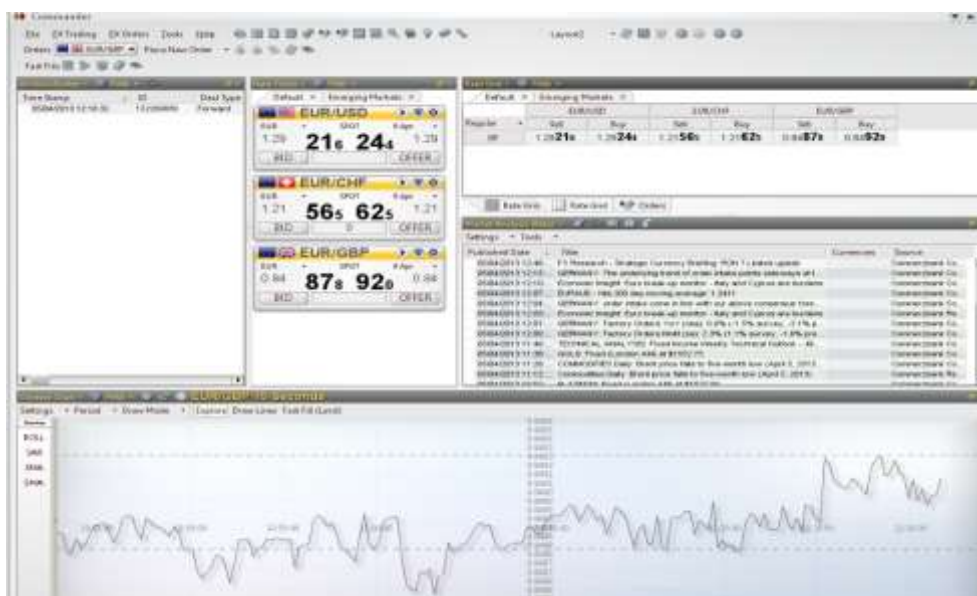
Figure 2. The interface of Commerz Bank for buying/selling of exchange

Source: www.commerzbank.com

Commercial banks of Kosova are obliged to report on quarterly basis in Kosovo Central Bank the report on foreign currencies, which contains open positions in foreign currency. For these positions commercial banks realize revaluation gains or losses, as the remaining open position in a business day is valued with the exchange rate of that day while that position in the next business day the exchange rate has moved and this is the risk assessment of the bank considering that the exchange rate has moved, appreciated or depreciated within two days.

4. Oil Businesses in Kosovo

During my research in some of commercial banks in Kosovo and also based on the transactions realized with exchange bureaus, the largest share in exchange transactions in the Kosovo's exchange market have the oil business This is because the oil is imported to Kosovo by some companies, which companies each year earn this right from the government and these companies set the price of oil in Kosovo. The price of oil depends on the financial markets and moves with the movement of the exchange rate EUR / USD.

Taking in consideration the fact that oil is one of the main products in measuring the CPI (consumer price index) in Kosovo, I have done a part of the research paper

on oil business in Kosovo. After meeting with some of the businesses, I can say that the price of oil in Kosovo is decided depending on the prices set from the larger companies that import oil in Kosovo and the office responsible for controlling and monitoring of this sector within the Ministry of Trade and Industry needs to do a better job in supervising this business in Kosovo. In a way this business can be called a monopolistic business in Kosovo. Kosovo citizen is one who does not follow the stock market; do not know if the reduction of oil prices in international markets reflects in his pocket. But, of course, from my experience, we observe that the increase of oil prices in international markets immediately reflect the price of oil in Kosovo. Why is it when we know that businesses have oil reserves and they are buying them with cheaper prices? Once these movements have no control prices and CPI moves depending on the movement of oil prices. The table below presents the consumer price index movements in Kosovo and the oil and gas group in the consumer basket, to be then compared with the movement of this index in the euro area in recent years.

Table 1. Consumer Price Index 2003 – 2011 Kosovo vs. Euro Area

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011
Kosovo CPI	1.3	-1.1	-1.3	0.6	4.4	9.3	-2.4	3.5	7.3
EURO Area CPI	2.1	2.1	2.2	2.2	2.1	3.3	0.3	1.6	2.7

Source: www.ec.europa.eu/eurostat

So, as it is observed, the movements of the consumer price basket in Kosovo can not be compared to price movements in a basket of European consumers. And this makes us think about the control of the pricing of products in Kosovo and particularly in the oil sector. According to the laws, the officers of the Ministry of Trade and Industry are responsible for regulating and monitoring the oil sector in Kosovo. In performing their duties, these offices adhere to neutrality, objectivity, independence and professionalism. Offices duties are defined in the Law on Petroleum and Petroleum Products in Kosovo. Their duties are to review the license, applications for equipment in the oil companies and make decisions on: the license, renewal of license, refusal of the application for the license. During my research I also visited some of the largest importers of oil in Kosovo, as Hib Petrol LLC, Fitorja LLC, Al Petrol LLC and Petrol Company LLC. High prices of petroleum products and price diversity are making Kosovo country with the highest prices in the region. Diesel prices, at the time of my research have reached from 1:25 to 1:29 euro from being 1:19 euro, while the price of gasoline was 1:23 to 1:27, from 1:18 as it was. In Albania, the price of diesel it is 1:21 euros, while

gasoline is 1:28 euros, while in Serbia, the price of diesel it is 1:14 euros, while gasoline 1:17 euros. This shows a difference in price, especially with Serbia. While in Macedonia in the time of my research the prices of petroleum were to go down for 1 cent and the price of gasoline for 2 cents, and all of this due to the Regulatory Commission's decision after making the control.

According to Kosovo citizens, prices have exceeded any possible level with the latest increase of oil price in the market of Kosovo in comparison with the standard prices. Citizens fail to understand all this, because when oil prices in Kosovo increase, the region is not acting according to it or vice versa. The businesses in Kosovo control the prices independently from any rule or control. As per citizen's opinion, the oil prices in Kosova are affected only from the competitiveness of the decrease or increase prices and these owners of oil businesses can raise or lower their prices by their own account. If the opposite would have happened, meaning the price increase then within two days it would be reflected immediately in Kosovo market, even with a greater increase than that of the increase in EU countries. Traders from Kosova say that the oil Kosovar Albanian great reduction is inhibited by the dollar price increase. The truth is that in a specific week in Italy the price of oil is down for 30 percent, also in France and in Deutschland. Even in Macedonia and Montenegro the oil prices decreased by about 30 percent. All of Europe and its customers are benefiting from lower prices of oil. Only the market of Kosovo has deaf ears and blind eyes. No movement from government, from its structures of consumer protection, not even by the Competition Authority that is part of MTI (Ministry for Trade and Industry).This increase in oil prices in the domestic market has a direct impact on the increased cost of production for many products, so there is a possibility to have a knock on effect on the price increase in the near future. Among the sectors that may be hit is agriculture. Prices of oil, grains and other food products in international markets may fluctuate, bringing destabilizing pressures on prices in the country. This is because Kosovo imports a very large consumer products from EU countries, and some countries of the region. The phenomenon of rising prices is inevitable in terms of so great dependence on imports and the absence of protectionist policies for local production.

So, in Kosovo the businesses and the effects of oil prices have a high impact on citizens. This directly impacts family budget. Oil price fluctuates is influenced by the exchange rate of EUR / USD. Kosovo government should monitor this detail in order not to create a monopoly of the business and thus not to allow that for the benefits of some businesses to be damaged the economy of Kosovo.

5. The Future of Kosovo Currency

Kosovo has a relatively new economy. Euro currency is being used as its official currency and cannot affect the money supply of money in the country. The financial crises of recent years many times by many Europeans have questioned the future of the euro, the question of whether Kosovo is ready to face a possible crisis of the EU currency or not. Deutsche, the main state of EURO currency has faced numerous debates about EURO advantages and cost-benefits analysis of this currency for the Deutsche people. They pay high taxes while their country is investing in recent years in other Eurozone countries that are in crisis to help and this way is helping so the stability of the EURO currency. But will this be allowed further if other countries continue to have financial debt crisis? To analyze this in my research, I did a survey among representatives of the Central Bank of Kosovo, representatives of commercial banks, the Ministry of Finance and the World Bank in Kosovo.

Analysts of the economy of our country believe that EURO is a very strong currency to fail despite the economic crisis and debts crisis in some Eurozone member countries, but it will not affect the economy of Kosovo. Some countries are at risk of bankruptcy, which can lead to failure of the common currency, which is for a long time criticized as a thoughtless move by world renowned economists. Now that this risk threatens, Kosovo has no alternative plan for such a situation since uses the euro since February 2002. When the first contingent of about 100 million euros was brought to Kosovo for the first time in December 2001, the situation was felt immediately in the basket of Kosovars who had a little less cash in euros than in deutsche marks and they quickly became the same in values. While analysts commercial banks in Kosovo express their opinion based on the fact that Kosovo has a poor economy, hence not much related to the European one, and it makes the economy less fragile Kosovo by foreign exchange rates. Another element is the fact that Kosovo has small amount of foreign debt compared with other countries. Currently it is estimated that Kosovo's public debt amounts roughly 330 million euros.

Otherwise, in the absence of monetary policy instruments to manage monetary offer and to issue its currency, Kosovo should follow its fate by watching what happens in Deutschland – with which remains connected through the euro. This is because when Kosovo in 2002 adopted the Euro as its currency, we didn't have monetary policy and Deutschland became the guarantor of the euro amount in the country. A leading private bank in Kosovo admits that the debt crisis in some euro area countries has affected our country. According to him, the debts have led to a decline in deposits as well as the requirements for loans which are the largest in the interest of the region and beyond, they range from 11 to 14 percent depending on

the type of loan. Central Bank of Kosovo, CBK, which makes monitoring of banks and insurance companies and is responsible for maintaining the quality and quantity of the euro in the country, says there is no room for worry as "Euro currency remains one of the most strong in the world".

According to statistics from the Central Bank of Kosovo, the economic crisis has caught the globe in 2008, has not affected the economy of Kosovo, thus relying on the fact that remittances to Kosovo had remained stable. Currently, they mainly come from the family countries- Deutschland and Switzerland. Since 2004 until the end of 2009 the Kosova diaspora, according to statistics of CBK, remittances sent to Kosovo were 2 billion and 798 million euros. Whereas in the first quarter of 2011 remittances amounted to 111.3 million euros, while in the same period last year this amount was 101.2 million euros. While officers from the Ministry of Finance in Kosovo support the fact that EUR will survive because until now it has shown its importance and power, but in case of any crisis, Kosovo will emit its currency. If we are ready or not to do so, was not possible to find any answers. So, Kosovo remains to invest and start thinking primarily for development and implementation of monetary policy, with the help of foreign financial institutions and thus be ready to better manage possible financial crises of its currency and be ready to control the money supply and why not in the future be able to have all institutions prepared to manage a new currency. This will be done through the Central Bank of Kosovo and the Ministry of Economy and Finance.

In this respect, for the future of Kosovo currency, namely the future of Kosovo financial markets, it is worth mentioning the Stock Exchange of financial markets. While most countries in the region are participating in stock exchange, then Kosovo, in order to develop the capital market and financial market, should be participant of the stock market in the future an also have a financial rating in order to be part of all financial markets worldwide. But, in this respect nothing is yet done. How to create the infrastructure of the stock market in Kosovo? This was a question with no answer at any of financial institutions in Kosovo. But, in this regard the Government of Kosovo, namely the Ministry of Economic Development should take examples of the region (Albania, Macedonia and Montenegro) and begin preparations for the establishment of the Kosovo stock.

6. Recommendations and Conclusions

Financial globalization is one of the trends that have reshaped the global economy unlike the economy designed by the Bretton Woods system in 1944 and has made the world know about economic factors that have a crucial influence in the future and the direction of the international monetary system. But, it would be difficult to

estimate the importance of the foreign currency exchange markets to the world economy. They affect production and employment through real exchange rates. They affect inflation through import costs and prices of commodities. They affect international capital flows through the risk and the return of assets. Foreign exchange rates reasonably are in focus of policymakers, the public and the media definitely. The fact that this indicator is not part of macroeconomic policy, part of the economic strategy development, citizens and the media was confirmed through the survey with Ministry of Finance, Central Bank of Kosovo, large businesses in Kosovo, exchange bureaus and commercial banks in Kosovo.

After all facts and the reports done during my research, it would not be an exaggeration if we would emphasize that foreign exchange rates are one of the most important macroeconomic variable in open economies, especially in today's economic environment, financial deregulation and globalization of financial markets. The exchange rate market is one of the largest financial markets with average daily turnover of about 3 billion euros. Foreign exchange rates of a country affect the economy the aggregate demand through prices of import and export. When interest rates rise in a country, then that country's currency is strengthened as foreign investors may be interested in investing in the country. When the country has surplus in the current account, the country's currency is strengthened as in the case of the trade deficit on the current account of the country's, currency will weaken. Whereas, when gross domestic product of the country increases then this decreases the weakening of the currency. So GDP influences the movement of foreign currency exchange.

All these reflections of the foreign currency exchange in the economy of a country are not studied and taken into account by any institution in Kosovo. Officials of financial institutions of the state of Kosovo do not foresee any financial crisis in Kosovo and they are not making any adequate preparation or analysis in this regard. My first recommendation after this research would be that institutions of Kosovo, Central Bank and Ministry of Finance and Economic Development must make analysis about the financial environment in Kosovo for all economic variables and in this way the impact of foreign currency exchange in the economy will be no longer not estimated.

Regulatory office within the Ministry of Trade and Industry should be active in controlling the movement of prices of key products that affect the consumer price index in Kosovo, because based on research conducted on oil business, food oil and sugar, these businesses make only the raising prices based on the movement of these prices in financial markets, but they do not decrease the prices when it comes to price reductions of these products in global financial markets. The price index in Kosovo suffers increase depending on the price movement of oil from Kosovo

businesses, which have created a monopoly in Kosovo. This section requires state regulation and monitoring.

Commercial banks create benefits and are one of the key participants in the foreign exchange market in Kosovo, but this part, based on visits made during my research, was not monitored from respective institutions, but it remains the responsibility of the banks management. This could affect the performance of commercial banks in Kosovo. Also, the exchange bureaus make their activity without control and have their own high profits by speculating on exchange rate movements and thus, revenues collected mainly from remittances from Kosovars are exchanged and this money is part of part of the economy without a follow-up on global trends of these currencies and without control by the state.

Kosovo despite the current developments has a long road ahead to prepare for the management and monitoring of foreign currency exchange rate reflections on its economy, to work in preparation of a substitute currency of Euro in order not to be always left in the "mercy" of an alternative choice by the European Union. Kosovo's work on preparing the infrastructure of stock market so that the country would gradually be in step with regional financial developments and would be able to protect first the customer, then businesses and to take preventive measures for economic variables which are affected from the movements of each other.

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Demographic Variables and Job Performance: Any Link?
(A Case of Insurance Salesmen)

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Abstract: This paper examines the relationship between socio-economic backgrounds of insurance salesmen on the job performance. The demographic factors studied include age, marital status, educational qualification, job tenure and gender. Using a descriptive design, a total of one hundred and thirteen respondents were studied. Using primary data generated through [1]questionnaire, the result of the study analyzed by both regression and correlation indicated a moderate positive relationship between the variable studied and job performance. Jointly, they account for 13% of factors explaining the performance of job of the respondents. However marital status and job tenure were found to be mostly predictive of job performance of insurance salesmen. The paper discussed the implications for the practice of management and human resource management.

Keywords: demographic characteristics; salesmen; Job Performance; insurance

1. Introduction

The Nigerian insurance industry has since witnessed growth with many more insurance firms entering the industry. This monumental growth is evident in the number of actors in the industry with almost all the commercial banks having its own insurance company. This coupled with bad attitude to insurance in the developing nation like Nigeria has consequently resulted in stiffer competition among the players in the industry. To this end, Nigerian insurance companies are now responding to such challenges by adopting various strategies that can help them survive in the long run. One of such strategies is the use of aggressive marketing strategies using sales force.

However, human resource managers are concerned with qualities and background of staff that best suit marketing positions. To achieve a fit between the job and the jobholders, managers either have to make the job to match the person characteristic or make the persons characteristics to match required job. Obviously, the former is

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easier and cheaper. These socio-economic characteristics of the marketing/sales force personnel like age, educational qualification, sex, marital status and years of service jointly known as demographic factors are capable of affecting their different work performance dimensions (Palakurthi & Parks, 2000). For instance Gelles et al. (1994) observed that males are physically active than their female counterparts while females tend to be more verbal than the males. Women have also been found to be faster in the use of the hand/fingers to do manual jobs like typesetting, weaving etc.

As a rule, males are more physically active than females. Females tend to be more verbal than males. Men value independence and achievement while women value intimacy and attachment. While men are action oriented "they take care of the business", while women are people oriented they take care of others. It is thus logical to expect difference attitude to and work performance.

Also lengths of job service also tend to improve job performance because of acquaintance. Hari (1989) posits that training efforts have in fact led to improvement in performance. Organisations are concerned with placing the right person in the right job and positions, because of its effectiveness and efficiency.

While various literatures, academics and authors have found the relationship between employees' demography and job performance to be vague, professionals seem to place emphasis on employees socio-economics background in employing and job placement decisions. Although, Davies et al, 1991, Rhodes 1983 and Warr 1994 in their studies said demography affects performance insignificantly, Waldman & Avilio (1986) concluded it does with positive r-value (r = 0.07).

Therefore, this study seeks to investigate the nature of the relationship between the demographic features of insurance salesmen and their performance, the remaining parts of this study include a brief literature review, research methods, data analysis, conclusions and recommendations.

2. Literature Review

2.1. The Concept of Job Performance

Job performance is a dynamic, multidimensional construct assumed to be an indicating of an employee's behaviour in executing the requirement of a given organizational role (Kavanagh, 1982). It has been studied and well documented that individual job performance is dynamic (i.e. it changed, over time) (Deadrick & Madigan, 1990: Polyhard & Barratta, 1993; Henry & Hullin, 1987).

However, despite the fundamental importance of predicting job performance to industrial-organizational psychology and organizational practice, the field still

knows relatively little about the nature of individual performance change overtime (Polyhart & Hakel, 1998). Although there is nothing inherently causal about time (Hulin et al., 1990), some changes in any measure of job performance may be attributed to effects approximated by temporal variables (Deadrick et al., 1997; Hofman et al., 1992, 1993).

Kavangh argues that job performance, as a construct can be directly observable. What one does observe is the individual's behaviours on the job and one assumes that this corresponds to job performance. Thus there is a set of observable phenomena (job behaviours) that one hypothesis do, in fact, represents job performance, an abstract.

According to Sawyer (1953) and Portar, performance is the end result of application of effort. They contend that it is the aspects of organisations are most desiring of measuring and influencing. Mitchell, Terry made an insight that the process of change in the performance of individuals is further complicated by the fact that what might be considered "good" behaviours of performance by the organisation changes over time. Thus he contends that employees are changing in term of their perception of what is "good" job performance and the company's perception of what is "good" job performance is also changing. This he argues is the strongest reason for the need for building a dynamic component into job performance appraisal programmes.

2.2. Education and Job Performance

Hacket (1979) defined education as the process of acquiring background knowledge of a subject. It is person rather than job or company oriented. It is the knowledge and abilities, development of character and mental power resulting from intellectual training. It can and thus influences attitudes both positive and negative towards work and commitment.

Entry into higher level jobs is often restricted to college graduates and in many cases, college graduates and professionals degrees are required. Persons are selected and certified by higher institutions largely on the basis of measures of academic aptitude or performance but the relationship between this measures and job performance (or productivity) is not largely known (Wise, 1975). Yet, the assumption of economic efficiency, would however suggest an existence of a causal relationship while equity would require it.

In a widely cited work of Ng & Feldman (2009), education is positively related to task performance. Their meta-analysis study on the relationships between education level and 9 dimensions of job behaviors representing task, citizenship, and counterproductive performance indicates that, in addition to positively

21

influencing core task performance, education level is also positively related to creativity and citizenship behaviour and negatively related to on-the-job substance use and absenteeism. Other authors (Hunter, 1986; Kuncel et al., 2004) also believe education facilitates performance in most jobs.

2.3. Gender and Job Performance

One difficulty encountered by investigators of sex differences and performance among workers in organizational settings is the difficulty of comparing the performance of men and women carrying out exactly the same job owing to gender segregation in the allocation of work tasks (Rydstedt & Evans, 1998).

Men and women differ significantly in their characteristics. Although sex refers to the biological differences between male and females, the list of actual differences is potentially long. Obviously, males and females differ automatically. As a rule, males are more physically active than females. Females tend to be more verbal than males. Men value independence and achievement, women value intimacy and attachment. While men are action oriented "they take care of the business", while women are people oriented they take care of others.

In many countries of the world, these differences cause government labour regulating agencies to regulate the employment of women. For example the employment of women on night work or underground is severely limited in the US. Hence, some of these restrictions among others mean that other things being equal, an employer who is faced with the choice of hiring either a male or a female for a job would choose the male. It is therefore not so much a matter of "gender discrimination" as some writers have argued but one of economic logic.

To a high degree, the job market is still segregated by gender. The world of "men's work" and "women's work" are as different as east and west; they are vastly unequal in power, pay and prestige. This have made comparison of performance between the two genders to come late. Kundson (1982) believes that women were as able as men if given similar exposure. Although according to Hartman (1988), men were seen as more powerful than women and viewed good performance as a male characteristic. Also, Yammarino & Dubinsky (1988) found gender and job differences in their study of the influence of gender on performance.

In a similar vein, Green, Jegadeesh & Tang (2009) studied the relationship between gender and job performance among brokerage firm equity analysts. The study found significant gender-based differences in performance on various dimension. Although it added that women are significantly more likely than men to be designated as All-Stars, which indicates that they outperform men in other aspects of job performance.

2.4. Marital Status and Job Performance

Some studies have found that women who held both work and family roles reported better physical and mental health and consequently better job performance than was reported by women who stayed at home or single. Traditional conceptions of marriage as entailing greater social responsibilities outside the workplace for women as noted by Hoobler, Wayne & Lemmon (2009) may promote perceptions of married women as less suitable for employment compared to single women. (Jordan & Ziteck, 2012)

Due to the assumption that women are less likely to be relied upon as the primary breadwinner for a married couple, people might expect married female employees to be less dedicated to their jobs compared to their single counterparts (who must provide their own income), whereas people might expect male employees to be more motivated in their jobs if married.

2.5. Service Years and Job Performance

Obikoya (2002) while identifying training needs quickly pointed at the new employees orientation. According to him, new employees often require new or additional training to learn skill specific to the job. As pointed earlier, education, which new employees have, is person oriented and not job or company oriented. This therefore goes to show that people who have stayed long on the job are not likely to make mistakes like new employees on the job, hence perform better.

Researches however find that beyond a certain stage, years in the service do not affect job performance. Yet employers are reluctant to retire the old employees of their organisations. This is because they want them to say back and train those who will replace them.

Ng and Feldman (2010) found evidence of a curvilinear relationship between organizational tenure and job performance. According to them, although the relationship of organizational tenure with job performance is positive in general, the strength of the association decreases as organizational tenure increases

Also worthy of note is that training of workers of organisations is a form of cost to the organisation and represents investment in human capital. This provides the reason why management prefers workers who have stayed relatively longer on the job to new employees. Reports say that most organisations in retrenching workers prefer to keep employees of more service years to less ones.

2.6. Empirical Evidence

The connection between formal schooling and occupational performance has been challenged by Anderson in the suggestion that the correlation between the two especially in developed countries is comparatively loose. In his conclusion, Berg (1971) had used a formidable array of statistical data to argue that the familiar correlation between educational training and job performance is a myth. From his studies, he observed that there is no association between the education attainment of these technicians and the evaluations they receive from supervisory personnel, nor was there any association between education and absenteeism.

In white-collar study, he also noted that performance in 125 branch offices of a major New-York bank, measured by turnover and data, and by the number of lost accounts per teller was inversely associated with educational achievements of those 500 workers. Ariss & Timmins (1989) also examines the relationship between the type of college degree, level of college degree, and superiors' perceptions of managers' attributes and their work performance in some management areas. Their study found no significant relationship between managers' college education and their performance at work

In spite of those rather, iconoclastic remark on the erstwhile assumptions about the relationship between education, productivity and economic development, even Berg himself admitted that "it would be foolish to deny that level of education is involved in the nation's capacity to produce goods and services".

In another research carried out by Sturman (2001), he argues that empirical research suggested that Job experience; organizational tenure and age have non-linear relationships with job performance. Considered simultaneously, there should exist an inverted U-shape relationship between time and performance.

Alli (2003) also studied the effect of age, sex and tenure in the job performance of rubber tapers. He stated that job performance can be assessed both by objective measures, using data derived from production records, and by performance ratings made by managers, supervisors and peers. Studies of the relation between age and job performance according to him, using objective production records data are relatively rare partly because of the various methodological and practical difficulties inherent in this kind of research.

Most reviews have generally concluded that the effects of age on job performance are slight (Davies et al, 1991; Rhodes, 1983; Warr, 1994). The meta-analysis conducted by Waldman and Avilio (1993) showed a small but positive relationship between age and productivity ($r = 0.27$) while a later one (Evoy & Cascio, 1989) indicated that age and productivity were essentially related ($r = 0.07$).

For skilled and semi-skilled and technical jobs, an inverted U-shaped relation between age and job performance has often been found with performance peaking in late 30s or early 40s (Clay, 1956; Greenbery, 1960; King, 1956; Sparrow & Davies, 1988). A curvilinear relationship between age and job performance have also been found reported for sales people (Day, 1993; Kelleher & Quick, 1973).

The empirical findings of Tillou & Liarte (2008) in their study confirm the positive impact of group members' experience on the global performance of the group. Their analysis shows a strong positive impact of age on group performance. Moreso, experience within the organization (tenure experience) also had an impact on performance though less significant.

Experience, usually measured by tenure or length of service tends to be highly positively correlated with worker age. Some studies of industrial and clerical jobs have shown that when tenure is controlled, age effects on job performance disappear, conversely when age is controlled, effects of tenure remains (Avolio; Waldman & Denial, 1990; Giniger; Dispenzieri & Eisenberg, 1983).

Studies examine sex differences in job performance have mainly focused on performance evaluations using ratings and rankings carried out by supervisors or managers (Arvey et al., 1992). However job performance rating are susceptible to bias (Nieva & Gutek, 1980) and where they involve male and female workers, they may be influenced by gender stereotyping (Maurer & Taylor, 1994) and by negative evaluations of women's job related abilities (Greenhaus & Parasuraman, 1983).

HYPOTHESIS

H0: Demographic factors of insurance salesmen do not have any relationship with job performance

H1: The demographic characteristics of insurance salesmen have strong relationship with job performance

3. Methodology

This study examined the nature of the relationship between the socio-economic characteristics of salesmen and their performance in Nigeria insurance industry. To achieve this, a survey research design was adopted as data was generated through a well-structured questionnaire designed by the authors. We used a five point Likert scale (1=strongly disagree; 5=strongly agree). The questionnaire includes two aspects; the first aspects deals with the demographic characteristics of the respondents while the second aspects test the extent of their agreement to the

various statements designed to establish the nature of the relationship that exist between these demographic variables and their performance.

The respondents comprised of various insurance policy salesmen in Lagos asked to fill in the questionnaire and recommended other potential respondents. In all, One hundred and fifty eight (158) questionnaires were administered while only one hundred and thirteen (113) completed questionnaires were received giving a response rate of 69%. The sample consisted only of insurance policy salesmen in Lagos. While job performance was the dependent variable, demographic factors are the independent variables. The nature of relationship and the direction were tested using Pearson Product Moment Correlation and regression analysis. The demographic variables tested in the study against job performance are Age, Marital status, Years of in-service, Educational qualification and sex respectively.

4. Results and Discussions

Table 1. Frequency Table showing Socio-Economic Characteristics of the respondents

		Frequency	Percentage
Gender	Male	71	62.83
	Female	42	37.17
Marital status	Married	68	60.18
	Not Married	45	39.82
Age	Above 30	37	32.74
	31-40	64	56.63
	41-50	12	10.63
	50 and above	-	-
Qualifications	OND/NCE	21	18.58
	Bachelors	75	66.37
	Masters	17	15.04
Year of Employment	Below 1 year	19	16.81
	1 to 3 years	53	46.90
	3 years and above	33	29.20

Table 1 above reveals the demography of the respondents of the study. It shows that majority of the salesmen are Males and between 31 and 40 years olds. About 60% are also married. A larger portion of the respondents have also spent between 1 and 3 years in the service representing about 47%. It also appears that the use of non-degree holders in the marketing of insurance product is almost disappearing as only 18% have either OND or NCE.

26

Table showing the relationship between Demographic features and job performance.

Table 2. Correlation Matrix

S/NO	1	2	3	4	5
1	1.00				
2	-0.59*	1.00			
3	0.33	-0.40*	1.00		
4	0.05	0.03	-0.01	1.00	
5	0.01	0.24	0.07	0.03	1.00

Field survey 2014. Critical Value r=0.272

Table 2 presents the correlation of the selected five demographic characteristics of the salesmen believed to be capable of influencing job performance. The table reveals that marital status and age are significantly negatively correlated as r= -0.59. Equally, Age is found to be negatively correlated with years of service. (r= -0.4) just as years of service and academic qualification are negatively correlated.

Table 3. Multiple Regression Analysis table of Job Performance and with the Five Demographic variables

Score of Variation	DF	Sum of Square	Mean Square	F-Value	Sign
Regression	5	3.64	o.61	3.29	0.00
Residual	108	22.58	0.17		
Total	113	26.22			

Significant at 0.05   F tab=1.34, N=113 Source: Field survey

R^2=0.17

Standard error = 0.44

Multiple regression Coefficient= 0.42

The analysis of the multiple regressions is presented in table 3. The multiple regression coefficient obtained is 0.42 and standard error 0.44. The demographic variables included in the model jointly account for about 13% of the factors that influence job performance. This is significant at 95% confidence level, though the co-efficient R^2 appears low. This finding is in congruence with that of Alli (2003) to the effect that performance of employees can be determined by their personal characteristics.

Summary Table of regression Analysis of Job Performance with the Demographic Variables Tested

Variable	Regr. Coeff	Std Error	Std.PartialRegr. Coeff	Std. Error of Partial Coeff.	Std. T- Val	Prob
Age	0.10	0.05	0.19	0.10	1.86	0.07
Marital Status	-0.21	-0.10	-0.24	0.11	-2.27	0.03
Yrs of Service	0.2	0.08	0.23	0.09	-2.27	0.01
Educational Qualification	0.02	0.04	0.04	0.08	0.47	0.64
Sex	-0.1	0.04	-0.02	0.08	-0.29	0.77

Source: Field Survey 2014

Table 5 shows that out of the variables considered, only two actually predict job performance of salesmen. They are years of employment on the current job and marital status. Both are found to be significant at 0.05. This shows that the more the salesmen stay on their jobs as salesperson, the more their performance. Therefore the experience curve is found to be applicable to the performance of sales men. This however should call the attention of the management of the insurance companies as it is found that as years pass by, the number of sales men reduces. This is evident in table 1. Sometimes also, they are transferred to administrative works like training when in fact; they can still be more useful to the company in the capacity of a salesman.

Equally, marital status was found to be predictive of job performance. This may be due to the seeming difficulty in managing work/family combination challenges. The work of field salesmen like that of insurance may require them to stay late in closing sales and deals among other challenges which may be difficult for married parents especially women. The result of the study is not too different from that of Shaffril & Uli (2010) who found that age, working experience and gross salary are correlated with work performance.

5. Conclusion and Implication for Management

The result of the study shows that only marital status and years of service are mostly predictive of performance of insurance salesmen. Age is significantly negatively correlated with marital status. Jointly considered however, the five studied demographic variables are positively correlated with performance as

explain about 13% of the factors that influence performance of the insurance sales men. This was also significant at 5%.

Consequent on the findings of this study and others in the literatures, we hereby make the following recommendations:

1. the range of time when experience (years of service) ceases to contribute to performance should be investigated;
2. efforts should be made by management to retain salesmen as their experience have been found to predict their performance if well managed and coordinated;
3. more of the middle aged should be employed as salesmen.

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Foreign Direct Investment Environment and Economic Growth

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Abstract: This paper examines the models of economic growth and the dynamic interaction between models from the Solow Model to New Endogenous Models. Long-term relationship of these models is noticed to have been related in terms of causality. Model comparisons were made to examine their dynamics which is not as complex as reflected. Results that growth is led by endogenous or exogenous factors are not verified to be absolute but relative. Results indicate that FDI affect the economic growth in many developing countries, but there are also many cases (developed countries) that show that economic growth has led to a long term increase of FDI flow. It is also verified that the impact of FDI on the environment is relative, based on the fact that there are exogenous factors that may affect the reduction of externalities. Causal link among FDI, economic growth and their impact on the environment makes the endogenous models be analysed with the dynamics, through which is shown best which is the "cause-consequence" factor, that causes gaps of concepts and practices in economic growth and environmental concerns.

Keywords: economic growth theory; classic; neoclassic; endogenous models; Foreign Direct Investments

1. Introduction

Last decade entries of Foreign Direct Investment (FDI[2]) in developing countries are considered major regarding the last crisis, creating unimaginable effects, especially in Asian countries, even calling into question the ability of organization and financing way in developed countries. The 1980s marked the triumph of neoclassical theory, free movement of capital associated with finance and innovation in communication technology, reduced distances between countries enabling better recognition of people and capital. This made the capital flow go "upwards" in developing countries. Theoretically, neoclassical growth models as endogenous models offer the basis with their empirical work on the positive relationship FDI / GDP, although in different perspectives. In the

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[2] I - Investment is everything that remains from total costs (C, G, NX), i.e. I=Y-C-G-NX. Investment (I) is investment plus foreign investments. Foreign Direct Investment (FDI) is defined as net inflows of investment (input minus output) to acquire a lasting managing interest (at least 10 percent of voting stock) in an enterprise operating in an economy other than that of the investor.

neoclassical framework, the growth rate of production is exogenous. According to the neoclassical model the impact of FDI on growth is identical to domestic investments and that FDI in the short term impact on economic growth. Solow Framework (1956) proposes that the production is a function of the capital stock and labor. While the model of endogenous growth (Lucas & Romer, 1990; Grossman & Helpman, 1991; Rebelo, 1991; Barro, 1985; Prescott, 1987), in general assumes that FDI in GDP growth are more productive than internal investments as they encourage incorporation of new technologies in the production function of the host country. Therefore, some countries can develop technology, but others may benefit from the spread of technology that is produced elsewhere. FDI is the channel of this process, emphasizes Borensztein et al., 1998). Endogenous growth models are pro long-term growth of the economy. According to them, FDI contributes to economic growth not only through capital formation and technology transfer (Blomstrom et al., 1996; Borensztein et al., 1995) but also through increase of the knowledge level, training of workers and know-how purchasing (DeMello, 1997, 1999). There are many debates about the benefits and costs by FDI. Moreover, empirical evidence shows that an increase in foreign direct investments is a contributor of externalities as in positive and the negative ones. Where the developing countries are positioned regarding the emphasized issues, and what model (Cobb Douglas) is used, are drawn too vigorous conclusions,[1] FDI has a positive relation with to economic growth. Such a model for the SEE countries, all beneficiaries of FDI but with a different macroeconomic history, political regimes and patterns of growth would be quite significant.

2. Theories of Economic Growth

Today, great attention is paid to determining factors that promote economic growth as well as to the great contribution that FDI flows have. There are many theories that dealt with this issue, but two theories are basic: (i) The neoclassical theory and (ii) the new theory of endogenous growth.

2.1. The Neoclassical Theory

"The theory of growth certainly did not start with my scientific articles of 1956" says Solow, "it probably started with "the Wealth of Nations" by Adam Smith probably even by his predecessors" (Pano & Angjeli, 2004, pp. 404-405). Solow followed the path outlined by Harrod and Domar who arrived at a classical response to the growing problem by saying that "savings make the economic

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[1] See, FDI Growth: Ozturk, I. FDI-Growth Nexus, Literature survey of empirical studies, pp. 86-91.

growth." But this does not forever provide higher growth rates. The introduction of a kind of technological flexibility by Solow gave new ways to the growth theory. Solow is considered the pioneer of the neoclassical theory of growth. It is "neo" in the sense that it significantly starts off the classical view of its analytical approach that places great emphasis on mathematical techniques. It should not be confused with the new classical economics. The rate of growth is exogenous and that in its creation do not participate work (L) and capital (K) only, but the level of technology too. But, from the 1950s until the 1990s, none of the initial growth patterns did not consider FDI as determinants of economic growth even though it was very clear that they are an important factor. After 1990s, researchers strongly accepted the growth pattern and each to their manner during their research found the models to fit the specifications of their countries. The Solow model generated other models, but their share is that everyone aims to find different factors that determine growth. Solow hosted an aggregate-function of production from Cobb - Douglas which I will also use extensively in my studies.

2.2. New Theory of Endogenous Growth

Since 1990s, many researches have taken place using new econometric techniques to make panel data analysis and there is a common consensus that FDI has positive correlation with economic growth. New Classics, the right side of economy, with the representatives, Robert Lucas, Edward Prescott, Robert Barro, Rebelo, Grossman, Helpman etc., have been the most influential economists since 1970. Lukas challenged the foundations of macroeconomic theory (previously dominated by Keynesian approach), arguing that a macroeconomic model should be constructed as an aggregated version of microeconomic models). Numerous studies have provided rational theories on direct impact of FDI on economic growth (Lucas, 1998; Rebelo, 1991; Romer, 1986 and 1993). Romer emphasized that FDI can be an important source of technology transfer and know-how in host countries. There are two main branches of the new theory of endogenous growth:

- ➢ the endogenous model - technological progress that generates external effects, the merits are attributed to the authors as Romer (1986) and Lucas, (1991) dissemination of knowledge. The authors stated dealt with externalities, emphasizing that it is the government arena how they provide priorities;
- ➢ CA model (Capital Accumulation) - production of technology by accumulating all kinds of capital, physical, human and knowledge, is known as Barro model, which gives special emphasis to the government, but there are also taken Grossman and Helpman (1990 and 1991) with particular emphasis on trade.

There is also a model in the context of the CA model, Rebelo's one, arguing that all types of capital are source of economic growth. Rebelo refers exactly to the Cobb - Dauglas function, which in this research essay is seen a methodology and model with priority to notice the FDI / GDP relation, and which is among the models applied the most due to the improvement (introduction of dynamism) by the new classics.

2.2.1. Endogenous Determination of FDI Growth and Economic Growth

Many studies have been made on economic growth based on the new model of endogenous growth, including developed countries and developing countries. Arguments pro growth have been found in most studies of the developing countries. In comparison with the neoclassical theory, the endogenous growth theory emphasizes the role of technological and capital transfer (Blomstrom et al.), training of workers and benefits of managerial skills (De Mello, 1997, 1999) and increases competition in the host countries.

But there are also studies that have found no positive effects on economic growth (Carkovic & Levine, 2003) refer to evidence found by Hans (2001). According to studies by Wang & Swain (1995), Moore (1993), Schneider & Frey (1985), the size of market, size of population, fast economic growth, per capita income, create conditions for multinational firms to generate growth. According to Lucas, countries which borrow more from abroad should be able to invest more (because they are less constrained by domestic saving), therefore, they should grow faster. There are financial obstacles and other structural ones that limit the ability of a poor country to absorb foreign capital. As regards the SEE countries, they are characterized as too promising for FDI.

FDI is an important factor in the economic aspect that unites states, regions and businesses. FDI is different from other types of capital flows, it includes not only the capital itself, but the transfer of technology and skills, managerial expertise and know – how, as well as the introduction of the new processing methods (Rodrik and Subramanian, 2008), Alfaro et al. (2004), Hermes & Lensink (2003), and Borensztein et al. (1998), who argue that the effect on FDI growth is conditioned on a number of factors that have different countries, but this is denied by Williams, Kevin (2010), who states that they are not conditioned, as an unstable policy of two countries, made one of these countries attract investments more than the other, because the political instability has not been the same in both countries, which is the same for other factors in most of the cases.

Studies of Borensztein and Alafaros, Hermes and Lesnik, have best expressed that to attract the FDI and better managerial practices, the host country should have at

least the minimum threshold of the necessary infrastructure, capital, education, stable banking system, and political stability. There are also other authors, as (Bezuidenhout, 2009) who states that FDI should be seen as a vital factor in growth, only if its revenues are properly managed. There are proposals that if a developing country seeks economic growth and welfare of its people, must use the mechanism of FDI. There should be attempted that the economic policies, regulatory framework on promotion and protection of investors and many other priorities are transparent and favorable. On the other hand, there are counter-arguments by the pragmatic nationalist theory the opening to FDI is seen as the loss of national sovereignty. Supporters of this idea point out that there is no link between FDI and growth and vice versa. According to them, FDI is wrongly seen as a solution to developing countries (Seatini, 2002). They see FDI as a package of entrepreneurs in search of continuous profitability and market of cheap labor in the host country. Such investments do not come as a charity issue, but rather they are against local enterprises. Therefore, "the open doors" to the policy towards FDI should not exist. They must be allowed through the national consensus and in accordance with certain performance requirements (Yash Tandon, 2002).

Table 1. FDI and growth: Review of literature by Ilhan Ozturk and 52 case studies, of three cases for transition countries see table[1]

Author/year	Countries in Transition	Period	Effects of growth in FDI
Mencinger (2003)	8 countries in transition	1994-2001	Negative
Nath (2004)	10 transition economies in Eastern Europe	1990-2000	Positive
Bacic et al. (2005)	11 economies in transition	1994-2002	Mixed result

From table 1, we conclude that in case the study involves countries with the same level of development but heterogeneous in macroeconomic indicators, institutional, tax reform, geographical position, size of population, market, education, technology absorption and managerial skills, results in most cases are as those in the table.

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[1]Paul Douglas explained that his first formulation of the function of production "Cobb – Douglas" took place in 1927, so he spoke with mathematician Charles Cobb who suggested to use the form of the function that had previously been used by Knut Wicksell.

So bringing closer the sample countries is necessary to achieve the correct argument. Per capita income is very important to the countries in transition, whereas to developing countries important is the size of market.

Ozturk has made a survey to the literature on economic growth caused by the induction of FDI, and according to statistics, there is a positive relationship in 90 percent of studies, which were mostly developing countries, whereas the samples of developed countries emphasized unimportant or neutral connection.

3. Impact of FDI in GDP, according to Cobb - Douglas Model

The economic growth[1] of the country can be explained using the Cobb-Douglas function.[2]

Production function in the following form:

$$Y = F (K, L, F, X) \qquad (1)$$

- where, Y is GDP[3] (monetary value of all goods produced within a year),
- K, capital - capital inputs - to the monetary value of all equipment, buildings inventory),
- L, human capital (total number of people - hours worked in a year),
- A, technological level,
- both L and A are supposed to grow at the rhythm (n) and (g) exogenous to the time (t),
- F is FDI; X represents other explanatory variables (variable which can affect on economic growth and FDI).

Thus we reach the fundamental and important function of the product. Vehorn & Vasarevic, p. 25)

$$Y(t) = K(t)^a (A(t) L(t)^{1-a} \quad 0 < \alpha < 1 \qquad (1)$$

Where At is productivity and the parameter is α, $0 < \alpha < 1$.

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[1] Economic growth is measured as percentage change in the Gross Domestic Product. Economic growth is attributed to the accumulation of human and physical capital and productivity growth arising from technological innovations. Economic growth is also the result of the development of new products and services.
[2] Paul Douglas explained that his first formulation of the function of production "Cobb – Douglas" took place in 1927, so he spoke with mathematician Charles Cobb who suggested sing the form of function that had previously been used by Knut Wicksell.
[3] It is known that the GDP equation is Y= C+I+G+NX, where C–consumption, I–investments, G–governmental spending and NX- net exports given by the difference between exports and imports (X-M).

Saving rate can be defined thus: sYt.

Production function per capita: $yt = kta$ At1-a   (2)

Total symbol (approximate) for the growth rate is:

$gt^y = agt^k + (1-a)gt^A$ (3) (Durnel, 2012, p. 20)

Equation 3 reveals the essence of Solow's proposal, which says that any increase in production growth (gY), can be done in two ways: capital accumulation and "technological process (Sorensen et al., 2010, pp. 57-211)." The regression model is used especially for imports and exports or for other aggregates that are important depending on the study case. Many explanatory variables are forgotten, for example, human capital and these were treated by other authors as Mankiw, Romer and Weil (1992). To complete the growth model some specifications of the countries must not be forgotten (OLI paradigm, Duning,[1]), therefore Islam (1995) reestablished the growth equation with a more dynamic model that allows involving of other explanatory variables in the panel data.

4. Negative Externalities from Consumption of FDI and GDP

Economic growth through fast industrialization and environmental consequences has sparked a fierce debate. Studies (Grossman and Grueger1991, Selden and Song 1994 Rothman 1998) support a U-shaped curve, the Environmental Kuznets Curve (EKC), which express the relationship between environmental degradation and economic growth, in most cases emphasizes that economic success of the countries has been reached at the expense of degradation of their environment. According to this curve relationship between economic growth and CO_2 emissions, means that economic growth worsens the environment while per capita income (PC)[2] are low. With the improvement of this indicator, the environment is improved. This is supported by Stern (2004) too. However, this is best expressed by Muhammad Shahbaz, Nasreen Samia and Afza Talat in their paper, using panel data of 110 developed and developing economies. Results showed that the environmental Kuznets curve exists and foreign direct investment increase the environmental degradation. Kuznets Simon in his first report in the U.S. Congress in 1934 said:

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[1] A very important theory that explains the activity of multinational companies and FDI is "the eclectic theory" of Dunning (1981). OLI paradigm provides a full explanation of the best ways to enter foreign markets. It is a very useful structure to summarize the different characteristics of enterprise opportunities to return to multinational ones, which helped the empirical assessment of this phenomenon. This paradigm is a mixture of three different theories and it takes into account three factors: (i) ownership advantages, (ii) location davantage, (iii) internalization advantages.

[2] Abbreviation (PC) in Table 1, expresses per capita income (living) in developing countries from 1986 to 2005, their growth and the effect of this increase in CO_2 reduction, caused by economic activity of enterprises.

welfare of a nation can scarcely be achieved by a measure of national income. In 1962, Kuznets states: differences should be remembered amongst the quantity and quality of growth, between costs and benefits, between short term and long term growth.

Table 2. This table should be edited as the three- lines table, the trend of FDIPC, GDPPC and CO₂PC in 110 countries

YEARS	FDIPC (US$)	GDPPC (US$)	CO$_2$PC(metric; tons)
1986-1990	75,58	4460,56	3,38
1991-1995	119,09	6025,87	3,53
1996-2000	259,64	6825,13	3,67
2000-2005	400,19	8307,06	3,82

According to table 2, the FDI annual average per capita amounted to US$ 400.19 between 2000 and 2005, more than triple amount for the period 1991-1995. As a result, the annual GDP average per capita increased from US$ 4,460.56 to US$ 8,307.06 during the same period. Economic growth has been associated with the problem of environmental pollution, but the higher the economic growth per capita is, the lower the pollution will be. For example, the average annual CO_2 emissions per capita increased by 3.38 metric tons from 1986 to 1990 and 3.82 metric tons during the years 2000-2005. For a better environmental performance, environmental regulations are essential means that from the economic activity of firms reduce the external cost they cause. Two thoughts are expressed in terms of this issue:

a. companies relocate their activities in developing countries to benefit from the low cost of production;
b. the benefit of investors from non-stringent regulations. But it is believed that foreign companies use best management practices and advanced technology that results in a clean environment in the host country (Zarsky, 1999).

Public reactions to the externalities in cases where companies operate according to their mentality do not achieve an efficient choice; there are various ways through which the government can intervene. Pigou suggested setting a tax on pollutants for each unit produced equal to the marginal damage that it causes an efficient level of output. (Rosen, 2003)

This should happen exactly in developing countries as they are the largest participants of global environmental pollution. When we consider that in developing countries the right to property in most cases is contestable then the

Cose's theorem (1960)[1], applies not satisfactory. This explains the effectiveness of policies in all countries with the aim of improving environmental performance on planet Earth (Pao & Tsai, 2011).
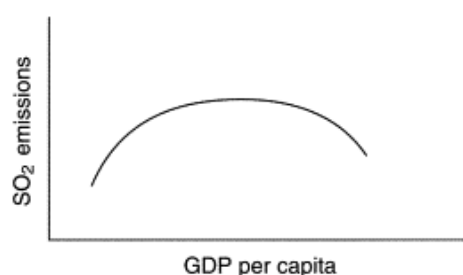

Figure 1. An empirical evaluation report of GDP environmental quality[2]

If we take only Kosovo as an example from SEE countries to argue this concern, Kosovo is the fifth in Europe in coal reserves, but its use has caused environmental pollution three times higher than the permitted standards. There is no doubt that FDI promote economic growth, but also negatively affect the environment (Xing & Kolstad, 2002). But if these plants are equipped with the perfect technology (technological transfers and know-how), then negative effects will be reduced to the extent of no inconvenience (Chay & Greenstone, 1998).

5. Conclusions

All empirical results analysed so far show that FDI is not given an unified theoretical explanation. This research essay analyses the impact of FDI on economic growth based on the framework of the new theory of endogenous growth. The neo-classics accept some of the classical values but they do not fully accept the theory of market economy. According to the neoclassical views, the role of technological change became crucial and more important than the accumulation of capital. Neoclassical theory has explained the return rates on portfolio investments between two countries but failed to explain the existence of FDI. New Theory of Endogenous Growth as advanced theory (Romer, Lucas) made a mathematical explanation of technological progress. This theory has also incorporated a new concept of human capital, the skills and knowledge that make

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[1] Suggesting that the government intervention is not necessary where the right of property is determined.
[2] Figure 1 in the best way presents the effect of these regulations on turning the level of SO_2 in 2008 to its starting point in 1988, when FDI gave their first effects of pollution.

workers more productive. Human capital is increased the return rate? Models that deserve attention within the framework of the neoclassical theory is the Sollow model and the application of the Cobb - Douglas function, while models within the new theory of endogenous growth are the Romer - Lukas model, - Rebelo's model and the Barro, Grossman and Helpman model. In the Endogenous Growth models the effects of economic integration are too essential. Countries which remove themselves from the free flow of ideas and knowledge and the new technology will suffer from stagnation. Successful economies are those with the highest rates of accumulation of human and physical capital based on technological progress. Economic growth is almost always accompanied by considerable fluctuations of relative sizes in individual sectors. In conclusion, authors and relevant institutions as Chenery & Strout (1996), Duning (1970), Todaro (1982), Krueger (1987) and the World Bank (1993), prove that FDI continuously promote the GDP growth. Among the arenas of governmental intervention are also externalities. A lesson to be learned from numerous studies that have been done is that prudent macroeconomic policies create more effective environment and promote the economic growth.

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Algerian Economy and Multilateral Trading System:
Why Is It So Hard to Join the WTO

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Abstract: The main purpose of this paper is to provide a overview on different stages of the negotiations with World Trade Organization, since 1987 date of submission the application for accession, Algeria still trying to snatch accession card with minimum cost, where it tries to provide small guarantees, but some WTO members raises reservations over some issues like aspects related to investment, for example: the Rule of 49/51, and domestic component, prevention of exporting, besides the agricultural issue which takes advantage of domestic subsidies and exporting subsides, also services industry knows low degree of openness, especially In some sensitive areas such as financial services, telecommunications.

Keywords: world trade organization; bilateral negotiations; multilateral negotiations; obstacles and challenges

JEL Classification: F15, F51, F53

1. Introduction

La libéralisation du commerce extérieur est l'un des facteurs les plus importants aidant à stimuler le développement économique, car l'ouverture économique des pays en développement contribue à réduire l'écart de pauvreté, créer des emplois, et attirer l'investissement étranger, L'Algérie est parmi les pays qui ont adopté une politique économique visant à une plus grande ouverture sur le monde extérieur, afin de se débarrasser des conséquences de la crise économique qui l'a frappée la fin des années quatre-vingt du dernier siècle.

La grande dépendance de l'économie algérienne concernant le secteur des hydrocarbures a contribué à la tendance rapide vers l'intégration de l'économie régionale par l'accord d'association euro-algérienne entre l'Algérie et les pays de

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l'union européen, et par un autre accord pour établir une zone arabe de libre-échanges (GAFTA), puis s'intégrer dans l'économie mondiale en essayant de rejoindre l'organisation mondiale du commerce.

L'objectif de cette étude est de tenter de comprendre les étapes des négociations de l'Algérie avec l'organisation mondiale du commerce, nous allons essayer de citer et d'analyser les défis que l'Algérie s'est lancées pour entrer dans L'OMC et les obstacles qui l'ont empêché d'y intégrer.

2. Les Reformes Economiques en Algérie

L'Algérie a connu à la fin des années quatre-vingt du dernier siècle une grave crise économique, suite à la chute des prix du pétrole, cette situation a forcé le pays à adopter des réformes profondes afin de s'orienter vers une économie de marché et renoncer au système de socialisme.

L'Algérie a donc adopté une série de réformes, notamment, l'abandon du monopole de l'état des opérations de commerce extérieur qui a été déterminé par la loi n° 78-02 et qui a été compensé par le décret exécutif 91-37 relatif aux conditions d'intervention en matière de commerce extérieur (Medjahed, 2008) et qui a pour but d'ouvrir la voie aux secteur privée pour leur faciliter les pratiques de l'importation et l'exportation. De plus, l'Algérie a engagé le programme d'ajustement structurel, dirigé par FMI en faveur des pays en développement pour les aider à sortir de leurs crises économiques.

L'Algérie a également imposé un certain nombre de mécanismes afin de favoriser les exportations hors hydrocarbures, comme la création de la compagnie algérienne d'assurance et de garantie des exportations (CAGEX), le fond spécial de promotion des exportations (FSPE), l'Agence Nationale de la Promotion du Commerce Extérieur (ALGEX), et a installé la chambre Algérienne de commerce et d'industrie, à noter, également, l'obtention de la signature de l'accord de partenariat Euro-Algérienne en 2005, et le fait de rejoindre la grande zone arabe de libre échange (GAFTA).

De l'autre côté de la promotion de l'investissement, une agence nationale pour soutien à l'emploi des jeunes (ANSEJ) et L'Agence Nationale de Gestion du Microcrédit (ANGEM) ont été établies pour le développement de l'esprit d'entrepreneuriat, assister les bénéficiaires du microcrédit, une Agence Nationale de Développement de l'Investissement (ANDI), a été créé en 1990, sous le nom Agence de Promotion, de Soutien et de Suivi de l'Investissement (APSI) pour l'accompagnement des investisseurs, la contribution à la mise en œuvre des politiques et stratégies de développement, la formalisation et L'information des investisseurs.

43

3. Situation Macroéconomique de l'Algérie: Etat des Lieux

Les indicateurs macroéconomiques de l'économie Algérienne présentent une situation confortable, pour le produit intérieur brut, l'Algérie a enregistré un taux de croissance positive pendant les dix dernières années, basé sur les dépenses publiques, et en particulier les dépenses d'investissements, malgré que ces chiffres ne soient pas convaincants par rapport aux montants de dépenses gouvernementales – plus de 600 milliards de dollars (2001-2015) -

Tableau 1. La croissance et le taux d'inflation en Algérie (2010-2014)

Les indicateurs économiques	2010	2011	2012	2013	2014
Taux de croissance (%)	3,62	2,83	3,3	3	4,34 (e)
Taux d'inflation (%)	3,91	4,52	8,89	3,25	4 (e)

Source: FMI-world economic Outlook database 2014, African economic Outlook, Ministere des finances Algérien, (e) Estimations

Pour les autres indicateurs macroéconomiques de l'Algérie avec le monde extérieur, et qui concernent le balance des transactions courantes, l'Algérie a connu une marge positive de 7,54 a 9.94 pendant les deux année 2010 et 2011, mais avec une estimation négative pour les prochaines années, les investissements ont enregistré un niveau stable grâce aux investissements relatifs aux réalisations d'infrastructures socio-économiques, par exemple en 2011, l'Algérie a réalisée plus de 212.665 logements et plus de 95.000 places pédagogiques, raccordement en gaz et en électricité, les routes, réalisation et modernisation des lignes ferroviaires (premier ministre, 2012), et pour le commerce extérieur, l'Algérie a connu une balance commerciale positive, plus de 26 milliards de dollars en 2011 et plus de 10 milliards de dollars en 2013.

Tableaux 2. Statistiques économiques avec le monde extérieur

Les indicateurs économiques	2010	2011	2012	2013	2014
Balance des transactions courantes (%)	7,54	9,94	6,02	0.45 (e)	0.48 (e)
les investissements (% de PIB)	27,56	25,69	29,78	32,94 (e)	31,79 (e)
Balance commercial (milliard dollars)	16,581	26,322	22,271	10,792	4,067 (a)

Source: Fmi-world economic Outlook database 2014, ministere des finances Algérien, direction générale des douanes, (e) Estimations, (a) jusqu'à fin avril 2014

4. L'Histoire de l'OMC

Les origines historiques de la création de l'organisation mondiale du commerce remontent a 1947 et exactement à ce qui est connu comme l'Accord général sur les tarifs douaniers et le commerce, à la fin de 1945 il y avait des réunions et des négociations commerciales entre 15 pays à Genève et à New York, et Londres, le but de ces réunions était de réduire les restrictions commerciales sur les échanges internationaux, et d'encourager la libéralisation du commerce, mais avant cela il était prévu de créer une organisation internationale du commerce (OIC), où 56 pays se verront réunis dans la capitale cubaine, La Havane, afin de mettre en œuvre les recommandations du Conseil économique et social des Nations Unies qui a recommandé d'organiser une conférence internationale sur le commerce et l'emploi, l'acte final de la charte de La Havane contient 106 articles, divisée sur neuf chapitres traitant: de l'emploi et l'activité économiques, le développement économique, la politique commerciale, les accords intergouvernementaux sur les produits de base, l'organisation internationale du commerce et le règlement des différends, les buts de cet acte final sont: (Conférence Des Nations Unies sur le Commerce et l'emploi, 1984, p. 12)

- assurer une ampleur croissante du revenu réel et de la demande effective, développer la production, la consommation et les échanges des biens, et contribuer ainsi à l'équilibre et à l'expansion de l'économie mondiale;
- aider et stimuler le développement industriel ainsi que le développement économique général, particulièrement en ce qui concerne les pays dont le développement industriel est encore à ses débuts, et encourager le mouvement international des capitaux destinés aux investissements productifs;
- faciliter à tous les pays l'accès, dans des conditions d'égalité, aux marchés, aux sources d'approvisionnement et aux moyens de production qui sont nécessaires à leur prospérité et à leur développement économique;
- favoriser, sur une base de réciprocité et d'avantages mutuels, la réduction des tarifs douaniers et d'autres entraves au commerce, ainsi que l'élimination des discriminations en matière de commerce international;
- permettre aux différents pays, en multipliant les possibilités d'accroissement de leur commerce et de développement de leur économie, d'éviter le recours à des mesures qui pourraient désorganiser le commerce mondial, réduire l'emploi productif ou retarder le progrès économique;
- faciliter, grâce au développement de l'entente mutuelle, des consultations et de la coopération, la solution des problèmes intéressant le commerce international dans les domaines de l'emploi, du développement économique, de la politique commerciale, des pratiques commerciales et de la politique des produits de base.

Cependant, le Congrès américain a refusé de ratifier le projet du document final de la Charte de La Havane et a empêché la création de l'Organisation international du commerce.

L'Accord général sur les tarifs douaniers et le commerce a nommé également sous le nom de «Protocole d'application provisoire», et pendant près de 50 ans, le GATT a connu huit cycles de négociations commerciales qui furent faits pour réduire les droits de douane, les mesures antidumping, les mesures non tarifaires, et dans le dernier round qui déroulait entre 1986-1994 (Le Cycle d'Uruguay) qui a **connu** un franc succès de **participation**, le but de ce round était de répondre aux inquiétudes des Parties contractantes comme: la structure institutionnelle du GATT, le système de règlement des différends (Love & Lattimore, 2009, p. 49), l'acte final a été signé lors d'une réunion à Marrakech au Maroc le 15 Avril 1994, et en 1995 l'OMC été crée à Genève.

Les domaines d'activité de l'OMC sont: les négociations commerciales, Assurer la transparence et la gouvernance, Assurer un règlement des conflits commerciaux, encourager les capacités commerciales des pays en développements, et les accords de l'OMC touchent les aspects suivants:

- les marchandises: Accès aux marchés, Agriculture, la politique de l'Antidumping, balance des paiements, droit de douane, sauvegardes et subvention;
- accord général sur les tarifs douaniers et le commerce (GATT 1994);
- les services: accord général sur le commerce des services (GATS), services financiers, télécommunications;
- accord sur les aspects des droits de propriété intellectuelle qui touchent au commerce (TRIPS);
- accord sur les mesures concernant l'investissement et liées au commerce (TRIMs).

Depuis sa création, l'OMC a connu neuf conférences ministérielles, le dernier a eu lieu à Bali (Indonésie), 3-7 décembre 2013.

5. L'Algerie et l'OMC

L'Algérie a fait la première demande pour adhérer à l'Accord général sur les tarifs douaniers et le commerce en 3 juin 1987, et le groupe de travail de l'accession de l'Algérie a été établi le 17 juin 1987, mais après la fin de l'Uruguay Round et la signature du Protocole relatif à la création de l'Organisation mondiale du commerce, la demande a été transférée à l'équipe de travail au niveau de l'organisation.

5.1. Les Négociations Multilatérales

Après la création de l'Organisation mondiale du commerce en 1994, la demande d'adhésion d'Algérie à l'OMC a été transférée à l'équipe du travail au niveau de l'organisation, et le 11 juillet 1996 l'Algérie a fourni l'aide-mémoire sur le régime de commerce extérieur, qui a inclus les points suivants:

- ECONOMIE, POLITIQUES ECONOMIQUES ET COMMERCE EXTERIEUR: économie, politiques économiques, le commerce extérieur des marchandises et des services, commence intérieur des services, renseignements sur les mouvements financiers en relation avec les nationaux travaillant à l'étranger, renseignements sur la croissance du commerce des marchandises et des services, au cours des dernières années et prévisions pour les années à venir.

- CADRE POUR L'ELABORATION ET L'APPLICATION DES POLITIQUES AFFECTANT LE COMMERCE EXTERIEUR: attributions des pouvoirs exécutif, législatif et judiciaire, entités gouvernementales responsables de l'élaboration et de la mise en œuvre de la politique du commerce extérieur, partage des responsabilités entre le gouvernement central et les collectivités locales, éventuels programmes législatifs ou plans de modification du régime réglementaire, lois et instruments juridiques, description des tribunaux et des procédures judiciaires.

- POLITIQUE AFFECTANT LE COMMERCE DES MARCHANDISES: réglementation des importations, réglementation des exportations, politique intérieure affectant le commerce extérieur des marchandises, politique affectant le commerce des produits agricoles, politique affectant le commerce extérieur dans d'autres secteurs.

- LE REGIME COMMERCIAL DE LA PROPRIETE INTELLECTUELLE: généralités sur propriété intellectuelle, redevances et taxes, mesures visant à empêcher l'usage abusif de droits de propriété intellectuelle, moyens de faire respecter les droits, liste des lois, décrets, réglementations et autres instruments juridiques.

- BASES INSTITUTIONNELLES DES RELATIONS COMMERCIALES ET ECONOMIQUES AVEC LES PAYS TIERS: accords bilatéraux ou plurilatéraux concernant le commerce extérieur des marchandises et le commerce des services, accords d'intégration économique, d'union douanière et de libre-échange, accords d'intégration des marchés du travail, coopération économique multilatérale, participation aux organisations économiques multilatérales, programmes d'autres organisations multilatérales qui touchent au commerce.

L'Algérie a également fourni des réponses aux questions des membres de l'équipe de travail, depuis 14 juillet 1997 en répondant à plus de 1930 questions, avec plus de 18 réponses additionnelles, qui ont touché les thèmes suivants: les mesures sanitaires et phytosanitaires, les obstacles techniques au commerce et mesures anti-dumping et le soutien interne et les subventions à l'exportation, les services, ADPIC.

Mais la première réunion du groupe de travail s'est tenu les 22 et 23 Avril 1998, et dans ce contexte, l'Algérie a connu 12 réunions du groupe de travail, le chemin des négociations était parsemée d'embûches, les réunions on été bloquées pendant 5 années à partir de 2008. En avril 2013, la onzième réunion du groupe de travail s'est tenue.

Entre-temps le secteur agricole l'Algérie à présenté des informations sur les politiques commerciales destiné à l'agriculture dans huit reprises, La plus récente était le 13 février 2013, où l'Algérie a fourni des explications sur les Politiques de soutien interne et des subventions des exportations, et sur le plan d'action législatif, les politiques commerciales ont beaucoup évolué par rapport à ce qui était précédemment établi après l'an 2010 ou l'Algérie a présenté trois révision.

Toutefois, les négociations sur l'accès aux marchés restent à leurs premiers pas, dont l'aspect du commerce, les marchandises et le commerce des services restent confrontés à des difficultés, en particulier du côté des mesures protectionnistes les marchandises pharmaceutique et le degré d'ouverture dans certains secteurs de services.

5.2. Les Négociations Bilatérales

Les négociations bilatérales des concessions et engagements en matière d'accès aux marchés pour les marchandises et les services avec les membres du groupe de travail, l'Algérie s'efforce de mettre fin aux négociations bilatérales avec 20 pays intéressés à accéder au marché algérien, cinq accords a été conclu avec: Cuba, le Brésil, l'Uruguay, la Suisse et le Venezuela, et il est prévu d'entamer des négociations bilatérales avec 11 pays, à savoir: l'Indonésie, les Etats-Unis, l'Equateur et l'Argentine, le Japon, le Salvador, l'Australie et la Corée du Sud, Canada, la Nouvelle Zélande ainsi que la Turquie (APS, 2014).

En ce qui concerne l'accès aux marchés des marchandises, l'Algérie a donné des propositions concernant les tarifs consolidés, et négocier pour une période de transition en faveur des industries locales émergentes (Benbada, 2014).

L'Algérie a également fait des obligations sur l'accès aux marchés des services, ce secteur continu à être un obstacle, surtout avec l'importance des concessions

accordées à l'Algérie, lorsqu'il est requis à l'Algérie de soumettre ces offres sur le degré d'ouverture du marché des services.

6. Les Obstacles Actuelle de l'Accession

Malgré les progrès réalisés au niveau des négociations multilatérales et les négociations bilatérales, des grands sujets restent des obstacles, les politiques le soutien menées par l'Algérie dans l'exportation, en particulier dans le domaine de l'agriculture où les agriculteurs bénéficient des nombreux mesures de soutien, telles que: le crédit «RFIK» qui octroyé par la banque BADR avec taux d'intérêts de 0%, ainsi, le programme «le Syrpalac 2» qui vise la préservation des revenus des agriculteurs et la stabilisation des prix à la consommation, et la prime aux productions et à la transformation pour le développement de la tomate industrielle, donc le soutien interne pour l'agriculture est réparti en deux parties: des primes, et des soutiens plafonnés.

Le soutien à l'exportation joue un rôle important comme un élément qui fait un freinage au processus d'adhésion, plusieurs mécanismes ont été créés pour promouvoir les exportations hors hydrocarbures notamment les produites alimentaires des PMEs, où l'Algérie a créé plusieurs organismes en vue de favoriser les exportations hors hydrocarbures telles que: le Fond Spéciale Promotion du Commerce Extérieur (FSPE) qui octroyée plus de 900 millions DA d'aides en 2013 (ministère de commerce, 2014), aussi Agence Nationale de la Promotion du Commerce Extérieur (ALGEX) qui apporter une assistance au profit des entreprises algériennes qui souhaitent commercialiser leurs produits sur les marchés internationaux.

Et en ce qui concerne les accords internationaux sur la protection des droits intellectuels, l'Algérie a établi l'Institut National Algérien de Propriété Industrielle (INAPI) en 1998 pour assure la mission de protection des droits de la propriété industrielle, en 2010 ont été enregistrés 806 brevets et plus de 3625 marques nationales au niveau de l'institut (INAPI, 2011), malgré tout cela, les produits de contrefaçon représentent plus de 500 million de dollars, la majorité de ces produits viennent de la Chine, le Maroc et les Emirats Arabes Unis.

Un autre sujet qui représente un mal de tête aux parties de la négociation, c'est les investissements, où est l'environnement des affaires en Algérie est le plus faible dans la région, et selon «doing business» l'Algérie est classée à la 153ème position, la règle 49/51 qui a été mise en place en 2009 dans le cadre de loi de finances, représente aussi un risque pour les investisseurs étrangers, cette règle qui oblige des intérêts nationaux à prendre la majorité au capital des projets d'investissements, en outre la prévalence élevée de la corruption.

7. Conclusion

L'Algérie va doucement et avec un bon rythme vers l'adhésion à l'Organisation mondiale du commerce, tous ceux qui se connaissent dans le domaine ont pu constaté qu'elle a marqué un progrès significatif durant les dernières années, malgré les obstacles qui peuvent empêcher le bon déroulement du processus d'adhésion notamment sur le secteur de l'agriculture et les services.

Cette contribution nous a permis de faire une analyse sur une question fondamentale qui est axé sur L'avenir de l'économie algérienne en fonction de la tendance à conclure des accords de l'organisation mondiale du commerce, ou l'économie algérienne est caractérisée par la faiblesse des capacités des exportations du secteur hors hydrocarbures et une grande dépendance des importations. A ce titre, l'Algérie n'aura pas beaucoup à gagner d'entrer dans l'organisation mondiale du commerce, car la majorité des exportations sont des produits de secteur des hydrocarbures,

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The Factors Affecting the Money Left on the Table by Pakistani IPO Issuers

Atif Kafayat[1], Abdul Rafay Farooqi[2]

Abstract: This study is about the level of under-pricing of 30 IPOs of eleven different sectors listed on Karachi Stock Exchange from the period 2006 to 2013. We also examined the factors that influence the money left on the table by IPO issuers in Pakistan. Like other countries, the under pricing was also found among the Pakistani IPOs. The sectors consist of Close Ended Mutual Fund, Commercial Banks, Modarabas, Investment Banks/Investment Companies, Textile Spinning, Miscellaneous, Chemicals, Engineering, Cement, Telecommunication and Power. The entire sample shows that market adjusted abnormal return of 68.22% is there in the sector of commercial bank, 14.88% in sector of Modarabas, 38.31% in investment banks and investment companies sector, 97.51% in Miscellaneous sector, 66.99% in Chemicals sectors, 143.66% in Engineering sector, 25.36% in Cement sector and 251.24% in power sector while investors have faced loss -21.45% in Close-End Mutual Funds sector, -32.89% in textile spinning sector and -19.84% in telecommunication sector. We have used the regression analysis to observe the level of under-pricing regarding eleven different sectors. Among the variables we use in our study ex-ante uncertainty and over-subscription variables showed significant effect while the other variables which include proportion of shares offered to general public, log of offer size and market volatility did not show great effect on the under-pricing.

Keywords: IPO (Initial Public Offering); MV (Market Volatility); MAAR (Market Adjusted Abnormal Returns); EAU (Ex-ante Uncertainty)

JEL Classification: G1, G2

1. Introduction

Initial Public Offering (IPO) is said to take place when any company floats its shares in the public and thus finances itself through equity financing. The amount of money left on the table is defined as the difference between the offer price and the closing price of the first trading day for a given stock. It can also be given as

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the decreased offer price and what actually should be the price of the IPO. That is the price less than its fair market value. This is also called under-pricing of IPOs.

This can be explained as when companies float its shares in the public, they offer their shares at a price which is dropped to a certain level that it creates a significant level of under-pricing. When IPO is issued it is considered to be a risky venture and companies do not really want that their shares are not purchased by general public due to its excessive price. This is the amount which is left by the IPO issuer on the table. The issuer could have gained more returns if the IPO was priced at its intrinsic fair market value. But by pricing low it has left some significant amount of money on the table which could have otherwise been gained. Furthermore, some companies hire underwriters and these underwriters join together to form a syndicate. These underwriters have the liability to sell the shares at a particular price. If the shares are not purchased by the general public as it was anticipated in the book building process, then all the loss will be borne by the underwriter or the syndicate. In order to avoid this liability and the risk associated with it, the price is lowered to such an extent that investors will purchase these securities and may find it undervalued. A share is considered to be underpriced if the offer price is considerably low as compare to the closing price of that IPO. The market adjusted abnormal return is given as the difference between the returns of the Initial Public Offering (IPO) and the market returns during the same time period.

Initial public offering (IPO) can be issued at any time in the life of corporation. IPO is issued when the stock of the company is issued for the first time. But when the stock is issued second time, it is called seasoned equity or second issue. Many companies throughout the world have gone public and they have offered its shares to the investors. In Pakistan, there are number of companies which are going public and floating its shares for the general public. These companies have chosen the method of financing itself through equity. The trend of issuing IPO is increasing as more and more companies are issuing IPOs in Pakistan. In the past, the Stock Market has seen a rapid growth taking the stock market index (KSE-100 index) above the 15000 points. But if you look at the most recent past, the Stock market has crashed and reached as low as 5000 points. The uncertainty and high volatility has resulted high risk as well as high returns in the stock market. The risk in the stock market is due to many reasons and different policies. These anomalous behaviors of stocks are very unusual in nature. No definite reasons are there to explain the trends in the stock market of Pakistan. Some of these issues regarding the level of under-pricing of IPO in Pakistan are addressed in this research.

1.1. The Objectives of this Study

The objectives of this study are as follows**:**

1. to identify the factors which affect the money left on the table by the IPOs of Pakistan issuing firms and which variable is significantly affecting its level;

2. to measure the performance of Pakistani IPOs in the short run which is the performance on the first trading day in the Karachi Stock Market

2. Literature Review

Inseok Shin (2009) in his article compares the price support mechanism between the Korean Stock Market and US Stock Market. The book building method was present in Korean as an official IPO method for a long time period, in Korea the underwriter's role was severely limited as compare to the US. The underwriter could only select prices within the given interval around the weighted average of the prices. This restriction was lifted later on. In Korea, the price support regulation is direct cost associated with the underwriters. There is a bargain between the underwriter syndicate and the issuing company. In his study, he constructed a model which determines the price of an IPO through interactions of the underwriter syndicate and the issuing firm. He further argues that the regulatory change in 2003 affected the mechanism of under-pricing because it changes the cost associated with underwriters.

In his hypothesis 1 he argues that the level of the underwriter's effort increases as the level of the IPO prices decreases. When it raises the IPO price it increases the effort of the underwriter to lower the price of the IPO. In hypothesis 2, he states that the level of the underwriter's effort well as the level of the issuer's effort increases with the passage of time. This shows a positive relationship between the two variables. However, there is a significant relationship between effort of the issuer and the underwriters as well as the under-pricing. In Hypothesis 3, he states that after the regulatory change in August 2003, the magnitude of the relationship between the newly issued shares is less than IPO returns.

The result shows that the coefficient estimates are significant. The regressions are quite higher for sample data. The coefficients of interest display the changes in magnitudes, as predicted by the hypotheses. Hypothesis 1, had been proved with (significant at the 5% significance level), but became insignificant there after. Hypothesis 2 had been proved valid also. When the investors are expecting that the prices will exceed their own valuations of future dividends. The results of the paper suggest that the same study can be done with different variables and even different

exogenous environment that changes the decisions of underwriters. Therefore, the key to this study and move further is to understand the external environmental conditions and other factors.

Muhammad Khalid Sohail and Abdul Raheman (2009) studied the level of under pricing of companies of Pakistan. In Pakistan under-pricing was present in majority of the IPOs as it was there in IPOs other countries. They also discussed the long run performance of Pakistani IPOs by using Cumulative Abnormal Returns (CAR) and Buy and Hold Abnormal Returns (BHAR) models. They also showed analysis on these models by applying yearly data. The collected sample data consisted of 50 IPOs under which the majority of new issues of companies floated on the KSE from year 2000 through year 2006 falls. Data was collected from the website of Khistocks and business recorder, while the KSE data base, company's annual reports were also used as a source of information and relevant data. Out of this data the financial sector and the non financial sector covered the 50% of the total sample size.

Variables include the Market adjusted abnormal returns, which is used as dependent variable and under-pricing is calculated through this variable. Some other independent variables include the ex-ante uncertainty and this is the standard deviation of daily returns of IPOs. Log of Market Capitalization is the natural log of market capitalization of the IPO issuing firm. Another variable is the Incidence of secondary market issues. Market volatility is another variable and is calculated as standard deviation of daily market return of stock market.

The offer size variable is also given as Log of offer size. Among the other variables include the proportion of shares offered to general public, and oversubscription variable which describes the over subscription of shares. Price to earnings ratio is used as a proxy variable to measure the firm's value. The last variable is market adjusted return after one year. They used four hypotheses in order to measure the under-pricing of IPOs, IPO's performance after 1-year and Cross-sectional Regression Analysis. The model they specified were market adjusted model, cumulative abnormal returns, buy and hold abnormal returns and cross sectional regression analysis.

The results are similar to the previous researches conducted in the other countries. The under-pricing is also shown in IPOs of Pakistan. The results show that the IPOs give significant initial excess returns in line which verifies the under-pricing of IPOs.

3. Methodology

In this portion of research, all the variables are equally important that determine the amount left on the table by IPO issuers by applying statistical techniques.

3.1. Sample Data

The sample data consists of 30 IPOs which covers 86% of the total number of IPOs listed on the Karachi Stock Exchange. The data has been collected from year 2006 to 2013. The data for our variables is gathered from the KSE official website, the website of business recorder and khistocks website. All these data consisted of 11 different sectors which include Close Ended Mutual Fund, Commercial Banks, Modarabas, Investment Banks/Investment Companies, Textile Spinning, Miscellaneous, Chemicals, Engineering, Cement, Telecommunication and Power.

3.2. Variables

All the variables are factors that equally affect the level of under-pricing in Pakistani IPOs. All these variables have been selected from research work of M. K. Sohail and Abdul Rehman (2009). Out of these variables, only one variable is dependent which the Market Adjusted Abnormal Returns is. The hypothesis is studied by using these variables.

MAAR: Market Adjusted Abnormal Returns is the only dependent variable and the amount of money left on the table is calculated by this variable.

EAU: Ex-ante Uncertainty is the independent variable which measures the volatility of new issue on KSE for over one month from the date of formal listing. It is the standard deviation of these above mentioned daily returns.

LMC: This variable is Log of Market Capitalization, which is the Market Capitalization of IPO gathered on the 10th day of listing in the stock exchange. The log taken is the natural of each value.

MV: This variable is the Market Volatility of the Karachi Stock Exchange returns for two months before the closing date of subscription. It is also calculated as standard deviation of these daily market returns.

LOS: Log of Offer Size, is another independent variable which is measured as number of shares offered multiplied by the offering price of that share. The log taken in this variable is the natural log for each offer size value.

PSO: Proportion of Shares Offered is measured as the percentage of shares offered to employees and general public.

OS: Oversubscription Variable measures that how many times the offered shares are oversubscribed. It is calculated as dividing the number of shares subscribed by number of shares offered.

All the above mentioned independent variable affects the Market Adjusted Abnormal Returns which is the dependent variable in a positive or negative way. As we have discussed in the literature review that there will be positive relationship with PSO, EAU, MV, OS and negative with LMC and LOS.

3.3. Hypothesis and its Testing

1. the amount of money left on the table (under-pricing) regarding IPOs is different from zero is tested. This hypothesis is tested by regression analysis;
2. there is a positive relationship with variable MAAR and variables PSO, EAU, MV and OS. This hypothesis is tested by regression analysis;
3. there is a negative relationship with variable MAAR and variables LOS and LMC. This hypothesis is tested by regression analysis.

3.4. Model Specification

3.4.1. Short Run Performance

The Pakistani IPOs short run performance is measured by market adjusted model and it is calculated for money left on the table.

$$R_{i,1} = \frac{P_{i,1}-P_{i,0}}{P_{i,0}} \qquad \text{and} \qquad R_{m,1} = \frac{I_{m,1}-I_{i,0}}{I_{i,0}}$$

Where P is the price of stock 'i' at the close of the first trading day of the issuing stock, i, 0 P is the offer price of the issuing stock and i, 1 R is the total first-day return which is the simple return on the stock 'i'. $m,1$ I is the market index value at the close of first trading and $m,0$ I is the market index value on the offer day of the appropriate stock, while $m,1$ R is the first day's equivalent market return. The under pricing is calculated by taking the difference of both the above mentioned returns. It is given by the formula;

Market Adjusted Abnormal Return (MAAR) = $R_{i,1}$ - $R_{m,1}$

3.4.2. Regression Analysis

MAARi: It is the Dependent variable used for amount of money left under the table by IPO issuers.

a: The intercept of the model

ß: Coefficient of the X variables (independent variables)

Xi: Independent variables used to determine amount of money left under the table by IPO issuers.

MAAR$i = \alpha + \beta_1$ EAU$i + \beta_2$ LMC$i + \beta_3$ PSO$i + \beta_4$ MV$i + \beta_5$ OS$i + \beta_6$ LOSi +ei

4. Data Analysis & Discussion

Descriptive and quantitative analysis is discussed in this portion of study. In this part, we provide an analysis of under-pricing. Second, we use regression analysis to find the determinants of under-pricing in different sectors.

4.1. Measure of Under Pricing

In our research it is observed that on average, under pricing of IPOs is there in the market. The investors gain abnormal returns by purchasing shares at subscription price and then selling them at close of the first trading day of their listing on the Karachi Stock Market. Our results show that 64% IPOs have given abnormal market return which shows that the IPOs were underpriced. As in the developed market the underpricing is still present among the IPOs of Pakistan. The investors have earned profit of 68.22% in the sector of commercial bank, 14.88% in sector of Modarabas, 38.31% in investment banks and investment companies sector, 97.51% in Miscellaneous sector, 66.99% in Chemicals sectors, 143.66% in Engineering sector, 25.36% in Cement sector and 251.24% in power sector while investors have faced loss -21.45% in Close-End Mutual Funds sector, -32.89% in textile spinning sector and -19.84% in telecommunication sector.

The entire sample shows that market adjusted abnormal return of 68.22% is there in the sector of commercial bank, 14.88% in sector of Modarabas, 38.31% in investment banks and investment companies sector, 97.51% in Miscellaneous sector, 66.99% in Chemicals sectors, 143.66% in Engineering sector, 25.36% in Cement sector and 251.24% in power sector while investors have faced loss -21.45% in Close-End Mutual Funds sector, -32.89% in textile spinning sector and -19.84% in telecommunication sector. These findings disprove our null hypothesis 1. Based on our these findings, we may say with a confidence level of 95% that if investors subscribed for shares in the new issues of Close Ended Mutual Fund they would have faced loss of -21.45%, profit of 68.22% in Commercial Banks, 14.88% in Modarabas, 38.31% in Investment Banks/Investment Companies, loss of -32.89% in Textile Spinning, profit of 97.51% in Miscellaneous, profit of 66.99% in

Chemicals, in Engineering 143.66% 251.24%, 25.36% in Cement, loss of -19.84% in Telecommunication and profit of 251.24% in Power sector.

For the period of 2006-2013 the market adjusted abnormal return for the initial first day of IPOs is computed. It is calculated by calculating the Initial Raw Returns, Market Returns and then taking the difference to obtain the Market Adjusted Abnormal returns. It is shown in the data that the average first day return of Pakistani IPOs is positive for every year from 2006-2013. Sector-wise analysis is also shown in results of our study. The under-pricing is present in every sector except Close-End Mutual Funds sector, textile spinning sector and telecommunication sector. The average market adjusted abnormal rate of returns that is given for all sectors lies between -32.89% and 251.24%. From all these sectors under study the sector of Power has given maximum level of returns. Furthermore, high initial raw returns have been observed in sectors Engineering, Commercial Banks, Chemical and Miscellaneous. In these sectors, the average market adjusted abnormal returns is more than 66%, which is higher than the average market adjusted abnormal return of whole the sample of 30 IPOs. While the remaining sectors indicate lower average market adjusted abnormal returns.

4.2. Regression Analysis and its Results

Regression Analysis has been used to explain variation in under pricing. The results are shown in **Table 1.**

Regression Statistics					
Multiple R	0.7559				
R Square	0.5711				
Adjusted R Square	0.4596				
Standard Error	0.5972				
Observations	30				
ANOVA					
	df	*SS*	*MS*	*F*	*Significance F*
Regression	6	10.940	1.823	5.112	0.0018
Residual	23	8.2032	0.3566		
Total	29	19.143			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%
Intercept	-1.7429	5.6417	-0.3089	0.7601	-13.413
PSO	0.0312	0.0498	0.6338	0.5324	-0.0713
EAU	-5.4827	2.2830	-2.4012	0.0248	-10.204
OS	0.17592	0.03434	5.1227	3.442	0.1048
LMC	-0.01184	0.0858	-0.1378	0.891	-0.1894
LOS	-0.0518	0.0917	-0.5658	0.577	-0.2415
MV	-672.35	1170.2	-0.5745	0.571	-3093.2

The results indicate that regression model is highly significant with F-statistic 5.11. The adjusted R square at 57.14 percent and at 45.96 percent shows that a large variability of under-pricing of IPOs listed at KSE.

The results of regression model show that a positive and highly significant relationship between Over Subscription and the level of under-pricing. This is due to the fact that investors are buying those shares in larger quantities which they expect to perform well in the market. This result supports M. K. Sohail and Abdul Raheman (2009). While the only other significant variable is Ex Ante Uncertainty but it is showing negative relationship. The investors are willing to pay more for the uncertainty for a particular stock. This result supports M. K. Sohail and Abdul Raheman (2009). As the results of variable LMC suggests, there is an insignificant and negative relationship between LMC and the level of under-pricing variables. These results are contrary to M. K. Sohail and Abdul Raheman (2009). Negative and insignificant relationship was found between LOS and the level of under-pricing. These results are somewhat contrary to M. K. Sohail and Abdul Raheman (2009) as they also found the negative relationship. There is a negative and insignificant relationship between MV and Underpricing.These results are highly contrary to M. K. Sohail and Abdul Raheman (2009) the table shows the results of variable PSO, that there is an insignificant and negative relationship between LMC and the level of under-pricing variables. These results are similar to M. K. Sohail and Abdul Raheman (2009).

5. Conclusions

We have studied the amount of money left on the table and also the factors that affect this amount by IPO issuers in Pakistan from 2006-2013. This study was done in 11 sectors comprising of Close Ended Mutual Fund, Commercial Banks, Modarabas, Investment Banks/Investment Companies, Textile Spinning, Miscellaneous, Chemicals, Engineering, Cement, Telecommunication and Power.

The result is similar to previous research that was conducted by M. K. Sohail and Abdul Raheman as we have adopted the same method. The under-pricing is also found among the IPOs of developed markets. So the amount left under table is also found in IPOs of Pakistani firms. Our results have shown that the IPOs of Pakistan have given statistically significant market adjusted abnormal returns.

The investors have earned about 36.44 % average profit by purchasing IPOs offered during year 2006-2010. The investors have earned profit of 68.22 % in the sector of commercial bank, 14.88% in sector of Modarabas, 38.31 % in investment banks and investment companies sector, 97.51% in Miscellaneous sector, 66.99 % in Chemicals sectors, 143.66 % in Engineering sector, 25.36 % in Cement sector and 251.24 % in power sector while investors have faced loss -21.45% in Close-End Mutual Funds sector, -32.89 % in textile spinning sector and -19.84 % in telecommunication sector.

By applying the regression model, our results show that Over Subscription and Ex-Ante Uncertainty are the only significant variables among 11 different sectors which consist of Close Ended Mutual Fund, Commercial Banks, Modarabas, Investment Banks/Investment Companies, Textile Spinning, Miscellaneous, Chemicals, Engineering, Cement, Telecommunication and Power for determining the amount of money left on the table by IPO issuers. The other variables which include Proportion of shares offered to general public, over subscription, log of market capitalization, log of offer size and market volatility have given some value for describing amount of money left on the table by IPO issuers. There are many issues in our study which should be addressed in the field of IPO under-pricing in Pakistan. Majority of our variables were insignificant and can be changed when calculating the under-pricing. These variables can be taken from any other previous researches which have been done in other under-developed markets.

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Cross-cultural Exploration of Consumers' Beliefs and Behavioral Intentions towards QR Codes in Marketing: An Experimental Study in India and USA

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Abstract: Current study focuses on examining consumers' beliefs and behavioral intentions towards QR Codes in marketing across different cultures such as India & USA. Study also examines select variables that moderate the relationship between beliefs and behavioral intentions. For this a scenario based experimental design was used. Findings suggest positive relationship between beliefs & behavioral intention and between culture & beliefs. Based on the empirical findings, study make important implications for the marketers so as to bring effectiveness in QR Code based marketing campaigns. Use of QR Codes in marketing is prevailing rapidly, however its effective integration in marketing mix remains mysterious as very little is known about consumers' beliefs and behavioral intentions towards it. Reason is that such academic research is practically non-existent, thus current study is of particular value.

1. Introduction

Since its launch, mobile phone penetration has been explosive worldwide and mobile phones have been adopted at fastest rate leaving behind the adoption of other information & telecommunication technologies like landline phones, pagers, internet (ITU, 2010). At present, Western Europe exhibits the highest mobile phone penetration, followed by North America & Asia and worldwide mobile phone penetration has already touched 86.7% mark (The World Fact Book, 2011; Mobi Thinking 2011, June). This is one of the reasons why recent years have witnessed growing interest of marketers in mobile phone as a channel of marketing communication and it will continue to gain marketers' attention further (Wohlfahrt, 2002). The high global penetration of mobile phones is only one indicator of the high potential of mobile marketing. The specific characteristics of the mobile phone like geo-targeting, ubiquity, immediacy, customization, measurability and interactivity encourage use of mobile phones in hardcore marketing (Bauer et al.

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2005; Haghirian et al., 2005). Further, use of mobile phones in marketing offers diverse modes matching desired communication viz. SMS (Short Message Service), MMS (Multimedia Messaging Service), WAP (Wireless Access Protocol), Mobile Videos, JAVA apps etc. (Beschizza, 2009).

Apart from above modes of mobile marketing, one very innovative mode has been catching marketers' eyeballs in recent times in current digital space i.e. QR Codes. QR Code is an abbreviation for Quick Response Code. Basically it's a 2D code which once scanned by a Smartphone -with a scanning application software either preinstalled or downloaded like Scanlife, RedLaser, i-nigma, QuickMark & an active internet- connects user to some specific online content say connecting to a website, linking to an email address, delivering e-coupons, texting, leading to registration etc. (Handley, 2012, Feb; Bisel, 2011). QR Code was first conceptualized by Denso Wave, a Toyota subsidiary in Japan in 1994. Intention was quick and convenient tracking of vehicles, as a QR Code was able to accumulate 10 times more information than a simple barcodes and can be scanned at very high speed with great ease. Because of QR Code's efficiency in the auto industry, marketers later began to realize functionalities of the QR Code which could be transferable to marketing domain i.e. potential to connect easily & swiftly with customers on the go (the quick part of QR Code) and encourage customers' engagement (the response part of QR Code). Thus QR Code became commercialized in 2011 with the telecommunications industry picked up on the trend and with the growth of Smartphones (Denso-wave n.d.).

1.1. Marketing Potential of QR Codes

Consumers have different expectations on mobile—they want easy access and a quick payoff – Chan, H. (2011)

QR Code offers gamut of advantages to marketers due to unmatched technological capabilities. QR Codes are open as Denso Wave (developer of the QR Code) not patented it, thus tools to generate & scan-decode QR Codes are freely available. This enables marketers to easily implement their campaigns and supports consumers to scan the codes used in those campaigns (Matt, 2011, Sep). A QR Code is Omin-directional scannable which means unlike barcodes, it can be scanned from any angle due to position detection patterns on three corners of the code thus offering further ease to consumers. Further, QR Code can be divided into multiple data area allowing printing in a narrow area due to structure append feature of code. Another interesting attribute of QR Code is error correction capability which means data can be restored even if a QR Code is damaged up to 30%. QR Code also offers great versatility to marketers as they can be enlarged to the size of a billboard or minimized to the size of a stamp (QRCodedotcom, 2011)

and as being simply an image so can be printed on any surface like newspaper, magazine, billboard, product packaging, product itself, visiting card, in-store and pamphlet (Bisel, 2011). Even these black & white codes can easily to be transformed to "designer" QR code by adding colors and putting brand name or logo in the forefront of the code image (Podfigurny, 2011). Further, QR Code enables marketers to track the number of scans on each code and identify which medium the scan came from - newspaper, magazine, billboard, etc. This is certainly a great aid to marketers in measuring consumer activity at micro level and analyzing the effectiveness of various advertising mediums used by them (Patel, 2012). Finally, at their best QR Codes can bridge the online and offline worlds as a QR Code provides possibility of integrating online content say a website and offline content say a newspaper ad. Thus QR Code enables markets execute multichannel marketing and enrich their marketing efforts in an unmatched creative way (Handley 2012, Feb). And, for consumers it means offering an exciting avenue of interactivity, engagement & exploration (Bisel, 2011, Sep). All above benefits reflect that the QR Code can become the crest of tremendous customer engagement & lead generation tools. Certainly, QR codes can significantly enhance the return on marketing investment (Podfigurny, 2011).

1.2. Current Status of QR Codes in Marketing

Many technologists think that advantageous innovation will sell themselves, that the obvious benefits of the idea will be widely realized by potential adopters, but situation is different – Rogers, E. M. (2003)

Today one of the most ubiquitous trends in marketing is the use & analysis of QR Codes especially in Japan, USA and Western Europe. Further, with the increased adoption of Smartphones, they are rapidly gaining in popularity across Asia especially in India, Korea, Indonesia. Definitely high penetration level of the Smartphones is the biggest driver of commercial popularity of QR Code in marketing (Denso-wave n.d.; Pola, 2012). Last couple of years observed tremendous growth in both QR Code usages and QR Code scan worldwide. From January 2010 to January 2011, QR Code scans increased by a whooping rate of 4549% (Daniells, 2011). Similarly, ScanBuy - on the basis of analysis of scans coming from 128 countries - found that between April and June 2011 there was an 850% increase in active users, a 400% increase in scanning application downloads, and an 810% increase in total QR Code scans (Tolliver-Walker, 2011). Currently, 11 out of 50 Fortune companies are incorporating QR codes into their marketing strategy (Daniells, 2011).

Despite the rapid growth of QR Codes many critics are convinced that QR codes are just a fad and marketers are merely following QR Code trend in order to give

off the "innovative impression" to their consumers and competitors (Patel 2012). But, on the other hand many think that QR Code itself is a very powerful & cost effective tool, problem is in its application part. According to them, these are the marketers who are not focusing on clear objectives and value addition thus failing to drive customer engagement through QR Codes (Podfigurny, 2011; Jason, 2011; Handley, 2012; Kats, 2012; Anonymous, 2012; Kats 2012). For example, a QR Code scan simply leading to homepage of a website which is not optimized for mobile phones or a QR Code placed on billboard on a speedy highway. Further, some authors are of opinion that problem area is awareness about QR Codes and marketers must increase awareness level of consumers on QR Codes -how to get a scanner, how to scan a codes, what to expect from a code scan- so as to lead easy diffusion of QR Codes (Tolliver-Walker, 2011; O'Reilly 2011; Cummings, 2011). As O'Reilly (2011) suggests marketers should focus on educating consumers about their purpose, rather than simply adding QR Codes to their products and advertising campaigns. Reason being just 36% of consumers know what OR Codes are for and how to scan them, despite the growing number of brands using the QR Codes.

1.3. Scope of the Study

Earlier, couple of studies did preliminary exploration on use of QR Codes in marketing (e.g. Okazaki et al., 2012; Probst, 2012). However none had a focus on behavioral intentions part, but on consumers' perception only. Secondly, both of the above studies focused on developed countries only (Japan & USA respectively); whereas research on developing country like India is practically nonexistent. This study focuses on in-depth exploration of consumers' beliefs & behavioral intentions towards 'QR Code in Marketing Promotions'.

Study further attempts to explore consumers' beliefs about QR Code marketing across cultures like India and USA. Reason being that the culture & advertising are intrinsically linked and impact of culture on consumers' beliefs and attitudes towards marketing promotion is well documented in the literature (Durvasula & Lysonski, 2001; La Ferle et al., 2008; Roberts & Ko, 2001; Mooij, 2011; Wang & Sun, 2010a; Wang &Sun, 2010b). India and USA are the two countries selected for cross-cultural comparison because both have entirely different cultural orientation and both differ in terms of technological & socioeconomical environment. These differences render a meaningful comparison to examine the impact of culture on QR Code marketing. Because on one hand, USA has high penetration of Smartphones - basic device required for code scanning- and enjoys most QR Code scans after Japan (infographics 2011). Further, the country was the origin of 48.1% of total global QR Codes in Q1 2012 and thus retained its number one position as a

country with maximum origin of QR Codes (QRStuff ,2012). In June 2011 approx 14 million USA consumers i.e. 6.2 percent of the total USA mobile audience scanned a QR code which is substantial for such a new concept (MobiLens, 2012). On other hand in India, Smartphone penetration is low and Smartphones constitute only approx 8% of total mobile phones in the country (Gartner, 2009). Further, India attained 1.8% of total global QR Codes in terms of country of origin and gained 6th position worldwide in number of QR Code origin (QRStuff, 2012). But India is witnessing rapid diffusion of the Internet & Smartphones so, it is sensible to analyze QR Code marketing in India along with USA.

At last, this study attempts to explore moderating role of select variables on the relationship between culture & consumers' beliefs. The findings may offer some valuable perspectives on the evolving nature of QR Codes in marketing and may provide useful implications for businesses to expand across cultures.

2. Literature Review

2.1. Relationship between Beliefs & Behavioral Intentions

Individual's behavioral intentions, in psychology are assumed to capture the motivational factors that influence a particular behavior, thus they are indications of how much of an effort that individual is planning to exert and of how hard s/he is willing to try, in order to perform the behavior (Ajzen, 1991). Many authors tag individual's intention to be outcome of his/her set of beliefs (e.g. Heider, 1944; Milier, 1956; Anderson, 1974; Godin & Shephard, 1987; Wu & Wang, 2005). As a general rule, the more favorable the beliefs with respect to a behavior, the stronger should be an individual's intention to perform that behavior referred as behavioral intention (Ajzen, 1991). Thus individual forms beliefs about an object by associating it with certain attributes and ultimately get linked with the particular behavioral intention. It is these salient beliefs that are considered to be the prevailing determinants of an individual's behavioral intentions and subsequent actions (Wang & Sun, 2010a).

In similar manner, authors report consumers' beliefs about marketing promotions (both offline & online media) to be determining consumers' behavioral intentions towards advertising (Ducoffe, 1996; Mehta, 2000; Brackett & Carr, 2001; Tsang-Sing et al., 2004; Bamba & Barnes 2006; Karson et al., 2006; Chun & Wan, 2009; Mafé et al., 2010; Wang & Sun 2010a; Bamoriya & Singh, 2012). Specifically in context of mobile marketing, Bamoriya & Singh (2012) empirically concluded that consumers' beliefs about mobile marketing influence their behavioral intentions in terms of receiving SMS ads. Similarly, Mafé et al. (2010) explored the consumers' beliefs under attitudinal, normative & subjective dimensions towards SMS

mediated promotions. They concluded that consumers' beliefs strongly influence their behavioral intentions to respond mobile promotion. As QR Codes being one of the modes of mobile marketing so in this study consumers' beliefs about QR Codes were considered to be positively associated with their behavioral intention.

At last, on the basis of related literature review following directional hypothesis was proposed:

H1- The stronger positive beliefs about QR Codes in marketing, the more likely one will intent to scan a QR Code.

2.2. Culture, Beliefs and Marketing Promotions

According to Hofstede (2001) an individual's set of beliefs can be tied into 5 cultural dimensions viz. individualism vs. collectivism, power distance, uncertainty avoidance, masculinity vs. femininity and long-term vs. short-term orientation. Index values of all these dimensions vary across cultures, as reflected in *Table 1* for India and USA indicating cultural differences between two. Mooij (2011) intensively studied the application of the Hofstede's cultural dimensions' findings in international marketing context and reported that due to cultural differences (significantly different index values of cultural dimensions) different belief sets and attitude towards advertising should prevail.

Table 1. Index Values of Cultural Dimensions

Dimension / Country	India	USA
Individualism	79.9	105.1
Power Distance	52.6	22.7
Uncertainty Avoidance	42.2	18.7
Masculinity	42.1	55.5
Long-term Orientation	32.5	46.7

Source: Maria et al. (2003)

The relationship between culture and beliefs towards marketing promotions is well researched and documented (Gregory & Munch, 1997; Taylor et al., 1997; Roberts & Ko, 2001; Durvasula & Lysonski, 2001; Mojsa & Rettie, 2003; Al-Juhiam, 2008; La Ferle et al., 2008; Wang & Sun, 2010a; Wang & Sun, 2010b; Usman et al., 2010). In general, findings from past studies suggest that beliefs about marketing promotions vary a cross culture in terms of favorableness thus these variables should be intrinsically linked. Further, with rapidly growing globalization marketers are increasingly interested in cross-cultural studies in various business domains including mobile marketing & use of QR Codes in it. Insights from such

studies would enable them to understand culturally diverse markets and respond accordingly. Hence, it will be of significance to examine beliefs about QR Code in marketing across cultures. However, due to practically non-existence of research on comparing QR code in marketing between Indian and USA or any other countries, it would be premature to predict how culture influences these two variables. Hence, following non-directional hypothesis was proposed:

H2- Culture will influence individual's beliefs about QR Codes in marketing.

2.3. Variables Moderating the Relationship between Beliefs and Behavioral Intentions

Findings of focus group study of Okazaki et al. (2012) hint that location of customer where s/he would encounter QR Code (say home or bus stop) and type of media used (say magazine or billboard) may influence customer's intention to scan a QR Code. But there is no explicit academic literature on the variables which might moderate the relationship between beliefs about QR Codes in marketing and subsequent behavioral intentions. There could be other possible moderators apart from media & location affecting above relationship between beliefs & behavioral intentions. So couples of informational interviews were held with a range of subject matter experts to explore the area. Majority of the experts strongly opine that media and location should moderate the relationship between beliefs and behavioral intention in context of QR Codes in marketing, thus adding validity to the findings of qualitative study by Okazaki et al. (2012). Further, majority opine that on-campaign instructions may be very critical in driving desired behavior, as general awareness about QR code is still not very high. Online marketing survey by market research firm Simpson Carpenter verifies it, which states that only 36% consumers know what a QR Code is and how to scan it (Charlton 2011). Hence, on the basis of above views and studies following non-directional hypotheses were proposed:

H3- Type of media used will moderate the relationship between beliefs about QR Codes in marketing and behavioral intention to scan QR Codes.

H4- Location of customer will moderate the relationship between beliefs about QR Codes in marketing and behavioral intention to scan QR Codes.

H5- On-campaign instructions will moderate the positive relationship between beliefs about QR Codes in marketing and behavioral intention to scan QR Codes.

3. Conceptual Framework

Figure 1 presents the conceptual model underlying the current study. The model posits that culture influences beliefs about QR Codes in marketing. Further, beliefs about QR Codes in marketing influence behavioral intention to scan QR Code. This relationship of beliefs and behavioral intention is moderated by the variables viz. Media, Location and On-campaign instructions.
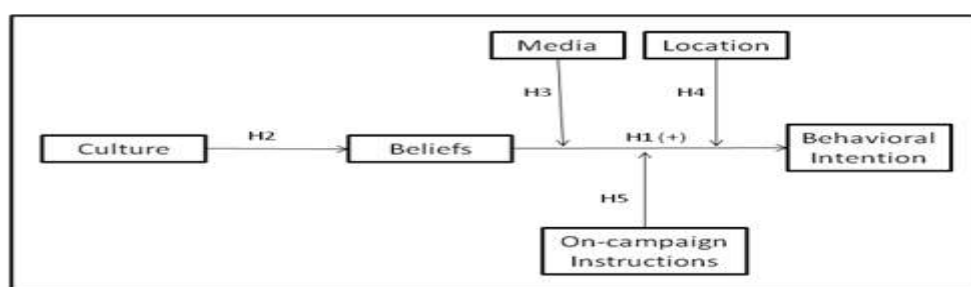
Figure 1. Conceptual Model

4. Methodology

4.1. Design & Sampling

A 3 (media: magazine, product packaging & pamphlet) X 2 (location: home & shopping mall) X 2 (with & without on-campaign instructions) between-subjects 'scenario based experimental design' was used to test the hypotheses set forth *(See Table 2)*. For this study, media types selected were magazine (coded as 3), product packaging (coded as 2) & pamphlet (coded as 1).

Similarly, home (coded as 2) and shopping mall (coded as 1) were selected as the location where customer will encounter a QR Code. "On-campaign instructions" variable was chosen as dichotomous; with instructions (coded as 2) – *a scenario where marketing communication explicitly specifying how to scan QR code, where to find application and what to expect after a scan* and without instructions (coded as 1). These twelve scenarios were intended to be administered across culture where Indian culture was codes as 1 while American culture was coded as 2 to from dichotomous variable "culture".

Table 2. Experimental Scenarios for the Study

Media	Location	On-campaign Instructions (OCI)	Scenario
Magazine	Home	With OCI	1
Magazine	Home	Without OCI	2
Magazine	Shopping Mall	With OCI	3
Magazine	Shopping Mall	Without OCI	4
Product Packaging	Home	With OCI	5
Product Packaging	Home	Without OCI	6
Product Packaging	Shopping Mall	With OCI	7
Product Packaging	Shopping Mall	Without OCI	8
Pamphlet	Home	With OCI	9
Pamphlet	Home	Without OCI	10
Pamphlet	Shopping Mall	With OCI	11
Pamphlet	Shopping Mall	Without OCI	12

In all above scenarios a hypothetical person, Mr. Z was used as suggested by Havlena and Holbrook (1986) to provide a projective task and thereby to discourage social desirability effects and to avoid problems involving individual differences in reactions to specific set of activities. So, a narration of each scenario was prepared describing location (home/ shopping mall) of Mr. Z and media (newspaper/ product packaging) on which a QR Code is placed. In six scenarios with on-campaign instructions, adjacent to the QR Code clear some instructions were placed regarding what Mr. Z should do to get a code reader, how to scan the code and what would be there for Mr. Z if he scans the code. But in remaining scenarios i.e. without on-campaign instructions, QR Code had no such instructions. All scenarios included a visual representation of a QR Code along with a verbal description. Subsequently, each scenario was subject to pretest using convenience sampling to gauge the clarity of the scenario and to determine face validity. Based on the total 33 responses received against two open ended questions in pretesting, editing and minor rewriting of scenarios was done.

A purposive sampling (unit of analysis; graduate students) was executed at one Indian and one American university, on the basis of three screening questions related to mobile internet usages and exposure to QR Codes. Overall, 289 questionnaires were collected in India and 261 in USA. After cleaning data for missing values and outliers a total of 545 usable questionnaires (286 for the Indian sample, 259 for the American sample) were available for analysis. Among Indian respondents, 63.3% were male and 34.6% female. Among American respondents, 53.4% were male and 46.5% female. On an average, American respondents (M= 6.3 yrs) had longer history of mobile internet usages than Indian respondents (M=

2.5 yrs). Further, American respondents (M= 2.89, SD=.93) reported higher exposure to QR Codes than Indian respondents (M= 1.95, SD=.90).

4.2. Measurement

Beliefs about QR Codes in marketing were measured before administrating scenario based experimental study. To measure it a 4-item five point semantic differential scale (worthless/ valuable, unnecessary/ necessary, unimportant/ important & insincere/ sincere) was adopted from Durvasula et al. (1997). Original study reported above scale to be reliable (Cronbach's alpha=.93) and valid. As in Structural Equation Modelling (SEM) ensuring convergent validity is very critical (Abramson et al. 2005), so Product Moment Correlation was estimated for data from India and American samples. Analysis suggested convergent validity as moderate to strong correlation existed between four items measuring belief construct. Further, Cronbach's alpha values were also exceeding recommended value of.7 for both Indian (.84) and American samples (.91).

Behavioral intention towards QR Code in marketing was measured after administrating scenario based experimental study. It was conceptualized as intention to scan QR code and was measured on a 5 point likert scale; 1 for "very unlikely" to 5 for "very likely".

4.3. Procedure

To one of the twelve scenarios, groups of about 20+ respondents were randomly assigned each from Indian and American Samples. Appropriate coding was done for "culture" variable and for 3 moderating variables viz. media, location and on-campaign instructions. Respondents were asked to read the written scenario and answer the questionnaire to measure their behavioral intention towards QR Code in marketing.

5. Analysis

5.1. Linear Effects

Structural equation modeling (SEM) using AMOS 18.0 was performed to assess the proposed model fit and test the hypotheses. Here, Generalized Least Square (GLS) estimation method was used as it is scale free technique (Kline 2005). In order to test hypotheses H1 and H2, a SEM was first conducted without the moderating effect of media, location and on-campaign instructions (*See Figure 2*). AMOS took 8 iterations to achieve minimization. Results indicated a good model

fit with $\chi2$ (11) = 14.32; *p* >.001; $\chi2/df$ = 1.301; GFI =.908; RMSEA =.066 and a significant improvement over null model with GFI =.908; CFI =.930; NFI =.901.
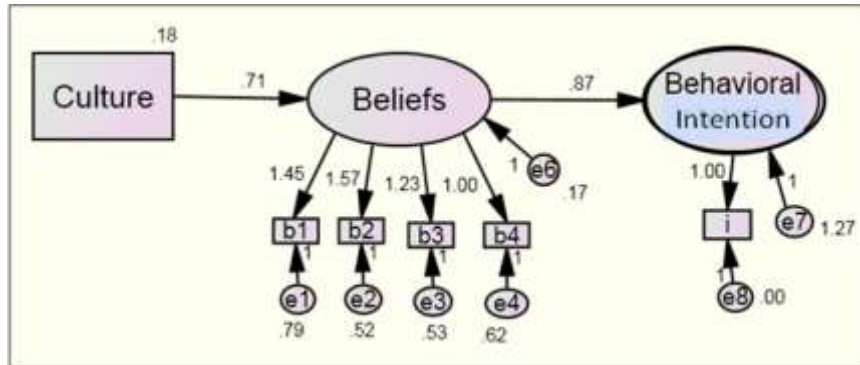

Figure 2. Structural Model without Moderating Effects

Note: Unstandardized Estimates

Findings suggested that hypnotized relationships between culture & beliefs (regression weight=.71; p <.05) and beliefs & behavioral intention (regression weight=.87; p <.001) are significant. Hence, hypothesis H2 that "*Culture will influence individual's beliefs about QR Codes in marketing*" is not rejected. Similarly, hypothesis H1 that "*The stronger positive beliefs about QR Codes in marketing, the more likely one will intent to scan a QR Code*" is not rejected.

5.2. Moderating Effects

To estimate moderating effects of media, location and on-campaign instructions on the relationship between beliefs about QR Codes in marketing and behavioral intention, General Linear Model (GLM) univariate analysis was performed, separately for each moderator. Here, behavioral intention (i) was dependent variable while composite scores (scores calculated by averaging scores of the subscale items that belonged to the construct) for beliefs about QR Code in marketing was fixed factor (b). Model was balanced as each category of hypothesized moderating variables had equal number of cases. First, moderating variable media (m) was selected as covariate and estimated for effect of beliefs (b), media (m) and interaction (b*m) on behavioral intention (i). Subsequently, same procedure was performed for reaming two moderating variables viz. location (l) and on-campaign instructions (o) (*See Table 3*).

Table 3. GLM Analysis Results for Moderating Effects

Effect	Mean Square	F	P
GLM Analysis 1			
Beliefs (b)	.917	.605	.009**
Media (m)	.579	.382	.02*
Interaction (b*m)	.161	.097	***
GLM Analysis 2			
Beliefs (b)	.867	.599	.03*
Location (l)	1.081	.903	.089 (n.s.)
Interaction (b*l)	.367	.289	.301 (n.s.)
GLM Analysis 3			
Beliefs (b)	.811	.602	.02*
On-campaign inst.(o)	.619	.481	.03*
Interaction (b*o)	1.82	.113	.002**

*Significant at.05, **Significant at.01, ***Significant at.001 level

Findings of GLM univariate analysis suggested that in case of influence on behavioral intention, interactions between beliefs & media (.097, p <.001; GLM Analysis 1) and between beliefs & on-campaign instructions (.113, p <.01; GLM Analysis 3) were significant. But interaction between beliefs & location (.289, p=.301; GLM Analysis 2) was not significant. Hence, hypothesis H3 that "*Type of media used will moderate the relationship between beliefs about QR Codes in marketing and behavioral intention to scan QR Codes*" and H5 that "*On-campaign instructions will moderate the positive relationship between beliefs about QR Codes in marketing and behavioral intention to scan QR Codes*" are not rejected. But hypothesis H4 that "*Location of customer will moderate the relationship between beliefs about QR Codes in marketing and behavioral intention to scan QR Codes*" is rejected.

6. Overall Discussion & Implications

Use of QR Codes in marketing is already quiet prevailing in USA and now making its initial footprints in India. This study attempted to explore the relationship between consumers beliefs & behavioral intentions towards "QR Code in Marketing Promotions" across cultures like India and USA. Further, study attempted to explore moderating role of media, location and on-campaign instructions on the relationship between beliefs and behavioral intention. Findings of SEM & GLM analysis provide insightful implications.

Main research objective was to explore consumers' beliefs and behavioral intention towards QR Codes in marketing promotions across cultures. Preliminary analysis suggests that USA is ahead of India in average hours of mobile internet usages. Analysis further suggests that Americans have higher level of exposure to QR Codes as marketing tool in comparison to Indians. One obvious reason could be marketers' higher familiarity and usages level with QR Codes in USA, as the USA tops in terms of origin of QR Codes worldwide (QRStuff, 2012, April). Along with it higher penetration level of Smartphones in USA in comparison to India is another plausible reason for the same. Aggregately, self reported level of exposure to QR Codes is low, so marketers should focus on educating consumers about QR Codes and its purpose, rather than simply adding QR Codes to their products and advertising campaigns.

SEM analysis suggests that consumers' beliefs about QR Codes in marketing positively influences their behavioral intentions. This finding is consistent with previous studies in relatable areas like online advertising (Ducoffe, 1996; Mehta, 2000; Brackett & Carr, 2001; Karson, McCloy & Bonner, 2006; Wang & Sun, 2010a) and mobile marketing (Bamba & Barnes, 2006; Bamoriya & Singh, 2012). Precisely these findings suggest that those consumers who believe that use of QR Codes in marketing is necessary, valuable, important and sincere are very likely to scan a QR Code used in a marketing promotion. This is a very important implication for marketers. First, if marketers want desired response from consumers then their QR Code marketing promotion should be well planned. Marketers looking to implement QR codes into their overall strategies should define their goals and objectives in crystal clear manner. Else it would give impression of an unnecessary promotional effort from marketer's side merely following current trend (Patel, 2012). Second, Marketers must provide some real value to customers once they scan a QR Code. Here focus on the consumer experience after the scan will be the most important element to success (*See Appendix 1*). For creating value marketers should utilize tracking capabilities of QR Codes and should analyze data in terms of location, operating system, time, duration & demographics of engaging consumers. Such metadata generated should be used in making QR Code experience highly relevant to consumers thus creating value for them. Third, QR Code marketing promotion must avoid any insincere approach as it would lead to consumers' frustration. A common case is non-optimized mobile webpage for mobile phones and Kats (2012) reports that approx 90% of the times a QR Code scanned through mobile phone would lead to a desktop webpage. Many a times marketers are not using URL shortners resulting in very dense QR Codes which are difficult to scan by 'not so high camera resolution' mobile phones. Even companies tend to put QR Codes on billboards placed on speedy highways/expressways or at such places where there is no mobile signals

(*See Appendix 2*). Marketers should avoid such insincere approaches while dealing with QR Codes.

SEM analysis also suggests the link between culture and beliefs. Thus a key finding of this study that "culture would influence an individual's beliefs about QR Codes in marketing" is consistent with past relatable studies (Roberts & Ko 2001; Durvasula and Lysonski 2001; Mojsa & Rettie, 2003; La Ferle et al., 2008; Wang & Sun, 2010a; Wang & Sun, 2010b; Mooij, 2011). In context of use of QR Codes in marketing promotions, American respondents have more positive beliefs about QR Codes than Indian. Further, American respondents reported higher behavioral intentions to scan a QR code used in marketing promotion. According to the hierarchy of effect theory, belief is likely to have a positive impact on behavioral intention (Lavidge and Steiner 1961). Naturally, Americans' positive beliefs further led to higher behavioral intentions towards QR Code marketing. These findings may be attributed to the cultural differences between India and USA. Reason being significantly different index values of Hofstede's cultural dimensions for India and USA. Especially, the two countries differ on uncertainty avoidance dimension which is particularly relevant to innovative marketing practices (*See Table 1;* Maria et al., 2003). Uncertainty avoidance explains the degree to which people are tolerant of uncertainties (Marinov et al., 2001) and compared to USA, Indian culture is low in uncertainty avoidance. This means in general, Indian consumers would avoid interactions with very recent & innovative tools like QR Codes. And, this is what findings of current study suggest. This is another important implication for the marketers. International marketers need to be aware of such cultural differences when employing a centralized mobile marketing approach using QR Codes around the world.

GLM univariate analysis suggests that type of media used for QR Code marketing promotion moderates the relationship between beliefs and behavioral intention towards QR Code in marketing. This finding is consistent with qualitative research by Okazaki et al. (2012). In the current study three media types were used viz. magazine, product packaging and pamphlet to from different scenarios. On the basis of cell mean comparison for behavioral intention for these media types, magazine was found to be associated with more favorable behavioral intention to scan QR Codes while pamphlet with least. Reason could be nobility and credibility associated with magazines as a marketing communication media (Pollay, 1985). Here lies an implication for marketers, they may need be careful while selecting optimum media for QR Code marketing campaigns. Similarly variable 'on-campaign instructions' has moderating effect on the relationship between beliefs and behavioral intention towards QR Code in marketing. QR Code marketing campaigns with instructions for consumers were found to significantly influencing behavioral intentions to scan QR Codes. Kats (2012) reports that QR Code based

promotions offering clear instructions can drive consumer scans up by 500 to 800%. Naturally, use of QR Codes in marketing is not very old and consumers are not fully aware about them (Charlton, 2011; O'Reilly, 2011; Tolliver-Walker, 2011; Cummings, 2011). This is an important implication suggesting that marketers should focus on increasing consumers' awareness level on QR Codes i.e. how to get a code reader, how to scan codes, what to expect from a code scan, so as to lead easy diffusion of QR Codes. At last, GLM analysis suggests that location of customers where they would encounter a QR Code marketing promotion (in the current study- home and shopping mall) does not moderate the relationship between beliefs and behavioral intention towards QR Code in marketing. This finding is contrary to the preliminary results of qualitative study by Okazaki et al. (2012) in Japan. Reason could be that the Japanese consumers shall be differing from participants of the current study.

7. Limitations & Future Research

This study also has certain limitations and underlies the implications for future research. First, in this study concept of culture was operationalized as cultural background of the respondents. This may cause loss of robustness of cross-cultural model, as strong individual differences could exist within a cultural group. Second, study only dealt with behavioral intention rather than actual behavior i.e. intention to scan a QR Code. Here, use of behavioral intention as a measure for actual behavior might have led to loss of some explanatory power of the model. Third, for sack of parsimony and understanding (as research area is almost virgin) model was constrained only key constructs of theoretical importance. This implies that there could be other significant variables in context of mobile promotions such as social norms (Karjaluoto et al., 2008), attitude towards advertising in general (Singh & Vij, 2008) on which future studies could focus. Fourth, due to very short history of QR Code marketing especially in India, consumers' beliefs may still be evolving. Thus current cross-sectional design is far from enough to capture that evolution. Hence, a longitudinal study in future may provide more insights into the QR Code marketing from consumers' point of view. Fifth, the student sample both from India & USA used in the study may limit the generalizability of findings. Future research could examine a broader profile of consumers so as to facilitate better generalizability. Sixth, as it is recommended that the final model to be tested on a second sample (Kline, 2005), but due to sample size consideration in the study model replication was not exercised. So future studies could replicate the model across geographies & ethnic groups. At last, study tested moderating effects of media, location and on-campaign instructions on the relationship between beliefs and behavioral intentions towards QR code marketing promotions. Future studies

may examine other possible moderators viz. code placement & design, incentives offered for code scan, privacy issues etc.

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9. Appendices

Appendix 1: Value for Customers

Shopper who scans the QR Code on the wine bottle of Sacre Bleu is forwarded to a mobile-optimized webpage providing brand information along with interesting tips on food-wine pairing from renowned chef Brad Sorenson.

Source: Entrepreneur, Oct. 2011, www.entrepreneur.com/article/220359

Appendix 2: Insincere in Approach

Bandwashed placed a QR Code based promotion on billboard 50 feet underground in a Subway which offers no Internet connection. Making it impossible for anyone to scan it.

Source: 2D Bar Code Strategy, Oct. 2011, www.2d-barcodestrategy.com/2011/10/brandwashed-revisited.html

Using the Model of Rationalization and Approaching Group Decision within the SMEs in Romania

Cornelia Elena Tureac[1], Ionica Oncioiu[2]

Abstract: Economic-mathematic modeling is used by the manager as an alternative to the experiment used in the exact sciences. The experiment is not possible or it is non-rational when it comes to economic issues, systems that cannot be subject to experiencing. In industry for example, a company cannot afford the implementation of all investment alternatives in order to choose the best one. The model used within the research methodology involves identifying interdependencies between certain elements of the decision-making process within the SMEs in Romania (it may be about set objectives, decision criteria, prioritizing the decision problems). It will be presented the formalization of this decision model for decision problem identification. The group aims at identifying the basic problem, which can cause most of the other problems and determine others. In conclusion after calculating matrices, the resulting situation is not simple, but the first issue that must be addressed is P_4: poorly qualified staff. The next issue to address is P_3: used production equipment. Once P_3 and P_4 are solved, it conditions P_5: poorer quality products, we can therefore address P_5 and P_2: decreased market share; as a result of solving these problems it will be also solved P_1: decrease of turnover.

Keywords: matrix; phase; problem; decision; interdependence

JEL Classification: E17; E20

Introduction

Optimization in the sphere of perfect rationalization is the choice and application of the solutions that provides the most economic efficiency, which best suits the pursued economic interests. The content of the optimal category fully emerged with the mathematization of economics, when they paved the theoretical and practical aspects of the quantification of economic phenomena, and it became possible the calculation technique in optimizing economic processes.

Under these conditions modeling mathematics represents the main tool for researching the economic optimum. In terms of economic-mathematical modeling it represents the extreme value (minimum or maximum) of a mathematical

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function, of one or more variables, defined in an area of economic activity, in terms of some constraints as algebraic equations or inequations on the values of these variables.

Economic-mathematical modeling is used by the Manager as an alternative to the experiment used in exact sciences. The experiment, in the strict sense of the word (i.e. the physical change of variables) is not possible or it is when it comes to economic issues, systems that are not subject to experiencing. In industry for example, a company cannot afford the implementation of all investment alternatives in order to choose the best one.

Modeling for the general structure of a decision-making process involves specifying its elements, namely:

- decider;
- problem formulation;
- set of possible variants / alternatives that characterizes a decision-making situation;
- the multitude of anticipated consequences of each variant;
- the multitude of decision criteria;
- objectives proposed by the decider (minimize / maximize technical-economic indicators);
- moods of nature - factors independent of the deciders, the combination of circumstances type.

The specialized literature on this line speaks of a specific category of models, i.e. decision methods and techniques. Most often they are related to choosing the best variant (of deciding), but we should not overlook the fact that, depending on the nature of the decision problem, the other preparatory stages have features of instrumental decision to which it resorts to.

In this paper we use a rationalizing model of group decision, and the best known requirements of rationality of decisions in the group are:

- the used group decision method must be applicable to the set of all possible alternatives;
- if there is a particular decision variant it rises on the steps of decisional preferences of each individual, then it has to climb on the steps of group preferences, as well;
- if the decision relates to "n" possible alternatives, the alternatives' ranking of the group does not need to be modified by considering a new alternative;
- the rule by which the decision should be made by the group should not be independent by individual opinions, but it must depend directly on these views;

- group decision does not need to be identical to the opinion of a certain member of the group without regarding the opinions of others.

2. Research Methodology

The model used within the research methodology involves identifying the interdependencies between certain elements of the decision-making process within the SMEs in Romania (it may be about objectives, decision criteria, prioritizing decision problems). It will be presented the formalization of this decision model for decision problem identification. This implies that after a brainstorming, the group obtained a list of possible decision problems. They are more or less connected. The group aims at identifying the basic problem that causes most of the other, and that it is determined by the least one of the others.

In the first stage it is required to each of the decision-maker to compile a matrix X. The matrix's elements are integers in the range [0,3]. If $x_{ij}=0$, then in the view of the decision maker's problem it does not exert a direct influence on problem j. Conversely if $x_{ij}=3$, the decision maker believes that the problem i determines directly and very strongly the problem K.

The direct links between the problems can be more clearly revealed by representing a Boolean matrix A where the element a_{ij} is 1, if $x_{ij} > 1$ and a_{ij} is 0, if $x_{ij}=0$. The indirect connections to the second rank, weaker, it can be clearly revealed by A^2. The indirect connections of second rank, already much more veiled, are revealed by A^3.

In order to analyze these connections, we will move to phase II. At this stage it is achieved a directional chart. It will represent a directed edge from i to j, if $x_{ij}>0$.

In the phase III, the B matrix is calculated. b_{ij} will be 1 if there is a directional chain from i to j, and 0 otherwise. The argument is valid for all i and j, inclusive for i=j.

In the framework of the fourth stage, the matrix C is constructed using the matrix B as follows: $c_{ij}=0$ if there is no connection between i and j ($b_{ij}=b_{ij}=0$); $c_{ij}=n_d$, if the problem i does not influence, directly or indirectly, problem j, but the problem j affects the problem i ($b_{ij}=0$, $b_{ij}=1$); $c_{ij}=1$, if the problem i influences problem j, but the problem i does not affect the problem j ($b_{ij}=1$ $b_{ij}=0$); $c_{ij}=2$, if they influence each other ($b_{ij}=1$ $b_{ij}=1$).

5th Stage will be reduced to achieving a directed chart based on the matrix X and the matrix C. Thus it will be drawn a directed edge from i to j, if $c_{ij}\geq1$ and $x_{ij}>1$

Based on this chart, it will deter the problem that needs to be addressed with priority.

In the case of a group decision it is constructed a matrix X for each decision maker. There are collected the resulted matrices X and obtain a matrix X*. It diminishes each element of the matrix X* with 2xn (where n is the number of decision makers), and continuing with phase II.

3. Results

In this paper we present the application of model ranking described in research-methodology at a SME. The company had in the last two years a very difficult period. The main problems identified by the Manager, Financial Director and Production Director are: P_1: the decrease of turnover; P_2: the decrease on the share market; P_3: used production equipment; P_4: low-skilled workers (due to fluctuations of personnel); P_5: poorer quality of products.

Once established these problems the three directors were asked to describe the interrelationships between them. They formed three matrices corresponding to the three directors. The elements of these matrices will be 0,1,2,3 (0 - if problems do not affect each other, 1 if the problem placed on the line influences easily the problem placed on the column, 2 if the influence is strong, 3 if the influence is very strong).

The three matrices are presented below:

General Manager

	D_1	D_2	D_3	D_4	D_5
D_1	-	0	2	1	1
D_2	3	-	0	0	0
D_3	2	2	-	0	3
D_4	1	1	0	-	2
D_5	2	2	0	0	-

Financial Director

	D_1	D_2	D_3	D_4	D_5
D_1	-	0	3	3	1
D_2	1	-	0	0	0
D_3	3	2	-	1	3
D_4	3	3	0	-	3
D_5	3	3	0	0	-

Production Director

	D_1	D_2	D_3	D_4	D_5
D_1	-	1	2	2	1
D_2	3	-	0	0	0
D_3	0	0	-	0	3
D_4	1	1	0	-	3
D_5	1	3	0	0	-

The summed matrix will be:

	D_1	D_2	D_3	D_4	D_5
D_1	-	1	7	6	3
D_2	7	-	0	0	0
D_3	5	4	-	1	9
D_4	5	5	0	-	8
D_5	6	8	0	0	-

For simplification we will make a reduction of each element of the last matrix 2x3=6 (if you get a negative element value, it will be passed as 0):

	D_1	D_2	D_3	D_4	D_5
D_1	-	0	1	0	0
D_2	1	-	0	0	0
D_3	0	0	-	0	3
D_4	0	0	0	-	2
D_5	0	2	0	0	-

It will be performed a chart properly oriented
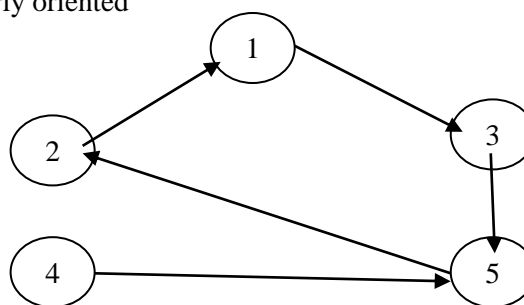
Graph 1. Graph properly oriented

It builds the matrix B

	D_1	D_2	D_3	D_4	D_5
D_1	1	1	1	0	1
D_2	1	1	1	0	1
D_3	1	1	1	0	1
D_4	1	1	1	0	1
D_5	1	1	1	0	1

Based on this matrix, we will obtain matrix C

	D_1	D_2	D_3	D_4	D_5
D_1	2	2	2	nd	2
D_2	2	2	2	nd	2
D_3	2	2	2	nd	2
D_4	1	1	1	0	1
D_5	2	2	2	nd	2

It will be performed a final oriented chart
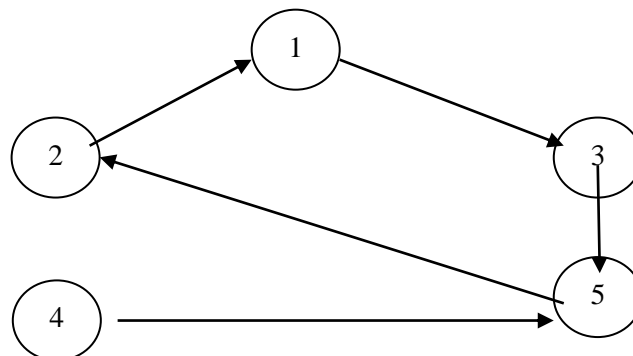
Graph 2. Final oriented graph

The resulting situation is not simple. Surely the first problem addressed must be P_4: unqualified personnel. Once removed this problem, the four remain in a vicious circle. Our suggestion is that it should be further approached P_3: used production equipment.

This problem would be solved by the acquisition of modern equipment, which should be from external sources (leasing, bank credit) in order to overcome the conditioning, which can be seen from graph 2, is determined by P_1: decrease of turnover. Once P_3 and P_4 are solved, conditioning P_5: poorer quality products, we can therefore address P_5, and P_2: decreased market share, and as a result of solving these problems it will be also solved P_1: decrease of turnover.

4. Conclusions

Optimizing in the sphere of perfect rationalization represents the choice and application of the solutions that provide the greatest economic efficiency, that best suits the pursued economic interests. The content of optimal category has fully emerged with the mathematization of economics, when they paved the theoretical and practical aspects of the quantification of economic phenomena, and it became possible the use of calculating technique in order to optimize economic processes.

Under these conditions modeling mathematics represents the main tool for researching the economic optimum. In terms of economic-mathematical modeling it represents the extreme value (minimum or maximum) of a mathematical function, of one or more variables, defined in an area of economic activity, in terms of some constraints as algebraic equations or inequations on the values of these variables.

5. Acknowledgment

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Accounting and Auditing

Environmental Cost Accounting Information and Strategic Business Decision in Nigeria

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Abstract: This study aimed at examining environmental cost accounting information and strategic business decision in Nigeria. The general assumption that conventional cost accounting does not have the ability to provide absolute information for evaluating the environmental behaviour of an organization and its economic consequences has motivated this study. Towards achieving this, secondary data was employed and a linear model was specified. Findings indicated that environmental cost accounting information as it relates to strategic business decision is value-relevant. It was on this note that we recommended firms to constantly reposition their accounting system in order to provide information on environmental costs so that the true costs in an organization can be ascertained and properly allocated. Also, due attention should be paid to waste management costs, employee health costs, investment financing costs, compliance and environmental costs and all environmental related costs by manufacturing concerns since they influence strategic decision. Our study is one of those that have explored the issue of environmental cost accounting relevance in strategic business decision in the Nigerian context.

Keywords: environmental cost accounting; strategic business decision; pricing decision

JEL Classification: M40

1. Introduction

The environment where a business is positioned is one aspect that needs priority attention if the business must survive and continue to operate in order to maximize shareholders wealth. A major challenge facing business firms today is the deterioration of natural assets due to economic activities. Pramanil Shiland Das (2007) opine that these deteriorations have reached an alarming level due to man's involvement in varied activities and in order to salvage business firms from this endemic situation, resources gradually flow out of the business and these resources

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(costs) are very relevant towards making strategic decisions. Thus, managers are under increased pressure not to only reduce such costs, but to also minimize environmental impacts on their operations (Abiola & Ashamu, 2012).These impacts are expressed by business firms in monetary terms (Horngren *et al*., 2000), hence bringing to limelight the field of 'Environmental Cost Accounting'. Environmental cost accounting is the branch of accounting responsible for the identification of environmental impacts and recording of the cost of all such resources deployed to manage environmentally related threats. In this paper, we investigated the relevance of environmental cost accounting information in making strategic decisions in Nigeria. Towards this end, this paper is divided into four (4) sections: review of extant literature, methodology, results and discussion and conclusion and recommendations.

2. Review of Extant Literature

There is an apparent lack of awareness and understanding of the magnitude of environmental costs in business operations. The conventional management/cost accounting practices do not provide adequate information for environmental management purposes in a world where environmental concern as well as environmental related costs, revenues and benefits are on the increase (Abiola & Ashamu, 2012). Welford (1998) notes that the poor state of awareness or due care of the environment and the resultant damages are increasingly altering the opinions of stakeholders on the capability of firms, these on the long run can influence the survival and profitability of business firms. The importance of environmental cost accounting is on the increase not only for strategic business decision in the area of product pricing decision, outsourcing, but also for all routine management activities such as environmental reporting, cost allocation, control and performance evaluation (Burritt *et al*, 2002).

The failure to include environmental costs in financial analysis has the effect of sending wrong signals to managers, shareholders and making process improvement, product mix, pricing, capital budgeting, and other routine decisions complicated. When environmental costs are not adequately allocated, cross-subsidization occurs between products (Graff *et al.*, 1998). Graff *et al.* (1998) view environmental cost accounting as accounting for the costs of impacts incurred by society, an organization, or an individual resulting from activities that affects environmental quality.

Over the years, substantial efforts and resources have been deplored to ensure that the natural environment is not treated as a free good. Accounting has become more concerned with achieving new goals such as measuring and evaluating potential or

actual environmental impacts on organizations (Tapamg *et al.*, 2012; Bassey *et al.*, 2013). The conventional accounting system does not provide absolute information for evaluating the environmental behaviour of an organization and its economic consequences. Environmental cost accounting information is of high relevance in making strategic business decisions. Environmental cost accounting aids managers in making strategic business decisions in the area of process and product pricing design, performance evaluation, capital investment decisions and costing determinations. (UNDSD, 2001)

In this manner, potentially hidden environmental costs are identified and separated from the general costs; this enable the managers in determining the true cost of a particular product or process and the proportion that are actually environmentally driven costs (UNDSD, 2001). Consequently, environmental accounting notifies corporate stakeholders of environmental costs, and creates a platform for key players to identify possible ways of reducing or avoiding those costs while at the same time improving environmental quality. All these are directed towards enhancing accurate assessment of costs and benefits of environmental preservation measures of firms and provide a framework for organizations to identify and account for past, present and future environmental costs to support managerial decision making, control and public disclosure (Schaltegger & Burritt, 2000; KPMG & UNEP, 2006). Ditz *et al.* (1995) opine that environmental costs can be substantial, ranging from five to twenty percents of the total cost of business. The view above supports the argument that environmental cost is very relevant in decision making since such a large percentage of business resources cannot be undermined in any strategic decisions.

According to Gale & Stokoe (2001), environmental accounting describes, measures and reports on the allocation of environmental resources, costs, expenditures and risks to various industry groups, to specific firms, or within firms to specific department, projects, activities or processes. They added that the traditional accounting system hides environmental costs in many ways and the broad approach to calculate full environmental costs is by distinguishing between internal costs (those borne by the organization) and external costs (those passed on to the society, e.g., environmental and health costs).They view internal environmental costs of business firms as a function of direct, indirect, and contingent costs, embedded with such things as remediation or restoration costs, waste management costs or other compliance and environmental management costs, these costs can be estimated and allocated using the management costing models that are available to the organization. External costs are costs of environmental damages external to an firm, these costs can be monetized by economic methods that determine the maximum amount that people will be willing to pay in order to avoid damage, or the minimum amount of compensation that they would accept to incur it, while

contingent or intangible environmental costs are cost that may arise in the future to impact on the operations of the organization, it falls into both internal and external cost categories and include changes in product quality as a result of regulatory changes that affects material inputs, methods of productions or allowable emissions, an unforeseen liability or remediation cost, employees health and satisfaction, customers perception and relationship costs; and investment financing costs or the ability to raise capital.

Effective business decisions depend strongly on relevant and true cost information. On this note, Gale & Stokoe (2001) stressed that activity-based costing as strategic cost management techniques can generate true cost. The Society of Management Accountants of Canada (1997), distinguishes between traditional cost accounting and activity-based costing (ABC), in their view, traditional cost accounting allocate cost based on the attributes of a single unit, allocation vary directly with the number of units produced while the ABC system focuses on the activities required for producing each product or providing each service. The Environmental Protection Agency, (1995) notes that activity-based costing is a means of creating a system that ultimately directs an organization's costs to the products and services that required these costs to be inquired, with ABC, overhead costs are traced to products and services by identifying the resources, activities, and their costs and quantity for producing output. ABC is the best costing technique for environmental cost accounting since environmental cost are based on individual activity and the true cost of each activity can be determine.

In addition, the quality of environmental cost information is enhanced by providing environmental cost data that is more relevant for strategic decision making. Environmental cost/management accounting information is relevant for decision making such that it performs essential roles in internal decision making in the area of product/process related decision making, investment projects decision making and correct product costing (Vasanth *et al*, 2012).Whilst acknowledging that there are scanty empirical literatures in this area of environmental cost accounting for strategic business decision, our study is among the first to investigate the relevance of environmental cost accounting information and strategic business decision in Nigeria.

3. Methodology

Eierle and Wolfgang (2013) stress that decision making and analysis of cause and effect relationship requires very specific models and sound accounting information. With this in mind, our empirical model institutes a linear relationship between environmental cost accounting information and strategic decision. The environmental cost accounting information are the remediation or restoration costs, waste management costs, compliance and environmental management costs, employees health and satisfaction costs, customers-perception and relationship costs and investment financing costs associated with business firms. Strategic decision is that which revolves around the many aspect of strategic decision such as process and product pricing design, performance evaluation amongst others. In line with the above, a linear model of environmental cost accounting information and strategic decision is given below:

$$y_t = a_0 + a_1\beta_1 + a_2\beta_2 + a_3\beta_3 + a_4\beta_4 + \ldots U_t$$

Where y_t is the dependent variable (Strategic Decision proxied by Product Pricing Decision) and U_t the error term. $\beta_1, \beta_2, \beta_3, \beta_4, \ldots$ are the regression coefficients with unknown values to be estimated; Environmental Cost Accounting Information (Waste Management Costs, Employee Health Costs, Investment Financing Costs and Compliance and Environmental Costs) are the independent variables. A-Priori Expectation is such that $\beta > 0$ (i=1 - …n). The data used covered the period 2008 through 2013 for 20 manufacturing firms in Nigeria. The model to be estimated in this paper is thus stated explicitly as below:

$$STRATDEC = b_0 + \beta_1 WMC + \beta_2 EHC + \beta_3 IFC + b_4 CEC + U_t$$

Where:

STRATDEC	= Strategic decision (proxied as product pricing decision)
WMC	= Waste Management Costs
EHC	= Employee Health Costs
IFC	= Investment Financing Costs
CEC	= Compliance and Environmental Costs

The analysis was done in order of precedence: correlation analysis: to measure the degree of linear association between the independent and dependent variables; analysis of variance tests; goodness of fit test through R^2 and test of statistical significance concludes this section.

4. Results & Discussion

The results and discussion are presented in order of precedence as below:

a. Correlation Analysis

Table 1. Correlation for Waste Management Costs &Strategic Decision

Pearson Correlation			Variance Inflator Factor (VIF)	Tolerance Level (TL)
Zero	Partial	Part		
.720	.810	.774	1.000	1.000

Source: SPSS Regression Output

Table 1 above revealed that there is a positive relationship between waste management costs and strategic decision with value (Zero:.720, Partial:.810 and Part:.774) correlations respectively. The VIF and TL values are 1.000 and 1.000 respectively suggesting that there is multicollinearity between waste management costs and strategic decision given that the VIF and TL values are closer to 1.

Table 2. Correlation for Employee Health Costs &Strategic Decision

Pearson Correlation			Variance Inflator Factor (VIF)	Tolerance Level (TL)
Zero	Partial	Part		
.814	.713	.810	1.065	1.071

Source: Output from OLS Regression

Table 2 above revealed that there is a positive relationship between employee health costs and strategic decision with value (Zero:.814, Partial:.713 and Part:.810) correlations respectively. The VIF and TL values are 1.065 and 1.071 respectively suggesting that there is multicollinearity between employee health costs and strategic decision given that the VIF and TL values are closer to 1.

Table 3. Correlation for Investment Financing Costs &Strategic Decision

Pearson Correlation			Variance Inflator Factor (VIF)	Tolerance Level (TL)
Zero	Partial	Part		
.714	.860	.765	1.014	1.023

Source: SPSS Regression Output

Table 3 above revealed that there is positive relationship between investment financing costs and strategic decision with value (Zero:.714, Partial:.860 and Part:.765) correlations respectively. The VIF and TL values are 1.014 and 1.023 respectively suggesting that there is multicollinearity between investment financing costs and strategic decision given that the VIF and TL values are closer to 1.

Table 4. Correlation for Compliance and Environmental Costs &Strategic Decision

Pearson Correlation			Variance Inflator Factor (VIF)	Tolerance Level (TL)
Zero	**Partial**	**Part**		
.912	.815	.732	1.099	1.055

Source: SPSS Regression Output

Table 4 above revealed that there is a positive relationship between compliance and environmental costs and strategic decision with value (Zero:.912, Partial:.815 and Part:.732) correlations respectively. The VIF and TL values are 1.099 and 1.055 respectively suggesting that there is multicollinearity between compliance and environmental costs and strategic decision given that the VIF and TL values are closer to 1.

b. Analysis of Variance Tests

This section provides the analysis of variance (ANOVA) results

Table 5. ANOVA Result (Goodness of Fit Statistic)

Model	Sum of Squares	Df	Mean Square	F.	Sig.
1 Regression	672169651.369	2	168042412.842	154.714	.000[b]
Residual	79853535.263	18	3071289.818		
Total	752023186.632	20			

Source: SPSS Regression Output

a. Predictors: (Constant), WMC, EHC, IFC, CEC

b. Dependent Variable: STRATDEC

Table 5 summarizes the information about the variation of the dependent variable explained by the existing model and the residual that indicates the variation of the dependent variable that are not captured by the model. It can be observed that the independent variables give a significant effect on the dependent variable, where f-value is 154.714 with a p-value of less than 0.05 (i.e. p<0.000) indicating that, overall, the model is significantly good enough in explaining the variation in the dependent variable. To ensure the statistical adequacy of the model, the goodness of fit can also be measured by the square of the correlation coefficient also called R^2.

c. Goodness of fit test through R^2

Table 6. Goodness of fit through R Square

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.845[a]	.794	.777	1752.5095771

Source: SPSS Regression Output

a. Predictors: (Constant), WMC, EHC, IFC, CEC

As shown in table 6 above, adjusted R^2 is .777, indicating that the independent variables in the model are explaining 78% variation on the dependent variables. Thus, we can understand that the model is providing a good fit to the data.

d. Test of Statistical Significance

Table 7. Regression Results for Dependent and Independent Variables

Variables	Coefficients	t-statistic	Prob.
Constant	1154.858	.780	.433
WMC	.024	.375	.711
EHC	.563	2.204	.037
IFC	.563	2.147	.041
CEC	.939	9.911	.000

Durbin Watson: 1.027

Source: SPSS Regression Output

As shown in table 7 above, of the four variables tested, WMC (p-value =.0711), EHC (p-value =.037), IFC (p-value =.041) and CEC (p-value =.000) were statistically significant at 5 percent or lower. The result also showed that Waste Management Costs (WMC) has a coefficient of .024 and it is significant at 5% level. This implies that waste management costs have a positive relationship with strategic decision (proxied by product pricing decision). Employee Health Costs (EHC) has a coefficient of .563. The positive significance of the coefficient is a clear indication that employee health costs increases product pricing. Investment Financing Costs (IFC) significantly affects strategic decision at 5% level of accuracy. It is a major finding that investment financing costs affects strategic decision (product pricing). Another interesting finding is that Compliance and

Environmental Costs (CEC) has a positive relationship with strategic decision. The value of compliance and environmental costs has a coefficient of.563 and it is significant at 5% level. This implies that a unit increase in the compliance and environmental costs will result to 0.563 unit decreases in product pricing vice-versa. The Durbin Watson (Dw) test with value 1.027 shows support for the presence of first order serial correlation in the model since $d_l<DW<du$ 1.236<1.54.

5. Conclusion & Recommendations

This paper examined the relevance of environmental cost accounting information and strategic business decision in Nigeria using data from the manufacturing sector during the period 2008 through 2013. The outcome of the result suggests that waste management costs, employee health costs, investment financing costs and compliance and environmental costs have positive relationship with strategic decision. This implies that environmental costs accounting information is value relevant in making strategic business decision. Thus, it was recommended that firms should constantly reposition their accounting system in order to provide information on environmental costs so that the true costs in an organization can be ascertained and properly allocated. Also, due attention should be paid to waste management costs, employee health costs, investment financing costs, compliance and environmental costs and all environmental related costs by manufacturing concerns since they influence strategic decision.

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Financial Leverage Behaviour and Firm Performance: Evidence from Publicly Quoted Companies in Nigeria

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Abstract: This paper scrutinizes financial leverage behaviour and firm performance of publicly quoted companies in Nigeria. Data of Leverage, Profitability and Firm Size were sourced from the Nigerian Stock Exchange Fact-book and Annual Report and Accounts of 120 publicly quoted companies in Nigeria during the period 1990 through 2013. Findings suggest that profitability and firm size had a negative effect on financial leverage behaviour of publicly quoted companies in Nigeria. Thus, it was recommended that firms should carry out projects that would help enhance size and profitability in all aspect of the firm. Size in terms of assets would help increase the internal funding. This in turn will have a positive impact on the financial structure of firm as more of internally generated funds will be used instead of external borrowings. Firms should not assume that making of profit shows good application of leverage as this was not found to be true from the analysis. This implies that the result can be relied upon for policy direction.

Keywords: financial leverage; firm performance; profitability; firm size

JEL Classification: O47

1. Introduction

In spite of quite a few decades of research, there has been no general consensus on the relationship between financial leverage and firm performance. These unresolved issue stems from the contrary arguments in literature that leverage affects firm performance or not. A vital subject in finance hooves around whether financial leverage influences firm performance. Laurent (2002) notes that two elements may have influenced these arguments, such as the various measures of performance (either basic accounting ratios or more sophisticated measures on the one hand and on the other hand, some of the studies were performed on one country. The results of such studies may be influenced by the institutional framework in that country where the study is being carried thus leading to the divergent results on the relationship between financial leverage and performance. However, this paper present a novel approach using some measures of financial performance in order to establish whether relationship exists between financial

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leverage and performance using data from Nigerian publicly quoted companies. The remaining part of this paper is organized as follows: Literature Review; Methodology; Results and Discussion; Conclusion and Recommendations.

2. Literature Review

Several studies has have been carried out to examine the relationship between financial leverage and other financial measures such as corporate governance, performance, environmental risk and a host of other issues. For instance, Safieddine and Titman (1999) explores leverage and corporate performance from unsuccessful takeovers in New York. The study find that on average, targets that terminate takeover offers significantly increase leverage ratios and targets that increase leverage ratios the most decrease capital expenditures, cut employment, lessen focus and help realize cash flows and share prices that outperform failed takeover. The study additionally indicates that higher leverage helps firms remain independent. Laurent (2002) tests the relationship between leverage and corporate performance in France, Germany and Italy. The regression statistical technique was adopted on various sets of variables (leverage, tangibility, short-term liabilities, inventory and size). The study found mixed evidence depending on the country; while significantly negative in Italy, the relationship between leverage and corporate performance is significantly positive in France and Germany.

Allen, Wharton Financial Institutions Center and Emilia (2002) report the relationship between capital structure and firm performance with a new approach to testing agency theory and application in the banking industry in United States, employing a simultaneous equations model. The study suggests that data on United States banking industry are consistent with the agency theory and the results are statistically significant, economically significant and robust. Laurent (2008) investigates the relationship between leverage and corporate performance of medium-sized firms from seven European countries using a maximum likelihood procedure to estimate a stochastic cost frontier and the parameters of an equation relating cost inefficiency to leverage simultaneously. Findings indicate that relationship between leverage and corporate performance caries across countries which tend to support the influence of institutional factors on this link.

Tih (2010) tests the relationship between financial distress and firm performance during the Asian Financial Crisis of 1997-1998 with regression estimation technique. The results of the study reaffirms that firms with low financial leverage tend to perform better than firms with high financial leverage. In addition to the findings, the crisis magnifies the negative relationship between financial distress and firm performance. Hence, high leverage firms experience worse performance

during a crisis. Fabrizio *et al.* (2010) explores the relationship between leverage and growth in a group of emerging central and eastern European countries with different levels of financial market development via a non-linear model. Estimates of a threshold model showed the non-linear relationship after controlling for various firms, industry and financial market characteristics.

Fabrizio *et al.* (2011) studies bridge the gap between the literature on optimal capital structure and the literature on finance-output-growth nexus using both the standard and IV threshold regression models for a sample of Central and Eastern European countries. The study found a non-linear hump-shaped relationship between leverage and productivity growth, thus endogenously identifying an optimal leverage ratio. Humera *et al.* (2011) examines the relationship between corporate governance and firm performance of twenty firms listed on Karachi Stock Exchange during the period 2005-2009. The performance of corporate governance was done via Tobin's Q while performance of firms proxy by return on assets and return on equity. The findings indicated that leverage and growth have a positive relationship with Tobin's Q, which confirms a significant effect in measuring performance of firm. The implication is that having good corporate governance measures perform well as compared to firms having no or less corporate governance practices.

Akhtar et al. (2012) investigates the relationship between financial leverage and financial performance using the Fuel and Energy Sector of Pakistan. The findings showed a positive relationship between financial leverage and financial performance of the companies thus confirming that the firms having higher profitability may improve their performance by having high levels of financial leverage. In addition, the study provides evidence that the players of the fuel and energy in Pakistan can improve at their financial performance by employing the financial leverage and can arrive at a sustainable future growth by making vital decisions about the choice of their optimal capital structure. Akinmulegun (2012) tests the effect of financial leverage on selected indicators of corporate performance [Earnings per Share (EPS), Net Assets per Share (NAPS)] in Nigeria using the Vector Auto-Regression (VAR) technique. Findings indicated that leverage shocks exert significantly on corporate performance. Also, the measures of corporate performance (EPS, NAPS) depends more on feedback shock and less on leverage shock but the leverage shocks on EPS indirectly affect NAPS of firms as the bulk of the shock on NAPS was received from EPS of the firms.

Raza (2013) using a panel data analysis examines the determinants of capital structure of Karachi Stock Exchange listed none-financial firms for the period 2004 through 2009. The regression statistical technique was adopted for the study. The findings indicated a negative relation between performance leverage. Also, there was no significance between leverage and profitability. Fabrizio *et al.* (2013)

examine the relationship between optimal capital structure and the wider macro literature on finance-growth nexus using a non-linear model and analysis performed with a threshold regression model of Hansen (2000). The study showed that the existence of an optimal leverage ratio where the net benefits of debt in terms of productivity gains is exhausted.

Gonzalez (2013) tests the effect of financial leverage on corporate operating performance and how this effect varies across countries using 10,375 firms in 39 countries. The study indicates that performance of firms with greater leverage is significantly reduced compared to their competitors' industry downturns. The study additionally showed that this effect varies according to the legal origin of the countries, being positive in French civil law countries. Hsueh-En (2013) investigates the effect of leverage and ownership structure as moderating effects between research and development expenditures and firm performance in Taiwan. The results suggest that ownership structure has a positive effect on research and development performance relationship. In addition, leverage has a negative effect on the relationship between research and development and firm performance.

Rehman (2013) reports the influence of financial leverage on financial performance with evidence from listed sugar firms in Pakistan. The study found a mixed result such that a positive relationship exists among debt equity ratio, return on assets and sales growth and negative relationship exists among debt equity ratio with earnings per share, net profit margin and return on equity. Saber (2013) investigates the effect of financial leverage and environmental risk on performance firms of listed companies in Tehran Stock Exchange. The variables of free cash flow per share and return on equity and market risk and economic risk were used as the dependent and independent variables respectively for 95 firms during 2005 through 2011. Panel data and multiple regressions were used to test the hypotheses. Findings indicated that there is a negative relation between financial leverage and free cash flow per share and between market and economic risks with free cash flow per share positive significant. Additionally, the study found a positive significant relationship between financial leverage and return on equity.

Fosu (2013) examines the relationship between capital structure and firm performance, paying particular attention to the degree of industry competition, using panel data comprising of 257 firms in South Africa with period 1998 through 2009. The results indicated that financial leverage has a positive and significant effect on firm performance. Also, it was found that product market competition enhances the performance effect of leverage. To conclude this empirical survey of literature, it appears that there is no consensus on the relationship between financial leverage behaviour and firm performance using some corporate performance measures (profitability and firm size) in Nigeria. Towards this end, this study

investigated financial leverage behaviour and firm performance with evidence from publicly quoted companies in Nigeria.

3. Methodology

This study was carried out to scrutinize financial leverage behaviour and firm performance of publicly quoted companies in Nigeria.

3.1. Method of Analysis

A multiple regression technique was employed in estimating the parameters of the model. In the multiple regression models, "Leverage" is the dependent variable while "Profitability" and "Firm Size" are the independent variables. Leverage is measured by book value of long term-debt divided by capital employed. Specifically, we used profitability and firm size as proxies for firm performance. Profitability is the profit after tax of each of the firms and Firm Size is measured by total assets owned by each of the firms.

3.2. Data Definition and Source

This study obtained secondary data from the Nigerian Stock Exchange Fact-book and Annual Report and Accounts of 120 publicly quoted companies in Nigeria during the 1990 through 2013. Data of Leverage, Profitability and Firm Size were used in a unifying model.

3.3. Model Specification

The multiple regression models for the study takes the below form:

$$FLEVR = F(PROFT, FIMSZE) \qquad \textbf{\textit{eq. 1}}$$
$$FLEVR_{it} = \alpha_0 + \beta_1 PROFT_{it} + \beta_2 FIMSZE_{it} + U_{it} \qquad \textbf{\textit{eq.2}}$$

Where:

α_0	=	Constant or intercept
β_{1-2}	=	Regression Coefficients
U_t	=	Error term not represented in the model
it	=	Time period of the study
FLEVR =		Financial Leverage
PROFT =		Profitability (Profit after tax)
FMSZE =		Firm Size (Total Assets)

4. Results and Discussion

The analysis of data was done in two phases: first was the descriptive statistics and second was the regression analysis.

Table 1. Descriptive Statistics

	FLEVR	PROFT	FMSZE
Mean	4.721809	0.294810	7.836355
Median	0.19945	0.211630	7.746112
Maximum	540.1165	45.81510	10.228110
Minimum	-0.31929	-13.786	5.11810
Std. Dev.	46.1262	3.746913	0.987596
Skewness	11.87579	-12.93176	-0.037142
Kurtosis	132.8138	191620.6	5.085614
Jarque-Bera	132570.3	191621.6	10.756594
Probability	.000	.000	.008
Observation	137	137	137

Source: SPSS Output

The descriptive statistics of the variables used in the analysis were presented in table 1 above. Financial leverage (FLEVR) represents the major variable of interest (dependent variable). The table above showed that financial leverage has a mean value of 4.721809 and a median of 0.19945. The maximum value is 540.1165, while the minimum value is -0.31929 and standard deviation of 46.1262. Financial leverage was positively skewed with a value of 11.87579 and a Jacque-Bera value of 132570.3. This suggests a high degree of variability of the data between financial leverage behaviour and independent variables. Firm Size had the highest mean with a value of 7.836355, median of 7.746112, maximum value of 10.228110, minimum value of 5.11810 and standard deviation of 0.987596. Firm Size was negatively skewed with a value of -0.037142 and Jacque-Bera value of 10.756594. Profitability had the lowest mean with a value of 0.294810, median of 0.211630, maximum and minimum values of 45.81510 and -13.786 respectively and standard deviation with value 3.746913. Profitability has the highest skewness of -12.93176 and a Jacque-Bera value of 191621.6.

Table 2. Regression Result

Variables	Coefficient	T-ratio	Prob.
C	-2.28208	-0.38609	0.8930
FMSZE	0.085845	-0.258078	0.8935
PROFT	-0.04296	-0.311167	0.8535
$R^2 = 0.89$		Durbin Watson = 1.36	

Source: SPSS Output

The results in table 2 above showed that firm size had a positive relationship with financial leverage. Also the study found a negative relationship between profitability and financial leverage. The R-square with value 0.89 connotes very high and indicates that 89percent of the systematic variations in the dependent variable has been explained by the model. This indicates that the estimated model has a good predictive power. Thus, we can contend that a significant relationship exists between financial leverage behaviour and all the independent variables put together. The Durbin-Watson with value 1.36 suggests that there is the presence of first order serial correlation in the model since $d_l < DW < du 1.36 < 1.54$.

5. Conclusion & Recommendations

This study examined financial leverage behaviour and firm performance using publicly quoted companies in Nigeria. The financial leverage behaviour is initiated by certain factors amongst which are profitability and firm size. From the study we found that these two (2) factors affect financial leverage behaviour positively. The implication of this finding is that profitability and firm size had a negative effect on financial leverage of publicly quoted companies in Nigeria. Thus, it was recommended that firms should carry out projects that would help enhance size and profitability in all aspect of the firm. Size in terms of assets would help increase the internal funding. This in turn will have a positive impact on the financial structure of the firm as more of internally generated funds will be used instead of external borrowings. Firms should not assume that making of profit shows good application of leverage as this was not found to be true from the analysis. This implies that the result can be relied upon for policy direction.

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Financial, Public and Regional Economics

Determinants of Customers' Satisfaction in the Nigerian Aviation Industry Using Analytic Hierarchy Process (AHP) Model

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Abstract: The aviation industry in Africa's most populous nation has been experiencing an explosive growth in recent years with older domestic operators fighting competing new players. The expansion has given Nigerians a wider choice of airlines, many of them flying with new or recently refurbished aircraft, which have helped reverse the country's situation for air safety in the wake of a spate of crashes six years ago. This paper applied the Analytic Hierarchy Process to identify the determinants of customers' satisfaction in the Nigerian aviation industry. To achieve this aim, a sample of 100 customers were drawn from among customers (air passengers) at the Muritala Mohammed Airport 2 in Lagos, Nigeria, using convenience sampling and snowballing techniques. The quantitative approach was used to analysed the data obtained by using descriptive statistics and the Expert Choice 2000 a software designed to analyse AHP data. Findings show that customers of the aviation industry players derived their satisfaction when operators respond quickly to their requests and provides information in relation to their flights. Although there is little relative preference in terms of customers' satisfaction regarding the services provided by the aviation operators in Nigeria, customers' satisfaction is derived essentially from how the operators handle their ticketing and reservation services.

Keywords: analytic hierarchy process; customers satisfaction; aviation industry; Nigeria

JEL Classification: M30

1. Introduction

This research work is a survey study of the Nigerian Aviation Industry, with particular focus on Lagos State in the western region of the country, in order to assess the determinants of customers' satisfaction, using the Analytic Hierarchy Process (AHP) model.

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The airline industry is central to all economies in the world, considering the current movement towards globalisation. The industry is considered a major economic force, both in terms of its direct impact and its multiplier effects on other sectors of the economy, such as tourism, education, manufacturing, construction and so on. It is also the fastest means of transportation across the world (Maishamu & Kadiri, 2012). Hanlon (2000) observed that, in the last 25 years, the aviation industry had been growing rapidly. In addition to developments in technology, the growth of the airline industry, due to its role in supporting the world trade, international investments and tourism activities, is regarded to as the center of globalization for other industries. Indeed ATAG (2008) saw airline services as a veritable instrument of globalization and market expansion, political and cultural integration and destination value enhancement.

Consequently, the aviation sector, seen as one of the major drivers of development and prosperity and, without doubt, a socio-economic development factor for Africa, has become highly competitive in recent years. In this connection, according to ATAG, the air transport industry generates around 430,000 jobs in Africa and contributes USD$9.2 billion to Africa GDP (direct, indirect and induced impacts). Similarly ICAO (2007) forecast 95.6 and 4.6% economic induced increase in airline passengers and freight for the continent, respectively.

Without doubt, globalization has brought a new paradigm of competition and innovation which has impacted positively on service delivery by airline operators in Nigeria (Adeniyi & Cmilt, 2011).

Civil Aviation in Nigeria is a spin-off of the British colonial rule. It is a product of a mere accident of history, dating back to 1925 in the unlikeliest of places – the ancient walled city of Kano and in the early 1930's, an enterprising pilot carried a few fare-paying customers in a sea plane between Lagos and Warri. However, commercial aviation services between Nigeria and UK actually commenced in 1935 with flight operated by Imperial Airlines of the UK to serve the British West Africa Colonies. This development was further boosted with the advent of the Second World War which led to the completion of all the aerodromes and airports that had been planned for Nigeria by 1940. Since then, commercial air transportation has witnessed some substantial and significant developments. Today, there are 22 airports established by the Federal Airport Authority of Nigeria (FAAN). Four of these are functional international airports. There is a state owned airport located in Akwa Ibom State. In addition, there are airstrips or airfields scattered around the country, built mainly by the Nigerian Air Force and multinational oil companies. Also, the number of operators grew from one airline before 1983 to three between 1983 to 1988; to nine from 1989 to 1995; to fifteen from 1995 to 2010 and to seventeen from 2010 to 2013 (Ukpere, Stephens, Ikeogu, Ibe & Akpan, 2012; FAAN, 2013).

The growth of the airline industry has provided opportunities as well as challenges to the business entities in this industry. The opportunities arise from the increasing demand for airline services, whereas challenges arise, not only from the high level of competition among the airlines, but also from growing consumer demands for better service (Suhertanto & Noor, 2012). Suggestions show that delivering superior service quality is a pre-requisite for success and survival in today's competitive business environment because a superior service quality will, not only delight customers, but also reduce costs by minimizing customer turnover. In this respect, Gilbert and Wong (2003) point out that understanding what customers expect is essential to providing desired service quality in the airline industry. The ability to deliver high-quality service to customers is imperative for the sustainability of airline companies in the aviation industry. Customers are the bed-rock for success in the aviation industry and meeting their expectations is a major responsibility of airlines service providers. Customers satisfaction is the stimulating factor to all businesses and managers must strive continuously to identify methods to create customer satisfaction. Shostack (1977) affirms that service provided can be tangible or intangible, if it fails to meet the requirements of the customer, the service stands rejected. Hence, customer satisfaction may be considered as a base line standard of performance and a possible standard of excellence for any airline company.

Customers play a key role in any business, for without customers, no business can survive. Thus, organizations need to work closely with their customers because they are indispensable. Satisfaction, on the other hand, is an individual feeling of pleasure or disappointment (Shahzad, Syed & Fahad, 2012). If their expectation level is met, their level of satisfaction also increases, but if not, their disappointment comes (Shahzad *et al.*, 2012). Satisfaction is an overall psychological state that reflects the evaluation of a relationship between the customer (passenger) and a company (environment-product-service). It involves the three psychological elements that is cognitive (thinking/evaluation), affective (emotional/feeling) and behavioural. According to Reichheld and Sasser (1990), satisfaction is an important determinant of customer retention, which, in turn has a very strong effect on profitability. Customer satisfaction is derived largely from the quality and reliability of organizational products and services. In marketing, customer satisfaction is a measure of how products and services supplied by a company meet or surpass customers' expectation. In this connection, Kotler (1999) states categorically that customer satisfaction is the best indicator of a company's future profits.

Hong–Ynull (2006) points out that customer satisfaction is conceptualized as a cumulative construct that is affected by service expectations and performance perceptions in any given period and is affected by past satisfaction from period to

period. Customer satisfaction, in airline operations has become critically important (Dennel, Ineson, Stone & Colgate, 2000). Despite the attempt to differentiate services by airline, studies reveal that customers do not perceive any difference between one carrier and another (Ott, 1993).

Thus, in managing customer relationships in the 21st century, airline operators' responsibility will be to increase customer satisfaction through the entire organization, by monitoring every interaction with the customer and by enhancing customer value. Hence, a research of this nature is required to provide a clear insight into the determinants of customer satisfaction in the Nigerian aviation sector. Therefore, the primary objective of this study is to assess the determinants of customer satisfaction in the Nigerian aviation industry using the Analytic Hierarchy Process (AHP) model.

2. Research Problem

The growth of the service sector not only offers business opportunities but also poses competitive threats for many service marketers. This is particularly the case for the air travel industry (Ostrowski, O' Brien & Gordon, 1993). The fierce competition existing among airlines globally has made airlines operating in both developed and developing countries to devise strategies in order to ensure continuous patronage by customers. Customers make decisions on particular flight to board, based largely on their perceived safety and past experiences with the airline referral, which, at times, depend on the quality of service or product provided by the airlines. Consequently, airline operators increasingly strive to attract, build, and retain customers through the quality of their service product offerings. In this regard, many airline operators invest heavily in innovative, streamlined and efficient service systems to improve performance and remain competitive (Asiegbu, Igwe & Akekue – Alex, 2012). Since the early 1990s, the delivery of a high level of service quality by airline companies became a marketing requisite as the competitive pressures continued to increase. Most airlines began to offer various incentives, such as the frequent flyer programmes in an effort to build and maintain the loyalty of customers (Miller, 1993). Thus, in order to remain competitive, service providers must render quality service to their customers. However, Ott (1993), in his extensive study of frequent fliers, showed that despite the airlines attempts to differentiate their services, consumers did not perceive any difference between one carrier and another, whereas Ostrowski *et al.* (1993) noted that when all airline companies had comparable fares and matching frequent flyer programmes, companies with better perceived services drew customers from other carriers. However, despite the foregoing studies, there are today new challenges to be met in order to achieve improved customer satisfaction.

Just like the aviation industry in most other economies of the world, especially Europe and America, the Nigerian aviation industry has been going through a tough phase. The deregulation of commercial airlines transportation has great transformed an industry that is crucially important to the Nigerian economy. The demand for air transport services in the country has been on the increase within the past three decades. There has been growth in passenger, aircraft and freight traffic as a result of physical and economic development of cities in different parts of the country.

However, despite the category one status attained by the Nigerian aviation industry, the sector is still fraught with poor customer service and compensation for wronged and deserving customers. It has been observed that there is a need for more competition in the industry to give customers a wider range of choices in case their chosen carrier disappoints in any way (Udoh, 2013). In terms of customer satisfaction with the way the airlines handle the comfort of their passengers, there is little to reflect the CAT one certification. Moreover few people trust the airlines. As a result there is very little brand loyalty; no widespread support and when troubles come they go down, sometimes literally, without anybody missing them because the owners appear to operate the airlines to please themselves and nobody else. Thus, for Nigerian airlines customer satisfaction is a theoretical idea, not central to the business.

It is therefore imperative for the airlines to see their operations from the customer's point of view rather than from only their service providers perspective. Customer Feedback Services (CFS, 2010), in their study, advised airline operators in Nigeria to always listen to and focus attention on the singular most important person in their business - the customer. They stress that the airlines must keep sight of the factors that influence their customers' flying decisions. Thus the observation by Cronin (2000), that there was no proper understanding of the variables which customers value is still remaining valid today. The main thrust of this quantitative study is therefore to assess the determinants of customers' satisfaction in the Nigerian aviation industry using the Analytic Hierarchy Process (AHP) model.

The specific objectives of the study are to:
- identify services provided by the airline operators to customers in the Nigerian aviation industry;
- evaluate the determinants of customer satisfaction;
- develop a hierarchical model for customer satisfaction in the Nigerian aviation industry;
- prioritize the Airlines operators in line with customers satisfaction determinants in Nigeria;

- highlight for the airline operators in the Nigerian aviation industry areas of service priorities with regards to their customers.

3. Theoretical Background

The theoretical background for this study was developed around two major issues: customer satisfaction and the Analytical Hierarchy Process (AHP) model.

3.1. Customer Satisfaction

Customer satisfaction has been an important theoretical and practical issue among marketers and consumer researchers. Cronin and Taylor (1992) found out that satisfaction is strongly associated with re-purchase intentions. Customer satisfaction also serves as an exit barrier, helping a firm to retain its customers (Fornelu, 1992). Various studies have also concluded that it costs more to gain a new customer than it does to retain an existing one (Blodgett, Wakefield & Barnes, 1995; Gummesson, 1994). Furthermore, Shin and Elliot (2001) concluded that, through satisfying customers, organizations could improve profitability by expanding their business and gaining a higher market share as well as repeat and referral business. The importance of customer satisfaction is derived from the generally accepted philosophy that, for a business to be successful and profitable, it must satisfy customers (Shin & Elliot, 2001). Kotler and Armstrong (2004) pointed out that satisfying customers is an important element in marketing concept. Chitty, Ward & Chua (2007) found that customer's satisfaction affects future consumer purchase behavior, profitability and shareholder value.

Although the literature in the field encompasses diverse meanings for satisfaction, Fonseca, Pinto and Brito (2010) state that they all share common elements when examined as a whole. According to them, three general components can be identified: (i) consumer satisfaction is a cognitive and emotional reaction; (ii) the reaction belongs to a particular focus; (iii) the reaction occurs in a particular period (after consumption, after choice based on experience and expressed before and after choice, after consumption, after extensive experience of using). However, Fonseca *et al*. (2010) note that from the literature, it also seems that there is no general consensus regarding the nature of this concept. In the light of the fact that customer satisfaction is one of the objectives of marketing activity, it facilitates the linking of the process of purchasing and consumption with post purchase phenomena (Suhartanto & Noor, 2012). Thus, two types of satisfaction are distinguished in the literatures: transaction-specific satisfaction and overall (cumulative) satisfaction (Olsen & Johnson, 2003).

Transaction-specific satisfaction results from a specific transaction that occurs at a given time and by the benefits and value of the transaction. It is the consumer's

112

(passenger) evaluation of his/her experience with a particular product/transaction episode or service encounter. Oliver (1997) disclosed that recent studies emphasized the multi-faceted nature of customer satisfaction. Customers' satisfaction refers to the level of satisfaction felt in a discrete service encounter (Jones & Suh, 2000; Fonseca *et al.,* 2010). The respondents in the study are, not only asked to provide an overall assessment of their satisfaction with a particular organization or airline operators, they are also asked to rate different components of the service process.

The overall picture sees consumer satisfaction in terms of cumulative overall, based on all contacts and experiences with a company and the clients' experiences until a certain moment. It is a more fundamental indicator of the firm's past, current and future performance; because satisfaction is considered a dynamic process, every transaction can positively or negatively influence overall satisfaction. Overall satisfaction represents satisfaction with an organization, based on all encounters and experiences with that particular organization; it is the product of all previous experiences with the firm, updated after each transaction (Jones & Suh, 2000; Fonseca *et al.,* 2010, Fornell *et al.,* 1996). Recognizing these two types of satisfaction can be especially useful when measuring customer satisfaction. However, this research study followed the transaction-specific method of measuring customer satisfaction. This is justified by the fact that the present study is a survey of passengers of airlines, irrespective of their previous experience(s) with airlines in Nigeria.

Although customer satisfaction in service industries has been approached differently by equity theory, attribution theory, the confirmation and disconfirmation paradigm and satisfaction as a function of perception (Parker & Mathews, 2001), most of the studies on satisfaction in marketing literature are based on the confirmation/ disconfirmation paradigm. (Parker & Mathews, 2001). Confirmation/disconfirmation paradigm postulates that the feeling of satisfaction is a result of the comparison between perceptions of a product's performance and expectation. It argues that satisfaction is related to the size and direction of the disconfirmation experience that occurs as a result of company service performance against expectation. It views customer satisfaction judgments as the result of the consumer's perception of the gap between their perceptions of performance and their prior expectations. (Oliver, 1980; Oliver & Swan, 1989). Despite the fact that the disconfirmation theory has been supported by many researchers, Churchill & Suprenant (1982) point out that it is hard to operationalize the theory consistently for all product/services categories. Consequently, several approaches as pointed out by Giese and Gote (2000) have been employed to assess satisfaction. They criticize a lack of consensus about the process leading to satisfaction and the satisfaction construct and favor the development of context-specific satisfaction measures.

113

These approaches, according to Kyootai and Kailash (2007), rely on a customer's affective or emotional response as forming the basis for the measurement of customer satisfaction, specific to a context rather than assessing disconfirmation. This approach has been adopted for the present study, since AHP, an operational research model (Saaty, 1980), is a better and suitable model for assessing customer's opinions, emotions, feelings experience towards determining customer satisfaction.

3.2. Analytical Hierarchy Process (AHP) Model

There are various service quality measurement tools developed by various researchers, based on different theories. A widely used model is SERVQUAL developed by Parasuraman (1985) in which he identified five generic dimensions of service quality that must be present in service delivery in order for it to lead to consumer satisfaction. These are Reliability, Assurance, Tangibles, Empathy and Responsiveness (RATER). However, the difficulty with this approach is that SERVQUAL requires the collection of sets of data to do a competitive analysis (Clare & Peter, 2005).

Gilmore (2003) in Kazi (2011) summarized the criticism of SERVQUAL as follows: The gap model that there is little evidence that customers access service quality in terms of performance and expectation gaps; Dimensionality, that is, SERVQUAL's five dimensions are not universal; Expectations that is, some researchers argue that measuring expectations is unnecessary; Item composition, that is, four or five items cannot capture the variability within each SERVQUAL dimension; Scale points, that is, the seven-point Likert scale has a flaw and polarity, that is, the reversed polarity of items on the scale causes respondents error.

This study takes a different perspective. Rather than use a non-comparative model, the approach advocated here uses a comparative evaluation model. However, while Clare and Peter (2005) request customers to make comparison of firms with regard to a service dimension and then rate their satisfaction level for either firm, they use the AHP model to help managers identify which reliability, assurance, tangibles, empathy and responsiveness (RATER) service dimensions require attention to create a sustainable competitive advantage. This study used AHP (which has a nine-point Likert scale) to request customers to compare different service dimensions with each other and with firms in the Nigerian aviation. This provides a more meaningful analysis for assessing the determinants of customer satisfaction.

4. Conceptual Framework for the Study

The AHP model developed by Saaty (1980) was used for this study. AHP is an approach for situations in which ideas, feelings, and emotions are quantified to provide a numeric scale for prioritizing decision alternatives (Taha, 2005). Its hedge over other models is its ability to permit the inclusion of subjective factors in arriving at a recommended decision (Anderson, Dennis & Williams1994). AHP uses a process of par wise comparison to determine the relative importance and thus prioritize alternatives in a multi-criteria decision making problem. It also gives room for sensitivity test by computing the consistency ratio to do a check and balance on the consistency of the respondent to his subjective judgment inclusion in the decision-making. Saaty (1980) pointed out that although the AHP model was originally developed for solving multi-criteria decision making problems, its practicality and versatility had allowed AHP to be widely applied in many different areas, including marketing.

An airline choice can be conceptualized as a customer's selection of an airline from a set of alternatives. The selection is determined by various factors, including the comparative attributes of the airlines in the consideration set, noting that the contents of service quality may be different in different industries. According to IATA, service items for airlines include seat reservation, selling ticket, airport check-in, cabin service, baggage delivery and the subsequent services after arriving at destinations, etc. In general, from a customer's perspective, the service items of airline should include flight frequency, flight safety, cabin food and beverage, seating, flights on schedule, etc. (Chen & Liu, 2002; Ukpere, *et al.* 2012). Gaining high levels of customer satisfaction is thus very important to business because satisfied customers are most likely to be loyal, make repeat bookings and use a wide range of services offered by the business. Knowing what customers want then makes it possible to tailor everything a firm does to pleasing the customers.

Since the AHP involves decomposing the decision problem into a set of variables that are organized into a hierarchy and enables decision makers to make choices among a number of alternatives and criteria by formulation priorities and making a series of tradeoffs. To adapt the AHP to this study required identification of the objective, the criteria (i.e. the factors that affect the objective) and the alternatives (Oyatoye, Okpokpo & Adekoya, 2010; Adekoya & Oyatoye, 2011; Joseph, Oyatoye & Ike, 2011; Oluwafemi & Oyatoye, 2012).The AHP model adopts the use of diagram in form of hierarchy to model real-life situations (Saaty, 1980). The four levels of the model for this study were as follows:

First Level: The objective; determinants of customers satisfaction in the Nigerian Aviation Industry (CSNAI).

Second Level: Services provided by the airlines. Ticket and Reservation (TR); Airport Services (AS); On Board Services (OBS), Ticket Fees (TF), and Flight Schedule (FS).

Third Level: The components of each service provided by the airlines under Ticket and Reservation: Speed on Responding to Request (SRR); Information or Reconfirmation and Ticket Purchase Time limit (IRT); Convenience of ticket purchase (CTP); Convenience of Flight Schedule (CFS); Courtesy and Helpfulness Staff (CHS); and Information Related to Flight (IRF). Under Airport Services: Orderliness and Cleanliness of Check-in-area (OCCA); Speed of Check-in Process (SCP); Information on Flight Status (IFS); Boarding Process (BP); On Time Departure (OTD); Services at Transit Point (STP); Baggage Handling Services (BHS); and Airport Facilities and Services (AFS). Under Onboard Services: Cabin Appearance (CA); Cabin Crew Dressing (CCD); Attention to Cabin Safety and Services (ACSS); Attitude and Friendliness of Cabin Crew (ACFCC); Efficiency of Service Delivery (ESD); Interaction with Passengers (IWP); Timely Response to Customers Request (TRPR); Clarity and Frequency of In-flight Announcement (CFIA); Quality/Quantity of Meals (QQM); and Efficiency of Cabin Crew (ECC). Under Ticket Fees: Fees Before 20 minutes to flight (FB20); Fees before 1 Hour to flight (FBH); Fees before 1 Day to flight (FBD); and Fees for Missed Flight Schedule (FMFS).

Fourth Level: The alternatives considered for this study were the following local airline operators in the Nigerian Aviation industry: Dana Air (DA), Afrijet Airlines (AAL), Aero Contractors (AC), Afrik Air (AA), Air Nigeria Airways (ANA), Chanchangi Airlines (CA), and IRS Airlines (IA). The AHP model employed by the study is shown in Figure 4.1.

5. Methodology

The objective of this study is to assess the determinants of customer satisfaction in the Nigerian aviation industry, using the AHP model.

Ontologically, this study took a realist view and employed a positivist epistemology. Thus, it adopted the quantitative approach and a descriptive and explanatory survey (paper-based questionnaire) designed in a non-controlled setting, where the researchers were not in complete control of the elements of the research. The study area is Muritala Mohammed Airport 2, the busiest air terminal in the West African sub-region located in Ikeja, Lagos State, Nigeria. This terminal, according to Babalakin (2008), constitutes about 38% of national domestic customer's traffic and 32% of domestic aircraft movements. The population of the study comprises all the individual customers who board domestic

116

airlines through the MMA2 terminal. The data for this study were collected through a self-completion questionnaire, designed by the authors. The Convenience sampling and Snowballing technique was used to select the participants for the study after approval had been obtained from relevant authorities for the purpose.

In accordance with the conceptual framework described earlier, the questionnaire was designed by using the dichotomous questions, based on Saaty's scale of preference, to form a Likert Scale types of questions. The questionnaire was divided into two sections. Section A sought for demographic data of the respondents, while Section B sought for data on relevant variables that can determine customers' satisfaction. Section A was designed, using closed-ended response structure, while Section B was designed using the modified version of Saaty's scale of preference, using relevant variables identified in previous studies (Chen & Liu, 2002; Ukpere, *et al.* 2012). To minimize interpretation bias, respondents were provided with the definitions of each service dimension. The judgments were based on a nine-point relational scale of importance, similar to the one used in the original AHP instrument (Saaty, 1980). According to the scale used in this study, 1 represents Equally Important, 3 represents Moderately More Important, 5 represents Strongly More Important, 7 represents Very Strongly More Important, 9 represents Extremely or Absolutely More important, while 2, 4, 6, 8 represent intermediate values, reflecting compromise in-between the two ends.

Subsequently, the instrument was validated through content analysis and pilot study on a sample of 20 respondents. However, by applying the AHP to survey research questionnaires, respondents' perceptions can be clarified more precisely than by traditional methods (Sato, 2001). Also, the method use here, the AHP, is a solid and rigorously validated approach and, as a multicriteria decision making method, the AHP elicit judgments that faithfully represent the real world and give credible results when synthesized for the complete problem (Saaty & Peniwati, 2008).

Field assistants who were undergraduates of the Faculty of Business Administration, University of Lagos were recruited and trained, to administer the questionnaire for *three days that is 11ᵗʰ of March to 13ᵗʰ of March 2013* to customers waiting at the lobby of the MMA 2. A total of 100 customers participated in the survey; 85 responses, representing 85%, were found useable on retrieval and were analyzed using the SPSS version 20 and Expert Choice 2000 software.

6. Results and Discussion

6.1. Demographics

Findings reveal that 59 (71.1%) of the respondents were male, while 24 (28.9%) were female. Seventy-seven (95.1%) of them were from 40 years and below, whereas fifty-two (64.2%) fell between 21 – 30 years of age; 48 (60.8%) were HND/BSC degree holders; 19 (24.1%) were MBA/M. Sc. degree holders, while 4 (5.1%) had the PhD degree. With regards to working experience, while 27 (35.1%) had worked between 4 – 6 years, 55 (71.4%) had worked for 10 years and below; and 22 (28.6%) had worked for 11 years and above. 16 (19.8%) of the respondents were either self-employed or artisans, 17 (21.0%) were civil servants, 22 (27.2%) were either businessmen or women, while 26 (32.1%) were employees or staff of corporate organization. Also, 18 (24.7%) of the respondents earned less than ₦1 million per annum, 67 (91.8%) earned from ₦5 million and below per year and 6 (8.2%) earned ₦6 million and above per annum. The study also reveals that with regards to frequency of travelling by air, 18 (22.2%) of the respondents travelled weekly, 40 (49.4%) travelled monthly, 11 (13.6%) travelled quarterly, 6 (7.4%) travelled yearly and 6 (7.4%) rarely travelled frequently by air. The analysis showed that 11 (13.6%) of the respondents patronized only one airline operator, 18 (22.2%) patronized two airline operators, 26 (32.1%) patronized three airline operators, 16 (19.8%) patronized four airline operators and 10 (12.3%) patronized five and above airline operators. Also 86.4% (70) of the respondents patronized at least two airline operators.
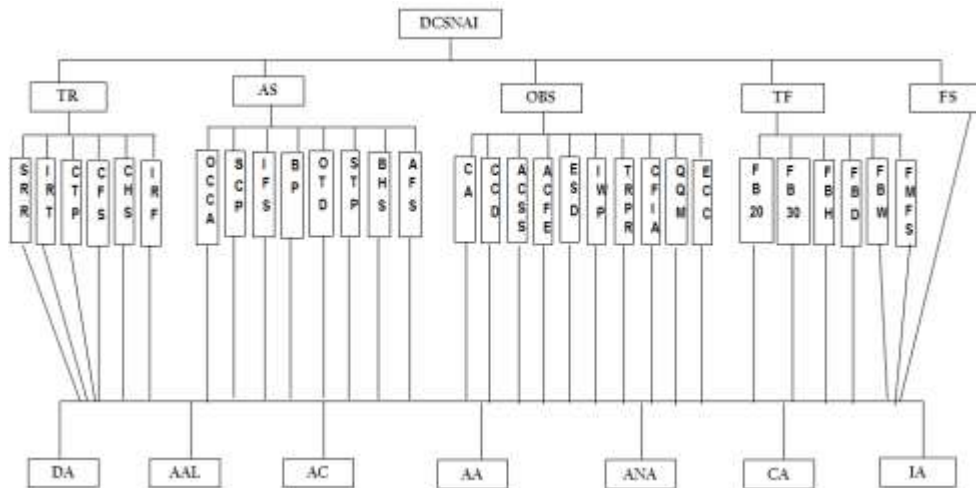

Figure 4.1 The AHP model for the study

6.2. Consistency Index (CI)

The consistency ratios of all the pairwise comparison matrices were less than 0.1. Hence, judgments of the respondents were all seen to be consistent, and therefore, acceptable.

6.3. Composite Priorities

The analytical hierarchy process model used for this study, has four levels: the goal, the criteria, the sub-criteria and the alternatives. The priorities for the customers' critical preference of the factors that determine their satisfaction in using the airlines in the Nigerian Aviation industry are presented in the following tables:

Table 1. Composite priorities of the sub-criteria with regards to the Ticket and Reservation service provided by the airlines

Sub-criteria under Ticket & Services	SRR	IRT	CTP	CFS	CHS	IRF
Pooled Average Composite priority	0.202	0.163	0.154	0.158	0.151	0.185
Relative preference ranking	1	3	5	4	6	2

Source: Survey Research (2013)

Table 1 showed that customers believed that with regards to the Ticket and Reservation service provided by the airlines in Nigeria aviation industry, the most preferred component is Speed in Responding to their Request (SRR), which had the highest rank, closely followed by Information Related to Flight (IRF) and Information or Reconfirmation and Ticket Purchase Time Limit (IRT). These were then followed by Convenience of Flight Schedule (CFS), Convenience of Ticket Purchase (CTP) and Courtesy and Helpfulness of Staff (CHS), respectively.

Table 2. Composite priorities of the sub-criteria with regards to the Airport services provided by the airlines

Sub-criteria under airport services	OCCA	SCP	IFS	BP	OTD	STP	BHS	AFS
Pooled Average Composite priority	0.152	0.124	0.123	0.119	0.117	0.130	0.115	0.116
Relative preference ranking	1	3	4	5	6	2	8	7

Source: survey research, 2013.

The analysis of table 2 revealed that, with regards to the airport services provided by the airlines, the most preferred component is Orderliness and Cleanliness of Check-in-Area (OCCA) which had the highest rank, closely followed by Services at Transit Point (STP) and Speed of Check in Process (SCP). These were then followed by Information on Flight Status (IFS), Boarding Process (BP), On-time Departure (OTD), Airport Facilities and Services (AFS) and Baggage Handling Services (BHS).

Table 3. Composite priorities of the sub-criteria with regards to on board services

Sub-criteria under on board services	CA	CCD	ACSS	AFCC	ESD	IWP	TRPR	CFIA	QQM	ECC
Pooled average composite priority	0.1253	0.1080	0.1080	0.1082	0.1081	0.1083	0.1080	0.1083	0.1081	0.1037
Relative preference ranking	1	8	8	4	5.5	2.5	8	2.5	5.5	10

Source: survey research, 2013.

Observation from Table 3 showed that with regards to the on-board services provided by the airlines, the most preferred component is Cabin Appearance (CA), which had the highest rank. This is closely followed by both the Interaction With Passengers (IWP) and Clarity and Frequency of In-flight Announcement (CFIA) in the same ranking. These were followed by Attitude and Friendliness of Cabin Crew (AFCC). Closely following this are the Efficiency of Service Delivery (ESD) and Quality/Quantity of Meals (QQM) also in the same ranking. They were followed by Cabin Crew Dressing (CCD), Attention to Cabin Safety and Services (ACSS) and Timely Response to Passengers Request (TRPR). Finally, the component in the last rank is Efficiency of Cabin Crew (ECC).

Table 4. Composite priorities of the sub-criteria with regards to Ticket fees

Sub-criteria under ticket fees	FB20	FB30	FBH	FBD	FBW	FMFS
Pooled average composite priority	0.1839	0.1624	0.1624	0.1623	0.1624	0.1624
Relative preference ranking	1	3.5	3.5	6	3.5	3.5

Source: Survey Research 2013

Table 4 showed that customers believed that, with regards to the ticket fees services provided by the airlines in Nigeria aviation industry, the most preferred component is Fees before 20 minutes to flight (FB20) which had the highest rank. This is closely followed by the Fees Before 30 minutes to flight (FB30), Fees Before one Hour to Flight (FBH); Fees Before one Week to flight (FBW) and Fees for Missed Flight Schedule (FMFS) which were ranked equally. Finally the last component in the rank is Fees Before one Day to flight (FBD).

Table 5. Composite priorities with regards to flight schedule

Flight schedule	DA	AAL	AC	AA	ANA	CA	IA
Pooled average composite	0.169	0.148	0.146	0.135	0.137	0.133	0.134
Relative preference ranking	1	2	3	5	4	7	6

Source: Survey Research, 2013

The analysis of Table 5 revealed that, with regards to the flight schedule services provided by the airlines in Nigerian aviation industry, the customers preferred Dana Airlines (DA) the most in terms of satisfaction because it had the highest rank. This is closely followed by Afrijet Airlines (AAL) and Aero Contractors (AC). These were followed by Air Nigeria Airways (ANA), Arik Airline (AA), IRS Airlines (IA) and Chanchangi Airlines (CA)

Table 6. Composite priorities with regards to Goal

Goal: DCSNAI	TR	AS	OBS	TF	FS
Pooled Average Composite Priority	0.221	0.2	0.2	0.2	0.2
Relative Preference Ranking	1	3.5	3.5	3.5	3.5

Source: survey research, 2013

Table 6 showed that, with respect to the main goal, the most determinant factor that leads to satisfaction among customers of airlines in the Nigerian aviation industry is the ticket and reservation services (TR) which had the highest rank. The remaining services, that is, Airport Service (AS), On-Board Services (OBS), Ticket Fees (TF) and Flight Schedule (FS) were ranked equally by the customers.

7. Conclusion and Recommendation

In this study, an appropriate research model has been developed to assess the determinants of customers' satisfaction in the Nigerian aviation. The paper has been able to identify the relative importance of the antecedents of the transaction-specific customers with some critical service items provided by airline operators in Nigeria. The results of the AHP model show that customers of airline operators derive their satisfaction when airlines respond quickly to their request and provide information in relation to their flights.

Secondly, the orderliness and cleanliness of check-in area services at transit points and speed of check in process are factors that increase customers' satisfaction. The customers also show high preference for cabin appearance, interaction with passengers and clarity and frequency of in-flight announcements in terms of their satisfaction.

The analysis further reveals that fees before 20 minutes, fees before 30 minutes and one hour to flight give them higher satisfaction. The reason for this is that Nigerian customers, due to frequent unplanned trips might get to the airport late and would appreciate it, if the fees charged for these services by airlines are reasonable unlike, what currently occurs in the industry. Furthermore, the customers point out that they derive more satisfaction with Dana Air, Afrijet Airlines and Aero Contractors with regards to their flight schedules.

Finally, although there was not much relative preference in terms of customers satisfaction regarding the services provided by the airline operators in Nigeria, customer satisfaction is derived more from how the airlines handle their ticketing and reservation services. The ability to understand a customer's disposition towards a service is essential for market analysis and through this analysis, one can determine which factors contribute to a customer's higher degree of satisfaction, and, thereby, be able to design effective marketing strategies (Engel, James, Kollat, & Blackwell, 1993). Given this and the fact that companies which manage to satisfy their customers are likely to retain them for as long as possible and turn them into loyal customers and be in a better competitive advantage, the study recommends that organizations in the Nigerian aviation industry should re-evaluate their policies in line with the above-mentioned critical service items of customers'

satisfaction prioritizations. Adhering to this would reduce the churn rate, a study also reveals that about 86.4% of the respondents patronize, at least, two airline operators, which can affect their financial performance.

7.1. Limitations and Future Research

The current study presents exhibit limitations that should be considered. The first relates to the sample size of the current study which is 100. Although this sample size meets the minimum requirements, the researcher may use a bigger sample size to assess the determinants of customer satisfaction in the Nigerian aviation industry. Secondly, the study covers only the customers of private local airline operators and excludes foreign airlines. The research study is also limited to one location by collecting data from customers at Muritala Mohammed Airport 2 only.

The AHP model is used for customers flying local routes. However, this model can be used to study customers on international routes. Similarly, further research may select a bigger sample size or be extended to determine customers' satisfaction with regards to the geo-political zones in Nigeria.

8. Acknowledgement

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Factorial Analysis of Albanian Housing Market

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Abstract: Housing market and housing price dynamics are very important to the economy. About 65% of households in the western world and 85% of Albania's own private apartment. The market of residential estates is very complex and influenced by many factors, some of which are hard to be measured. Such factors include handling of taxes and remittances. The analysis of such factors becomes more complicated by the interference of temporary trends during the period that some explanatory variables have at their disposal. This generates an important identification problem, which prevents the accurate evaluation of long-term changes in the housing prices. The data used in this study are extracted from reports of Bank of Albania, INSTAT, IMF and newspaper "Celes" as well as from surveys to individual purchasers, investors and developers. Through the model it is analyzed the development of residential estates' market compared to the historical trend of housing prices and to the theoretical determinant. The econometric model used is a generalized multiple regression equation. The model allows us to see the dynamic interaction between the housing prices and the variables selected according to hypotheses on the very complex economic structure associated with this market.

Keywords: housing market; price of housing; factors affecting housing prices; analysis of regression

JEL Classification: R2, P2

1. Introduction

Housing is the most important component of the wealth of a family (about 33% in USA). In USA and other developed countries the building of the new residences occupies a very important part of PBB. In Albania the building sector occupies about 12% of PBB. Real estate is a necessary benefit, because people have to live somewhere, the investment on housing is an important private individual investment. Some studies have discovered that the changing of the prices on the housing market has a greater influence on the economy than the changing of the prices on the share market (IMF, Debelle).

The inventory and structure of real estate owned by the Albanian population have undergone significant changes over the time. Throughout a century the real estate ownership rate in Albania has almost tripled. During the Zog Kingdom ruling, it has been legalized the right to own real estates and confirmed the property papers issued by the Ottoman authorities. With the passing of time, the establishment of

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the communist regime brought about the adoption of the Agrarian Reform, which altered many property relations. With the agrarian reform, real estate were first taken from their legitimate owners and then distributed to the mass population with no compensation at all for the expropriated owners. Soon, this agrarian reform gave place to such transformations as collectivism and industrialization after the Soviet model, which transformations were again followed by alterations in the property rate.

In the early nineties, for the purpose of settling a market economy, a number of significant reforms were adopted, such as the land reform, the privatization of dwelling houses and apartments and the privatization of former state factory buildings. Albania had been one of the most socialized countries and elements of private estates were almost missing. Accordingly, privatization was to be considered not only a transformation of property rights, but mainly a way of restoring negated rights for half a century. In socialism most Albanians had been poor and owned no financial asset. Therefore, the property transfer –included state property, was made free of charge.

The privatization of dwelling estates occurred at a time when public property prevailed in the market. During socialism, dwelling houses and apartments in Albania had been a property of the state with occupiers paying for a symbolic rent. The housing situation in Albania was really dreadful with only 219 residential units for 1000 inhabitants owned in Albania in the 1990, far away from the average of former communist countries. What happened in Albania was a 90% privatization of the residential market, which offered new owners the opportunity to sell their private estates and employ the received funds as total or partial price paid for new residences, thus making the foundations for the building of a primary and secondary residential market.

The construction sector in Albania is one of the main sectors of the Albanian economy undergoing the greatest increase over the last 20 years. A great number of construction companies have been established, especially in the last decade, which have placed substantial free financial resources in the hands of the population and employed a significant number of workers. The best expression of this development is the fact that an important part of the Albanian GDP is provided by the construction sector. In 1996, the construction sector made only 4.9% of the GDP, whereas in 2013 such a rate increased to 13% of the GDP. A considerable number of construction companies operate in the construction sector, which make an average circulation of over 1.5 billion EUR per year. The fall of the communist regime resulted in a powerful movement from rural to urban areas of the population, urged even by the uncertainty of the securities and the availability of free lands, which lands were mainly used to build informal residential buildings.

Furthermore, a half million $/per year remittances gave an incentive to the construction sector, although land and construction development at this point was totally informal. In Albania, after the nineties approximately 270.000 informal buildings worth of a 3 billion $ investment have been constructed. The last decade was a period of innovation and market expansion to such an extent, that was never seen before. The market is dependent on the policies of reform housing sector such as fiscal policies, financial and real estate market. The housing market has a series of distinctive traits and common to a great extent with other sectors of the real estate market (offices, shops, garages etc).

2. The Methodology and Model

This work makes an analysis on the performance of real estate market and residential market in Albania. The residential market is a very complex one, with many influential factors, some of which are difficult to be measured, for example those related to taxes and remittances. In preparing this work we have employed a wide literature, which consists in texts and works of local and foreign authors and studies of national and regional character.

Analyzing the role of various factors is made more complicated with the temporary tendencies of some explanatory variables. This results in a significant identification problem, which prevents us from appropriately evaluating the effects on long-term price. The data on housing market performance have been collected through recent information on fiscal and legislative reforms, through interviews to employees of Real Estate Registration Office, real estate agencies, Informal Buildings and Urbanization Agency (ALUIZNI) and to constructors, also from documents of Bank of Albania, reports of international agencies, newspapers and information form Statistic Data Institute (INSTAT), IMF and newspaper "Celesi". This stage includes the formation of a database aimed at information identification and evaluation.

The model we have employed is an effort to analyze the development of residential estates in comparison with the historical trend of residential prices, as well as in comparison with the theoretical issues by utilizing evident data. This is an econometric model, a generalized multiple regression equation, where house prices are a function of the following factors: inflation, GBP, interest rate of credit and deposits, remittances, construction permits, construction Cost Index. The models allows for considering the dynamic interaction between the housing prices and the variables selected over the complex economic structure of real estate market.

3. The Development of the Housing Market in Albania

3.1. The Development of the Housing Market until 1990

There are three basic periods of the development of the real estate sector in Albania.

Before 1944, best buildings during this period, are those of one floor and 2-3 floor buildings. Most pre-war housing was "self-build". From Table 1 we observe that by the year 1945 housing stock consisted of 215 thousand apartments.

Table 1. Housing stock since 1945

Year	Stock of housing	Specific weight
- 1945	215,000	27,3%
1945-1960	80,000	10,1%
1961-1980	230,000	29,29%
1981-1990	140,000	17,8%
after 1990	120,000	15,2%
Total	785,000	100,00

Sourse IMF

1944 - 1990, This period is characterized by buildings, which are prone to altitude and their composition was based on "rational urbanization" relative spaces provided as urban green areas. In Albania since 1944-1990 are built around 457,300 living apartments. Production during the communist era was at a rate of 10,000 units per year. In this period of housing the apartments were built by the state. About 75,000 apartments (IMF) are built with volunteer work combined with technical assistance from the state. These apartments were not private property, but were considered for personal use and not a commodity that can be traded. In urban areas, state provided housing for most of population. Houses built in this period were of a low quality. These flats were given in a symbolic value rental use. In the years 1970-1990, in Albania there were built around 2/3 of the current stock compared to about 40% which were built in Estonia, Poland, Slovakia, Hungary. (Hegedus).Since the year 1990, there have been built about 15% of houses, but we must point out that here we do not include the illegally built houses, which were built during these years and are estimated to be about 270.000 buildings in the whole country.

3.2. The Development of Housing Market after 1990

In Albania the first elements of real estate market were created from 1990s up to 1997. The privatization of the houses was completed based on Law No. 7652 in year 1992.

According to this law, no one was forced to become owner of the apartment, but they would remain tenants, having to face a threefold increase of housing rental fee. Apartments consisting of two rooms and a kitchen, built up to December 31, 1965 and houses, consisting of one room and a kitchen, built up to December 31, 1970, were given free of charge ownership to the tenants.

Within a year Albania carried out the housing privatization (about 98% of the existing stock), this way it became the country which accomplished the privatization quicker than all the other countries of Central and Eastern Europe (Hegedus). Unlike reform strategies to privatize dwellings that were followed in the former communist countries such as Bosnia and Herzegovina where were carried out with coupon privatization, or Bulgaria, Romania, Serbia and Montenegro where were privatized with low prices and privatization in Russia with 50% of the price apartment, in Albania the strategy followed for the privatization of housing, because to high inflation and lack of financial possibilities in Albanian families, the privatization was accomplished "free" or almost free. (Tsenkova).

Housing prices ranged $ 180-200 / m² this for existing assets, and with regard to new construction, they have a higher price of 250-300 $ / m². Naturally, this market was very rudimentary, due to very low purchasing power that characterized the Albanian families at the time, but also a lack of information and expertise. However, during this phase, the market did not have a great influence, because it was competitive with citizen investments in pyramid schemes. Throughout this period, prices witnessed a relatively small increase in more expensive regions, such as the block in Tirana where the price of housing was about $ 300 per square meter.

These were high prices for the time being, and the price level was not influenced even by the fact that these houses were bought at a very low price. We can simply mention the fact, that an apartment with a surface of 80 m² was privatized with a value of 24,000 ALL whereas it was sold in free market at the price of 1.4 million while the income of the population was very low. GDP per capita in 1994 was $ 823, so the price / income in the period when the price of an apartment in Tirana has averaged 35,700 ALL is estimated to be about 66, while the estimated average prices today this ratio is 27. The development of the real estate market in Albania differs from the increase of this market in the other countries of the region. In countries such as Hungary, Bulgaria and Montenegro, the boom was caused by the desire of people to buy second or third homes while in Albania, the demand is high

particularly for the main dwelling. Housing prices during this period have grown continuously. It is estimated that on average these prices to be increased by 10-15% per year. House prices have increased on average of $ 200 / m² in 1990, at $ 280 / m² in 1996, $ 370 / m² in 1999 to reach EUR 800 / m² in 2009.

During this period, house price growth has also come as a result of increased foreign currency exchange rate euro dollars in the years 1993 -1996. Housing prices expressed in local currency, while in the years 1997-2002 in dollars. While the entry of European euro currency in use in 2003, real estate prices began to be expressed in that currency. The exchange rate of euro reached 137.5 ALL and was higher than the exchange rate of the dollar, which depreciated by 30% referring to year 2000, thus affecting the growth of housing prices. This put in difficulty the operation of the real estate market, because Albanian family income are in local currency.

Theoretical conclusions define the factors that affect housing prices as follows:
- the income/per capita;
- the index of the cost of building;
- the number of the population;
- the inflation rate;
- the employment level in %;
- the average rate of the interest of the credit;
- the exchange rate USD/All;
- the exchange rate euro/All;
- the number of the building permissions;
- remittances.

The interest rate on deposit and loan interest rates are nominal rates, while the income per capita is the overall number of residents. It would be of interest to have data per capita income of the population aged 25 to 45 years, because it's the part of the population that has the highest level of investment in housing. Data on construction costs expressed in the form of construction cost index assuming that these costs change would be a qualitative variable in the extent of change in house prices, it is worth noting that we have not taken into account in these variables tax effect. Data on remittances are also at nominal value, it is thought that remittances have contributed to the growth of house prices in Albania, despite the lack of data at national level, how much of remittances are used as an investment in real estate.

Table 2. Factors affetings the housing market

Variables	GDP (mln $)	Inflation (%)	Population (mln)	Employment(%)	Deposit rate (%)	Loan rate (%)
1996	3013,218	17,4	3,14	59	16,7	23,96
1997	2196,224	42,1	3,12	57	27,8	43
1998	2727,745	8,7	3,07	58	22,2	25
1999	3434,402	-1	3,06	56,3	12,9	21,6
2000	3686,649	4,2	3,06	55,1	8,3	22,1
2001	4091,02	3,5	3,06	55,9	7,8	19,6
2002	4449,373	2,1	3,07	51,9	8,5	15,7
2003	5652,325	3,6	3,08	51	8,38	14,2
2004	7464,447	2,9	3,09	58,8	6,6	11,76
2005	8376,483	2	3,11	57,8	5,6	13,07
2006	9132,562	2,6	3,12	56	5,2	12,94
2007	10704,66	3,1	3,13	56,4	5,6	14,1
2008	12968,65	2,9	3,14	53,8	6,8	12,85
2009	12118,58	2,3	3,14	53,4	5,46	13,9
2010	11858,17	3,46	3,15	52,1	6,42	12,8
2011	12959,56	2,99	3,15	52,3	5,86	12,4
2012	13119,01	3	3,16	52,4	5,4	10,9

Source Bank of Albania, IMF, INSTAT

Table 3. Factors affetings the housing market

Variables	Exhange rate dollar /lek	Exhange rate (euro/lek)	GDP/capita ($)	Number of building permits	Construction cost index (%)	Remittances (mln $)
1996	104,6	-	850	2178	67,8	550,9
1997	148,9	-	750	719	78,3	300,3
1998	151	-	820	1172	89,1	504,14
1999	138	-	910	981	96,8	407,2
2000	144	-	1090	1599	106,3	597,8
2001	143,4	-	1250	1384	113	699,3
2002	140,1	132,4	1320	906	114	733,57
2003	121,9	137,5	1580	900	117,1	888,748
2004	102,8	127,6	2030	885	120,7	1160,672
2005	99,9	124,2	2540	1750	122,3	1289,704
2006	98,1	123,1	2940	1491	123,7	1359,467

133

2007	90,4	123,6	3310	466	126,8	1468,02
2008	83,9	122,8	3850	1346	129	1495,038
2009	95	132,1	4030	1396	128,4	1318,476
2010	103,93	138,7	4040	1845	99,6	1156,021
2011	100,89	138,9	4050	1604	100,12	1161,784
2012	108,18	139,5	4090	447	100,7	1167,546

Source Bank of Albania, IMF, INSTAT

The data we used have to do with the average prices of the real residential wealth in some of our country's major cities, provided by published reports in the ” Çelësi” from real estate agencies and from the surveys. Due to lack of data and greater accuracy, we have considered only the period from 2000-2009, when the information is complete and data from real estate agencies are more accurate. Before this period, the market was much more limited and much more informal.
Also, to avoid the effect of 1997-1998 and the events that caused a shock in the Albanian economy, being a rare occurrence and statistically significant impact on the model, we think it proper not to take it into consideration

Table 4. Average prices of residential apartments cities (000lek/square meters)

Cities	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Tirane	51	55	58	66	72	82,5	102	105	112	124	122	126	113
Durrës	53	60	61	65	71	80	86	89	96	110	108	112	100
Vlore	50	48	49	55	63	71,3	85	88	94	108	106	109	98
Elbasan	41	43	44	46	51	53	55	58	59	65	64	66	59
Shkodër	38	40	42	46	52	58	66	68	70	74	73	75	67
Fier	40	43	45	48	54	60	67	70	72	76	75	77	69
Berat	31	33	34	39	38	40,6	45,9	47,9	50	55	54	56	50
Lushnjë	26	38	39	42	45	46	47,6	52,3	54,8	60	59	61	55
Kavajë	41.5	43	45	50	56	62	69	72	74	78	77	79	71
Average	**41.2**	**44.7**	**46.3**	**50.7**	**55.7**	**61.4**	**69.2**	**72.2**	**75.7**	**83.3**	**82.0**	**84.4**	**75.9**
D.Stand.	**9.0**	**8.3**	**8.6**	**9.4**	**11.2**	**14.3**	**18.8**	**18.7**	**20.8**	**24.5**	**24.0**	**24.9**	**22.3**

Source Processing of the author on the basis of market research

134

By statistical processing of the data, we notice lots of differences between the 3 main cities (Tirana, Durres, Vlora) and other cities, which is verified by a standard deviation of price. In 2009, this deviation was 24.56, or roughly a quarter of the average price (table 4).

This is due to substantial price changes in major cities compared with prices of apartments in other cities. So housing prices, as seen vary depending on the size of the cities in which they are located, in general there is a positive relationship between the size of cities and housing prices, for example, average prices are higher in throughout years in Tirana, Durres, Vlora. If we to take a look at prices in smaller cities, we will notice that the highest price is in Kavaja and lowest price in the city of Berati. Also there is a price difference between the coastal cities compared to other cities. The high price levels are because of are economic factors in the large cities, but also a high demand for housing associated with large relative lack of land in these cities. While in terms of coastal towns we can say that the price increase reflects also the demand for second homes. To avoid impact on the standard deviation, the prices of major cities, which are about 2-3 times higher than those in small towns, we intended to analyze the standard deviation apart from that in major cities (Table 5). As seen from the data, the values are much more durable and there is low variability. Deviation is less than 9% for the 3 major cities and smaller than 10% for others (Table 6).

Table 5. Average prices of residential apartments cities (000lek/square meters)

Cities	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Tiranë	51	55	58	66	72	82,5	102	105	112	124	122	126	113
Durrës	53	60	61	65	71	80	86	89	96	110	108	112	100
Vlorë	50	48	49	55	63	71,3	85	88	94	108	106	109	98
Average	51.3	54.3	56	62	68.67	77.93	91	94	100.7	114	112	115.7	103.7
Dev. Standard	1.5	6.0	6.2	6.0	4.9	5.8	9.5	9.5	9.8	8.7	11.3	12.0	10.6

Source Processing of the author on the basis of market research

Table 6. Average prices of residential apartments cities (000lek/square meters)

Cities	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Elbasan	41	43	44	46	51	53	55	58	59	65	64	66	59
Shkodër	38	40	42	46	52	58	66	68	70	74	73	75	67
Fier	40	43	45	48	54	60	67	70	72	76	75	77	69
Berat	31	33	34	39	38	40	45,9	47,9	50	55	54	56	50
Lushnjë	26	38	39	42	45	46	47,6	52,3	54,8	60	59	61	55
Kavajë	41,5	43	45	50	56	62	69	72	74	78	77	79	71
Average	**36.2**	**40**	**41.5**	**45.1**	**49.3**	**53.2**	**58.4**	**61.3**	**63.3**	**68**	67	69	61.8
Dev. Standard	**6.3**	**4**	**4.3**	**4.0**	**6.6**	**8.4**	**10.2**	**10.0**	**10.0**	**9.4**	**9.1**	**9.1**	**8.4**

Source Processing of the author on the basis of market research

In addition, there will be applied a model to determine whether the results do prove theoretical conclusions about the impact that variables in housing prices in Albanian market have. The depended variable considered is the average level of house prices in Albania. This variable is calculated as the average price of housing in some major cities of the country, and it is estimated that the average price is a good approximation of the market. Also the prices obtained for each city are average prices of housing, fact that should be kept in mind when interpreting the model. Details include a period of 10 years. Having in mind that the number of variables studied is relatively large, while the number of observations is small, it is difficult to build up a model with many variables. Statistically is preferred that the number of observations be at least 5 times the number of variables. However, the application of this model is done taking into account all the variables and afterwards eliminate those variables, which result according to the modeled irrelevant. GDP and per capita income are strongly related to each other. GDP growth also brings increased income per capita of the population, therefore, will only be used per capita income. From the processing of data with multiple regression model, the resulting regression equation as follows (Table 7).

Table 7. Analysis of regression

Predictor	Coef	Secoef	T	P	VIF
Constant	24,2	40,57	-1,3	0,265	
Remittances	0,01489	0,02552	2,58	0,591	59,564
Construction cost index	0,7608	0,3338	2,28	0,005	36,79
Inflazione	-0,5531	0,4669	-1,18	0,302	17,37
Population	157,3	116,8	1,35	0,249	14,712
Employment	-0,199	1,031	-0,19	0,856	4,527
Deposite rate	-0,5694	0,6312	-0,9	0,418	14,301
Exhange rate	-0,0404	0,2659	-0,15	0,887	30,259
Loan Rate	1,2237	0,9291	1,32	0,258	39,204
Permit construction	-0,017057	0,005663	-3,01	0,0247	1,731
Gdp/capita	0,002808	0,000197	1,43	0,0249	1,352

Price=24.2+0,0148remittances+0,7608constructionindex-0,5531inflazione+157,3population-0,199 emplyment-0,5694 deposite rate-0,0404 exhange rate+1,2237 loan rate-0,017 permit construction+0,0028 GDP/capita

$S = 4,45088$ $R\text{-}Sq = 98,9\%$ $R\text{-}Sq(adj) = 96,1\%$

Table 8. Analysis of variance

Source	DF	SS	MS	F	P
Regression	10	6943,5	694,35	35,05	0,002
Residual Error	4	79,24	19,81		
total	14	70223			

Durbin-Watson statistic = 1,91120

The model has a high degree of approximation of $R^2 = 96.1\%$ as can be seen. This value indicates that 96.1% of the variation in prices shall be determined by linear combination of the above variables, with a deviation of 44%. Values of p (probability)> 0.05, show the weak importance of influence that some factors have.

Statistical indicator Durbin-Watson = 1.91120 is insufficient to explain the variation. It shows a high presence autocorrelation. It is noticed that the involving a relatively large number of variables, regardless of theoretical references, leads to a

fictitious increase of the coefficient of determination. We can than say that in such a situation, it is evident that the model suffers from multicollinearity, which means that the variables are correlated between them. The application of the model would recommend removing some of the variables, which become not so important in the impact that they practically have.

By statistical processing of data for the calculation of correlation coefficients, are obtained the following results (Table 9).

Table 9. Correlation between variables

Variables	GDP	Infl	Pop	Empl	D. rate	L. rate	E. rate	GDP/ capit	Con. permit	Price	Con.C.Ind	Rem
GDP	1	-0,52	0,98	0,37	-0,73	-0,67	-0,9	0,94	-0,31	0,99	0,96	0,81
Inflation		1	-0,5	-0,21	0,52	0,65	0,45	-0,4	0,13	-0,48	-0,55	-0,53
Population			1	0,43	-0,82	-0,69	-0,95	0,93	-0,29	0,99	0,96	0,9
Employment				1	-0,69	-0,28	-0,54	0,37	0,16	0,42	0,42	0,54
Dep.rate					1	0,61	0,83	-0,66	0,11	-0,82	-0,79	-0,93
Loan rate						1	0,82	-0,7	0,31	-0,66	-0,82	-0,8
Exchange rate							1	-0,92	0,24	-0,91	-0,95	-0,94
GDP/capita								1	-0,46	0,9	0,93	0,76
Construction permits									1	-0,37	-0,38	-0,13
Price										1	0,95	0,86
Construction Cost index											1	0,89
Remittances												1

Source author Processing

Having carefully observed the results we can say that:

The price of housing has a high positive correlation with GDP at 0.99 and per capita income. Both indications are strongly correlated between each other (0.94). Per capita income have a correlation coefficient of 0.90 related to the price of residential property. Increasing per capita income increases consumption and also increases the positive expectations.

In such situations, people are interested to invest in housing, whether in the form of investment, whether for use, by giving up the rent of apartments. Price correlation with the number of population is positive and has the value 0.99, because population growth will increase the demand for housing, thus increasing the price of housing.

Correlation with the exchange rate is negative at -0.91, meaning that homes become more expensive, when the domestic currency devalued. This has been very sensitive in the housing market, as purchases of real estate in Albania were only realized in foreign currencies. Until 2003 transactions are conducted in dollars, and after this year on the euro.

Housing prices also have a high positive correlation with the index of 0.95 cost because the prices of materials and wages are a determinant of costs and house prices. Changes broadcast material prices, are reflected in changes in house prices. Here it should be noted that the establishment of fiscal fixed costs has led to problems in the real construction costs in different societies.

A high positive correlation coefficient, as also confirmed theoretically, is between house prices and remittances at 0.86 because immigrants invest a good portion of their savings in housing. But it is difficult to provide information on the remittances that go for investment in housing.

Some of the variables, which from the theoretical point of view are very important and affect the price of housing, do not result as such. For example, inflation has a negative correlation with the value -0.48 and in fact the link between inflation and housing prices is positive, the increase in inflation raises prices. From the theoretical point of view the impact of inflation in housing price oscillations is sensitive and two the explanations are:

First, derives from the nature of housing as a consumption good and as an investment. **Second,** houses frequently used by families as a way to protect their wealth from inflation and then the fact that their property purchase is often financed by a nominal loan, makes it even more satisfying this purpose. Impact of inflation, especially in the period of use shows that the effects of inflation on housing prices would be significantly in longer timeframes (and have available data for a short period of time). Uncertainty of investing in financial assets, in terms of higher inflation also contributes to attracting investment into real estate, as a savings towards long term (coefficient of correlation between the inflation rate and the deposit rate is 0.52. It can be said that inflation is immediate response to changes in economic conditions and changes in house prices only at the moment, that cost of residential property is an important ingredient in domestic consumption. But in terms of our country due to the high level of house prices against low wages and income, residential property cannot be an important component of the consumer. Finally, the relationship between bank lending, inflation and housing prices, it is often influenced by the use of property for the purpose of guarantee. An increase in house prices strengthens the capacity of the families to take loans, and variation in bank lending and easing of credit conditions associated with lower lending rates, will affect the demand and price of assets. The

correlation analysis shows that the correlation between inflation and the interest rate of the loan is high 0.62. A high rate of inflation and higher interest rates restrain the demand for housing. So, even though inflation is theoretically the most important among factors that affect the price of housing, its importance to the impact of changing of house prices, falls by giving space to other factors.

These contrast with the theoretical analysis occur due to multicollinearity, and is confirmed by the analysis of correlation coefficients. The interest rate on deposits, has a positive correlation coefficient with 0.83 exchange rate. A good part of the deposits in Albania is in foreign currency, because of the revenues in these currencies, that Albanian families provide from remittances. Loan rate is positively associated with a 0.82 correlation with the exchange rate, most of our country disbursed loans are in foreign currency 75% (Bank of Albania).

The exchange rate has a positive correlation coefficient with construction cost the with index value of 0.95. Most of purchases of construction materials and machinery are imported in the absence of their production in the country. Noting carefully the equation found in multiple regression model, we see that not all variables result important (judging by value of T and P). Then, are deviated some of the variables, although from theoretical point of view they are very important.

Will be considered only three of them, per capita income, and construction permits cost index (T and P values higher).

Table 10. Analysis of regression

Predictor	Coef	Secoef	T	P	VIF
Constant	38,21	14,27	-4,5	0,01	
Gdp/capita	0,03947	0,000337	1,17	0,266	1,263
Permit construction	-0,002483	0,003235	-0,77	0,459	1,357
Construction cost index	1,0473	0,1125	9,31	0	1,613

Table 11. Analysis of variance

Source	DF	SS	MS	F	P
Regression	3	6582,8	2194,3	54,86	0
Residual Error	11	440	40		
total	14	7022,8			

Regression equation in this case is (Table 10).

Price = 38.21 + 0.0395 GDP /capita - 0.00248 permit construction + 1.05 construction cost index

S = 6,32421 R-Sq = 93,7% R-Sq(adj) = 92,0%

Analysis of Variance(table 11)

Durbin-Watson statistic = 0,399857

Specifically, linear combination of all variables considered, explains 92% of variation of housing price, the rest is explained by errors. Statistical indicator Durbin-Watson = 0.399857 is satisfactory for explaining the variation. Based on regression equation, it can be concluded that the most important variable that has the greatest impact is the construction is the cost index (the value of T = 9.31 and P = 0.000). This is obvious, because of the increased cost, and the increased price of real estate. Costs of construction materials and level of real wages, constitute one of basic elements cost/m2 and eventually for price of a house.

Regression coefficients signs comply with economic logic, which in case means:

1. An increase with a unit cost index would increase by 1.05 unit price of assets, when all other variables remain constant.
2. An increase of one unit of building permits would reduce by 0.0248 unit price of assets, when all other variables remain constant.
3. An increase of one unit of GDP per capita would increase by 0.0395 unit price of assets, when all other variables remain constant. From the analysis it results that if we assume that the per capita income is 0 and lack of building permits, would have a price around 210 Euros or 38,000 ALL, that approximates more or less cost/m2 housing, plus about 104% construction cost index. The model defined as the main variable that affects the performance of house prices, construction cost index.

The impact of incoe per capita is less about 3.95%. Impact of building permits is negative about 0.25%, thus having an almost insignificant effect, although the effect of a change in planning new assets has an impact on the entire real estate market. The above analysis shows that the balance of the housing market, affects the high demand that exists for residential spaces. In the past 10 years per capita income almost tripled, while the average price of housing has doubled. Almost the same thing happened and rental prices of apartments in major cities, but here the differences between the cities are larger.

The model has its limitations, though presented with acceptable parameters.

We should note that the accuracy of a model with a low number of observations, should be called into question. Available data in Albania belong to very short time

and it is very difficult to find more detailed data. On the other hand, and accuracy of the available data itself has its own problems. **First**, a portion of the data are incomplete surveys of the market, such as house prices. Using average prices may not be tightly fitting, due to the very large differences between cities. This is evident by a coefficient of variation of about 30%.**Second**, a piece of data, although obtained from official sources are often contradictory, such as GDP growth, and GDP itself in total. Building permits also do not have a stable and varies greatly from year to year, which increases the unpredictability. If per capita income there is a relatively stable trend and reliable predictions can be made, it can not be said for building permits, which are often subject to political decisions. There are other factors mentioned above, which affect the fluctuation of housing prices in Albania. However, their effects are very often on both sides of the market (demand / supply), give a total of a relatively small impact on price. The econometric model employed to evaluate the influence that macroeconomic variables have on the residential market is somewhat limited, although it is displayed in acceptable parameters. We will first consider that the accuracy of a model including a small number of observations should be queried. A small time sequence of 10-14 observation affects the analysis and leaves not much space for a highly confidential analysis.

The data available in Albania are highly short-termed and it is hard to find more detailed ones. The residential market is much decentralized and makes the ground for asymmetry of information. The model represents the price of real estates in the cities, for the reason that there are no available data for rural areas.

The accuracy of available data is also scarce. Some of the data are not complete observations of the market, as it is the case of residential prices. The use of average prices may not be as much appropriate due to immense difference between cities. Some data, although extracted from official sources are contradictory. Furthermore, some variables are not sustainable and vary from year to year, which enhances uncertainty and often leaves space for political or clientelist decisions. Finally, some factors affect the residential price fluctuation often on both sides of the market (demand/offer), thus creating a relatively low influence.

4. Summary and Conclusions

Housing wealth is an important part of the net assets of the private sector. Financial cycles affect housing prices and financial stability. Apartments have a high cost, compared with the average income of a family. The housing market is a decentralized market and creates an asymmetry of information. Information on prices and the housing market in our country is very difficult to ensure.

Market demand for housing is a function of changes in house prices, household income, the real rate loan, deposit interest rates, demographic developments and other factors related to the location of the apartment. The offer of housing depends on the profitability of construction sector and can be described as a function of the price of housing, construction workers' salaries and actual construction costs.

The period after the years 2000-2007 has been a period of real estate boom. Favorable economic situation, growth of income per capita (51% was the increase of per capita income in 2000 compared to 1997) and the sustainability of economic growth led to increased consumption. It is estimated that on average these prices be increased by 10-15% per year. House prices have risen from $ 280 / m² in 1996, $ 370 / m² in 1999 to reach EUR 800 / m² in 2009.

To determine the impact of factors in the housing market econometric model is used, which is a multiple regression equation, where housing prices are a function of all the factors that affect the cost such as inflation index, the number of population, the rate interest on deposits and loans, the exchange rate, the number of building permits and remittances. By applying this model, results that some of these variables are irrelevant, that is because of the correlation that these factors have between them.

On the basis of the regression equation confidence level is 92%, which means that the model explains about 92% of the variability of the house prices. If we assume that income and the number of building permits will be 0, then the price of housing will be 210 Euros or 38,000 ALL plus about 104% of the cost index. The impact of income per capita in the price of housing is about 3.95%, while the impact of building permits is very low, almost insignificant. This is because building permits have strong fluctuations and are often subject to political decisions or client.

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Employee Satisfaction Survey on the Life Insurance Industry

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Abstract: This paper has proposed to explore the satisfaction of employees that sell insurance policies. Several authors had examined customer satisfaction, service quality and its implications on customer attitude towards different fields, but our concern was to address this relatively unexplored field which is employees` satisfaction. By using an exploratory approach, we collected data from a sample of 332 employees that sell insurance policies within north-Western Romanian. By analyzing data it was possible to determine the GAP between the expectations of employees that sell insurance policies and their perceptions regarding the service quality in life insurance industry. In addition it was tested whether there is relationship between the frequency of contact with the back office employees and level of income earned from this activity. It was revealed that from the analyzed population the most of those surveyed were employees of insurance intermediaries and not employees of a single company insurance. Considering that the number of researches that analyze the front office employees` satisfaction is rather low we consider that this paper brings a significant contribution to the literature review.

Keywords: life insurance; front office employee; service quality; insurance; SERVQUAL

JEL classification: G21; M31

1. Introduction

As an extension of a prior work when was analyzed the customer expectations and perceptions regarding the quality of insurance policy, in this article we changed the angle from which we look at the problem. By analyzing only the customers` satisfaction we neglected an important part of the service process. In service industry in particular both customers and sale agents have an important task. Thus, customer satisfaction depends on the satisfaction of frontline employees.

Services, by their nature, are intangible, so contact staff has a great impact on the whole process of providing service. Product offerings of insurance companies can be easily copied by competitors, and how to provide services is no exception.

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How the customer is treated within an insurance company can be a major difference being almost impossible that gestures of staff, ambiance and atmosphere created to be reproduced by the competition.

Contact staff must meet certain qualities, such as attitudes, gestures and professional experience. So they can perform their duties most efficiently the contact staff must be satisfied to work for the way that the documents are provided, information required timely, responsiveness from those responsible, how communicating with management and the employee from the back office.

In his research Rose (2001) has viewed job satisfaction as a bi-dimensional concept consisting of intrinsic and extrinsic satisfaction dimensions.

Satisfied employees tend to be more productive, creative and committed to their employers. (J. Michael Syptak, MD, David W. Marsland, MD, and Deborah Ulmer, Singh Anita).

It examines quality assurance through the determination of employee satisfaction that sell insurance (the front office). Quality of service is measured by the employees at the front, looking expectations they have regarding their tangible elements are provided for this activity, fairness, transparency in the management and those in the back office, responsiveness, items related process safety and the empathy of the back office and management.

2. Method

To collect the data we used the validated survey instrument used in the first step of the research which was the determination of the customer satisfaction concerning service quality in life insurance industry (Bente et al., 2014). The adapted SERVQUAL instrument contained 21 statements for both expectations and perceptions questionnaire. We modified only the way of expressing of some questions in order to fit in this context. "The composition for both perceptions and expectations questionnaires is: tangibility- 4 items, reliability- 4 items, responsiveness -6 items, assurance - 4 items and empathy-3 items" (Bente et al., 2014).

As in the first research, the analyzed population represents the Northwestern Romania. In such cases, when we are targeting specific population (the front office employees who sell insurance policies) the use of this sampling method is most often justified by supposing that the convenience sample was a random sample. The sampling units were not randomly selected because not all the broker agencies or the insurance companies where we went to collect data wanted to participate in the study. The participants from the broker agencies or from the insurance

companies were randomly chosen. As a part of an extensive research "*in January 2014 the survey instrument was piloted on a group of 70 customers. Finally, a cross-sectional survey design was used*" (Bente et al., 2014). The data from this research who analyzes the satisfaction of employees that sell insurance policies were collected in about three and a half weeks in May and June 2014.

3. Findings

In order to verify the research hypotheses were calculated the following statistical tests: Paired-Sample T Test and one way ANOVA.

H1. There are significant differences on the perceptions mean of insurance employees' and the insurance employees` expectation mean.

Table 1. Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PERCEP - EXPECT	-,78026	,57368	,03148	-,84220	-,71833	-24,782	331	,000

Source: Processed by authors

The results of the testing (Table 1) reveal a mean difference between the perception mean and expectation mean pair is -0, 78. Sig. value associated with the statistic t-test is 0,000 (is less than 0.05), which allows us to conclude that differs significantly from zero.

It can be reached the same conclusion by observing the 95% confidence interval which is between - 0,842 and -0,718 with degrees of freedom 331, and since the confidence interval does not pass through the 0,00 the difference is statistically significant at two-tailed significance level of 5%.

In these circumstances the first research hypothesis H1 is confirmed, there are significant differences on the perceptions mean of insurance employees' and the insurance employees` expectation mean. In order to be more explicit the perception mean is 3,595 and the expectation mean is considerably higher 4,376. Thus, we can conclude that the significant difference can be attributed to high expectations rather than low perceptions.

H2 There are statistically significant differences on the 5 dimensions (tangibility, reliability, responsiveness, assurance and empathy) of employee satisfaction that sell insurance policies depending on frequency of contacts they have with the back office employees. Contact not only means physical contact in which direct communication occurs through speech but also communication as phone, email, etc..

H2.a There are statistically significant differences on the tangibility dimension of employee satisfaction that sell insurance policies depending on frequency of contacts they have with the back office employees.

The results of the testing (Table 2) reveal that the F value of 0,539 is not statistically significant because Sig (p=0,584) is more than 0,05 and it shows that the mean differences on the tangibility dimension of employee satisfaction that sell insurance policies depending on frequency of contacts they have with the back office employees there are no significant differences, therefore the research hypothesis H2.a. is rejected.

Table 2. ANOVA test

		Sum of Squares	df	Mean Square	F	Sig.
P_A_TANG	Between Groups	,774	2	,387	,539	,584
	Within Groups	236,440	329	,719		
	Total	237,214	331			
P_A_RELI	Between Groups	5,008	2	2,504	3,769	,024
	Within Groups	218,553	329	,664		
	Total	223,561	331			
P_A_RESP	Between Groups	3,169	2	1,584	2,450	,088
	Within Groups	212,735	329	,647		
	Total	215,904	331			
P_A_ASS	Between Groups	3,357	2	1,679	3,163	,044
	Within Groups	174,610	329	,531		
	Total	177,967	331			
P_A_EMP	Between Groups	1,509	2	,755	1,017	,363
	Within Groups	244,248	329	,742		
	Total	245,757	331			

Source: Processed by authors

H2.b There are statistically significant differences on the reliability dimension of employee satisfaction that sell insurance policies depending on frequency of contacts they have with the back office employees.

The results of the testing (Table 2) reveal that the F value of 3,769 is statistically significant because Sig (p=0,024) is less than 0,05 and it shows that the mean differences on the reliability dimension of employee satisfaction that sell insurance policies depending on frequency of contacts they have with the back office employees there are significant differences, therefore the research hypothesis H2.b. is confirmed, there are significant differences on the reliability dimension of employee satisfaction that sell insurance policies depending on frequency of contacts they have with the back office employees.

H2.c There are statistically significant differences on the responsiveness dimension of employee satisfaction that sell insurance policies depending on frequency of contacts they have with the back office employees. The results of the testing (Table 2) reveal that the F value of 2,450 is not statistically significant because Sig (p=0,088) is more than 0,05 and it shows that the mean differences on the responsiveness dimension of employee satisfaction that sell insurance policies depending on frequency of contacts they have with the back office employees there are no significant differences, therefore the research hypothesis H2.c. is rejected.

H2.d There are statistically significant differences on the assurance dimension of employee satisfaction that sell insurance policies depending on frequency of contacts they have with the back office employees.

The results of the testing (Table 2) reveal that the F value of 3,163 is statistically significant because Sig (p=0,044) is less than 0,05 and it shows that the mean differences on the assurance dimension of employee satisfaction that sell insurance policies depending on frequency of contacts they have with the back office employees there are significant differences, therefore the research hypothesis H2.d. is confirmed, there are significant differences on the assurance dimension of employee satisfaction that sell insurance policies depending on frequency of contacts they have with the back office employees.

H2.e There are statistically significant differences on the empathy dimension of employee satisfaction that sell insurance policies depending on frequency of contacts they have with the back office employees. The results of the testing (Table 2) reveal that the F value of 1,017 is not statistically significant because Sig (p=0,363) is more than 0,05 and it shows that the mean differences on the empathy dimension of employee satisfaction that sell insurance policies depending on frequency of contacts they have with the back office employees there are no significant differences, therefore the research hypothesis H2.e. is rejected.

H3. There are statistically significant differences on the 5 dimension (tangibility, reliability, responsiveness, assurance and empathy) of employee satisfaction that sell insurance policies depending on their income resulting from this activities.

H3.a There are statistically significant differences on the tangibility dimension of employee satisfaction that sell insurance policies depending on their income resulting from this activities.

The results of the testing (Table 3) reveal that the F value of 0,440 is not statistically significant because Sig (p=0,780) is more than 0,05 and it shows that the mean differences on the tangibility dimension of employee satisfaction that sell insurance policies depending on their income resulting from this activities, there are no significant differences, therefore the research hypothesis H3.a. is rejected.

H3.b There are statistically significant differences on the reliability dimension of employee satisfaction that sell insurance policies depending on their income resulting from this activities.

The results of the testing (Table 3) reveal that the F value of 1,259 is not statistically significant because Sig (p=0,286) is more than 0,05 and it shows that the mean differences on the reliability dimension of employee satisfaction that sell insurance policies depending on their income resulting from this activities, there are no significant differences, therefore the research hypothesis H3.b. is rejected.

Table 3. ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
P_A_TANG	Between Groups	1,269	4	,317	,440	,780
	Within Groups	235,945	327	,722		
	Total	237,214	331			
P_A_FIAB	Between Groups	3,391	4	,848	1,259	,286
	Within Groups	220,170	327	,673		
	Total	223,561	331			
P_A_REC	Between Groups	3,190	4	,797	1,226	,300
	Within Groups	212,714	327	,651		
	Total	215,904	331			
P_A_SIG	Between Groups	1,925	4	,481	,894	,468
	Within Groups	176,041	327	,538		
	Total	177,967	331			
P_A_EMP	Between Groups	5,302	4	1,325	1,802	,128
	Within Groups	240,456	327	,735		
	Total	245,757	331			

Source: Processed by authors

H3.c There are statistically significant differences on the responsiveness dimension of employee satisfaction that sell insurance policies depending on their income resulting from this activities.

The results of the testing (Table 3) reveal that the F value of 1,226 is not statistically significant because Sig (p=0,300) is more than 0,05 and it shows that the mean differences on the responsiveness dimension of employee satisfaction that sell insurance policies depending on their income resulting from this activities, there are no significant differences, therefore the research hypothesis H3.c. is rejected.

H3.d There are statistically significant differences on the assurance dimension of employee satisfaction that sell insurance policies depending on their income resulting from this activities.

The results of the testing (Table 3) reveal that the F value of 0,894 is not statistically significant because Sig (p=0,468) is more than 0,05 and it shows that the mean differences on the assurance dimension of employee satisfaction that sell insurance policies depending on their income resulting from this activities, there are no significant differences, therefore the research hypothesis H3.d. is rejected.

H3.e There are statistically significant differences on the empathy dimension of employee satisfaction that sell insurance policies depending on their income resulting from this activities.

The results of the testing (Table 3) reveal that the F value of 1,802 is not statistically significant because Sig (p=0,128) is more than 0,05 and it shows that the mean differences on the empathy dimension of employee satisfaction that sell insurance policies depending on their income resulting from this activities, there are no significant differences, therefore the research hypothesis H3.e. is rejected.

H4 There are statistically significant differences on the 5 dimensions (tangibility, reliability, responsiveness, assurance and empathy) of employee satisfaction that sell insurance policies depending on the experience (number of years) they have in this field.

H4.a There are statistically significant differences on the tangibility dimension of employee satisfaction that sell insurance policies depending on the experience (number of years) they have in this field.

The results of our tests (Table 4) demonstrate that the F value of 0,822 is not statistically significant because Sig (p=0,365) is more than 0,05 and it shows that the mean differences on the tangibility dimension of employee satisfaction that sell insurance policies depending on the experience (number of years) they have in this

field, there are no significant differences, therefore the research hypothesis H4.a. is rejected.

H4.b There are statistically significant differences on the reliability dimension of employee satisfaction that sell insurance policies depending on the experience (number of years) they have in this field.

The results of our tests (Table 4) demonstrate that the F value of 0,822 is not statistically significant because Sig (p=0,365) is more than 0,05 and it shows that the mean differences on the reliability dimension of employee satisfaction that sell insurance policies depending on the experience (number of years) they have in this field, there are no significant differences, therefore the research hypothesis H4.b. is rejected.

H4.c There are statistically significant differences on the responsiveness dimension of employee satisfaction that sell insurance policies depending on the experience (number of years) they have in this field.

The results of our tests (Table 4) demonstrate that the F value of 5,847 it is statistically significant because Sig (p=0,016) is less than 0,05 and it shows that the mean differences on the responsiveness dimension of employee satisfaction that sell insurance policies depending on the experience (number of years) they have in this field, there are significant differences, therefore the research hypothesis H4.c. is confirmed.

H4.d There are statistically significant differences on the assurance dimension of employee satisfaction that sell insurance policies depending on the experience (number of years) they have in this field.

The results of our tests (Table 4) demonstrate that the F value of 4,302 it is statistically significant because Sig (p=0,039) is less than 0,05 and it shows that the mean differences on the assurance dimension of employee satisfaction that sell insurance policies depending on the experience (number of years) they have in this field, there are significant differences, therefore the research hypothesis H4.d. is confirmed.

H4.e There are statistically significant differences on the empathy dimension of employee satisfaction that sell insurance policies depending on the experience (number of years) they have in this field. The results of our tests (Table 4) demonstrate that the F value of 1,164 is not statistically significant because Sig (p=0,281) is more than 0,05 and it shows that the mean differences on the empathy dimension of employee satisfaction that sell insurance policies depending on the experience (number of years) they have in this field, there are no significant differences, therefore the research hypothesis H4.e. is rejected.

Table. 4 ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
P_A_TANG	Between Groups	,589	1	,589	,822	,365
	Within Groups	236,625	330	,717		
	Total	237,214	331			
P_A_REL	Between Groups	1,253	1	1,253	1,861	,173
	Within Groups	222,307	330	,674		
	Total	223,561	331			
P_A_RES	Between Groups	3,759	1	3,759	5,847	,016
	Within Groups	212,145	330	,643		
	Total	215,904	331			
P_A_ASS	Between Groups	2,290	1	2,290	4,302	,039
	Within Groups	175,677	330	,532		
	Total	177,967	331			
P_A_EMP	Between Groups	,864	1	,864	1,164	,281
	Within Groups	244,893	330	,742		
	Total	245,757	331			

Source: Processed by authors

4. Conclusion

By using the instrument that Parasuraman et al. developed in 1988 (Parasuraman et al., 1988) a lot of researchers have found different characteristics that can influence customers` quality assessment of various services. This paper offers a relatively unexplored optic that employees' satisfaction that sell insurance policies. Some of the results revealed important aspects of the Romanian insurance market characteristics such as the most of those surveyed were employees of insurance intermediaries and not employees of a single company insurance. In this paper we sought to determine employees` satisfaction that sell insurance policies, therefore we tested four hypotheses. The first hypothesis H1 is confirmed; there are significant differences on the perceptions mean of insurance employees' and the insurance employees` expectation mean.

The second research hypothesis is partial confirmed because only on two dimensions (reliability and assurance) of satisfactions we significant differences. Therefore, there we confirmed H2.b and H2d. On the reliability and assurance dimension we can state that the more often the employees ` contact with the back office employees the lower is the employees` satisfaction that sell insurance

policies. The third research hypothesis H3 is rejected. There are not statistically significant differences on the 5 dimensions (tangibility, reliability, responsiveness, assurance and empathy) of employee satisfaction that sell insurance policies depending on their income resulting from this activities. Although income is a component that influences satisfaction with quality of life." Research suggests that usually, there is a positive relationship between income and subjective wellbeing (SWB) or happiness" (Diener, 1984, Thomas Li-Ping Tang, 2006). The fourth research hypothesis is partial confirmed because only on two dimensions (responsiveness and assurance) of satisfactions we significant differences. In conclusion that there are statistically significant differences on the responsiveness and assurance dimensions of employee satisfaction that sell insurance policies depending on the experience (number of years) they have in this field. Future studies should utilize larger sample sizes in order to increase the reliability of the results. Further research should explore whether in Romania these findings are influenced by the recent scandal from some insurance company. Therefore it could be utilize the SERVPERF instrument to determine employees` satisfaction to different moments.

5. Acknowledgments

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Mathematical and Quantative Methods

A Short History of the Theory of Numbers

Alin Cristian Ioan[1]

Abstract: The article treats some aspects of the history of the theory of algebraic numbers. The number theory is one of the oldest branches of mathematics which has its origins from second millennium BC, ancient documents dating from about 2000 BC being the Rhind papyrus and Golenischev papyrus, both of Egypt. Number theory is characterized by the simplicity of its fundamentals, its rigor and purity notions of its truths. One branch of number theory is the algebraic theory of numbers which, after Hilbert, is a wonderful monument of beauty and incomparable harmony.

Keywords: algebraic numbers; p-adic numbers

JEL Classification: C02

1. Introduction

The number theory is one of the oldest branches of mathematics which has its origins from second millennium BC, ancient documents dating from about 2000 BC being the Rhind papyrus and Golenischev papyrus, both of Egypt.

Euclid of Alexandria (ca. 300 BC) and Diofant of Alexandria (about 250 AD) are the best known theorists numbers in old age. However, this is considered as an independent and systematic science only in modern times.

One of the greatest merits in modern times has played one who considers the higher arithmetical as having "*those magical charm that makes her first favorite of mathematicians and scientists stemming from the inexhaustible riches that surpass all other parts of mathematics*" namely Gauss with his "Disquistiones Arithmeticae" where he created the modern theory of numbers in the true sense of the word. Amazement is becoming greater if we consider that he created a whole world of ideas without the help of any external stimulus, but due to the inspiration that he has proof.

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Number theory is characterized by the simplicity of its fundamentals, its rigor and purity notions of its truths. One branch of number theory is the algebraic theory of numbers which, after Hilbert, is a wonderful monument of beauty and incomparable harmony.

Deep insights that it provides the work of mathematicians who have dealt with this theory: Kummer, Kronecker, Dedekind, last two based on the ideas of the first, deepening and developing the manner of thinking of Kummer (who remained in history as the pioneer of the theory of ideals) shows that in this field of science a lot of the most beautiful treasures remain hidden.

Seductive as a nice reward, they should tempt the researcher which knows their unmatched value and practice with love the art to discover.

Some of the main objectives of number theory, mainly the Great Fermat's theorem, the laws of reciprocity or the binary quadratic forms theory had a strong instrumental character in the emergence of the theory of algebraic numbers.

Although the main problems were exposed in terms of rational integers, as time passed, it turned out that a better utility would the consideration of a richer sets of numbers, namely that of algebraic integers.

It was imperative to reconsider these objectives through the new numbers entered.

The study of the unique factorization in such rings became the basic problem of this branch of mathematics. Kummer has made it through the ideals of numbers, also Dedekind, as Kronecker help himself very much by the theory of divisors.

One of the greatest achievements of Kummer was that he proved that in the ring of cyclotomic integers any ideal is a unique product of prime ideal. His ideas were brilliant, but difficult and not clearly formulated.

The fundamental concept of ideal of numbers and prime ideal were not defined intrinsically because the Kummer's decomposition theory applies only to cyclotomic integers.

This was easily removed independently and in two different ways by Dedekind and Kronecker. Dedekind's work was the culmination of 17 years of investigation of the problems inherent in the unique factorization. He once created a new topic: the theory of algebraic numbers. He introduced, on his own way, some of the fundamental concepts of commutative algebra that is: ring ideal and prime ideal.

One of the significant innovations that followed Euclid period was the axiomatic method that has surfaced after 2000 years of stupor. Dedekind was instrumental in showing the power of mathematics and its pedagogical value. He inspired among others: David Hilbert and Emmy Noether.

156

2. Historical Highlights

There are a few main stages of development of algebraic number theory.

Between 1840 and 1846, Dirichlet published a series of notes relative to the ring $\mathbf{Z}[\theta]$ where θ is a complex number that verifies an equation of the form $x^n+a_1x^{n-1}+...+a_n=0$ where $a_i \in \mathbf{Z}$. In particular, he studied invertible elements (units) in the ring.

Starting in 1847, Kummer put the question to prove the Fermat's theorem and to extend the reciprocity theorems and was led to study in detail $\mathbf{Z}[\omega]$, $\omega^p=1$, $\omega \neq 1$. To have a usable theory, Kummer introduced his concept of the ideal numbers and ideal class that will have an immense importance.

To refine the theory of $\mathbf{Z}[\omega]$, nothing important was made up to 1871, when Dedekind in an appendix to a number theory course of Dirichlet put the foundation of the modern theory of numbers. The 4th edition of the book, published in 1893, contains definitive exposure of Dedekind's theory.

In 1882, Kronecker published its statement about the fundamentals of the theory of algebraic numbers. Unfortunately his work was written in a very strange manner and had nor the impact of Dedekind. However the memoir contains ideas and suggestions that have greatly influenced the algebraic geometry and the germ of what was to happen with the theory of field of classes. Thanks to the efforts of Kronecker, Weber and Hilbert, the main directions of what would be the general theory of body classes were made between 1882 and 1905.

Activity in the study of algebraic numbers has pitched in 1896 when Hilbert asked the German Mathematical Society to publish a masterly treatise of the era. Treaty "Zahlbericht" was intended to be a tool and to stimulate further research. Certainly did.

Before primes development, Weber started in 1896 to apply analytical techniques in the study of distributions in ideal classes. The importance of Weber's work is the fact that to prove theorems, was led to postulate the existence of fields of algebraic numbers with some very special properties. These fields called fields of classes were the main object of study for the next 50 years.

After Weber's introduction of the concept of field of classes, Hilbert realized that it was necessary to study laws of reciprocity, quadratic forms and ideal factorization into prime ideals. Hilbert not demonstrated the existence of field of classes unless in some special circumstances which formed the basis of subsequent developments.

During research on the distribution of prime ideals, an important role in the theory of field of classes, plays Frobenius automorphism.

Near the end of the 19th century, Hensel began to introduce its p-adic numbers. First, they were used at a formal level until 1913 when the situation will change. Simple topological notions were introduced in p-adic numbers fields. These ideas stay at the base of a very convenient and suggestive language which would win the number theory.

In the decade 1920-1930, the main results of the theory of field of classes, conjectured by Weber and Hilbert, was proved by Takagi, Artin and Hasse.

The complex analysis was banished from the theory of field of classes by Chevalley in 1940, which gave complete algebraic demonstrations of all the main theorem, based on the theory of p-adic numbers.

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Economic Development, Technological Change and Growth

Effectiveness of Foreign Direct Investment on Economic Growth in Pakistan: A Policy Perspective Approach

Muhammad Waqas Chughtai[1]

Abstract: Foreign Direct Investment (FDI) has significant impact on economic growth of developing countries like Pakistan for many decades. This paper has an objective to know the effects foreign direct investment on economic growth for the period from 1971-2013 by establishing empirical relation between business industries of primary, secondary and tertiary sector with FDI through Panel Cointegration and Granger Causality Framework for the specified period. The results show the significance of FDI and economic growth with proxies of GDP with the evidence of cointegration between these variables. The results also present long term causality between FDI and GDP while two-way causality if found under short run. Overall sectoral level, there is positively significance is identified between FDI and GDP. The policy Implications are also discussed in the paper showing that efficient and effective utilization of FDI.

Keywords: economic development; FDI Inflow; GDP; growth policy

JEL Classification: C33, F23, O40

1. Introduction

A role of Foreign Direct Investment (FDI) is very important for economic development for both developed and under developing countries. Since last decade foreign direct investment have grown hastily, the need of capital in developing countries for development sector has been increased in form of higher marginal productivity of capital. The investors from developed countries are expected for high return from their investment. Therefore, it is a complementary mutual gain for international trade of capital. The whole world as global economy and economic liberalization in large scale of developing countries lead to enforce competition for foreign direct investment in all developing countries. The strict restrictions and trade barriers on the economic activities of FDI in developing countries have been normalized through affordable policies and procedures, such policies have the

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basic objectives not only improve the capital inflow as well as economic growth of developing countries. Developing countries including Pakistan are suffering serious problem of capital inflow through poor saving or Saving-Investment Gap while foreign direct investment increases the progression of economic growth by fulfilling this gap through adopting new technology, employment generation, productivity enhancement and promoting competition (Korbin, 2006; Ataullah & Le, 2006). The economic gains have promoted the developing countries to ease up their FDI rules and regulations in order to catch FDI inflow in the country.

The government of Pakistan has reshaped economic policies and initiated economic reforms in the country. Such reforms began to start work in the year 1988 and since from the mentioned period, the government of Pakistan has given liberty on trade and investment through providing attractive economic benefit to the investors through tax concession, credit services, suitable tariff cutback and relieved foreign exchange controls (Khan & Yun, 1999). In the 1990s, the government of Pakistan further focused on other developing sector such as agriculture, communication, energy to enhance FDI in the country. But due to political unrest became cause of less FDI in the country as compared to other developing countries. Now Pakistan has opened doors for FDI that is expected to bring large benefits in shape of economic development through political stability and liberal trade policies to attract foreign investors. By comparing with India and China, Pakistan still has not been successful in getting benefits of FDI inflow. Moreover, insufficient inflow of FDI in the country has not been utilized efficiently to increase economic growth (Ataullah & Le, 2006). The inflow of FDI is still slow that is because of economic reforms that are far off to change and type and character of FDI. The structure and type of FDI are a structure matter as much for economic development (Chakraborty & Nunnenkamp, 2008). A wide empirical literature on measurement of the inflow of FDI focuses that economic condition or basics of the host countries related to the home countries FDI as measurement of FDI inflows.

However, it has been argued by the foreign investors to obtain location advantages by changing and opening more economies for today. FDI from developed countries always depends on economic policies by the government, transparency and well supportive infrastructure from the host country (Dunning, 2012). Few literatures available which determine the effects of government policies to attain the foreign direct investment in the country. This paper focuses to know the effectiveness of foreign direct investment on economic growth of Pakistan through selective government policies such as tax and tariff policy, fiscal benefits offered to the foreign investors and exchange rate policy. Moreover, this paper find outs the effectiveness of such policies to attract FDI in the country and create interest for

policy makers in developing countries where economic reforms are being implemented for development.

This paper is presented in orderly form in which Section 2 describes theoretical framework and empirical literature on association between foreign direct investment and economic growth; Section 3 reviews the FDI inflow in Pakistan; methodology, econometric model and data are presented in Section 4 while results interpretation is discussed in section 5 while conclusion and policy implication are describes in the last section.

2. Review of Literature and Theoretical Framework

A theoretical association between economic growth and foreign direct investment has been analyzed by modernization and dependency theories by the determinants of FDI. Modernization theories describes that an economic growth is attained through capital investment in the country (Adams, 2009). On the other hand, the growth theories discusses that a new technology in developing countries through FDI brings economic growth in shape of education, socio economic development, economically liberalized financial markets and political rest (Calvo & Sanchez, 2002). A transformation of technology through FDI with relevant managerial and organizational skills, market knowledge and access achieves rapid economic growth in the country (Balasubramanyan et al., 1996; Kumar & Pardhan, 2002). FDI plays two as contributing to capital enhancement and flourishing total factor productivity (Nath, 2009).

The dependency theories are expected that foreign investment produces negative impact on economic growth because it promotes monopolies of industrial sector (Bornschier & Chase, 1985). This means that economies are controlled by foreign investors rather than developing countries which promote disarticulation (Amin, 1974). Consequently a multiplier effect is weaker and led to poor growth in the developing countries (Adams, 2009). A market size in developing countries and difference in factor costs are related to the FDI. Because foreign investors give importance to market size and its growth and the most widely measure of market size is Gross Domestic Product per capita income (GDP/Capita) as well as growth of GDP that have usually positive coefficients (Lipsey, 2000; Moosa, 2002).

Labor cost is one of the major elements of cost function. High nominal wages deter FDI which is particularly true for those firms that are engaged in labor intensive activities that shows no significance among the variables or a negative relationship between FDI and wage (Kravis & Lipsey, 1982; Wheeler & Mody, 1990; Lucas, 1993; Wang & Swain, 1995; Barrell & Pain, 1996). On the other hand, few researchers found that higher wages do not put off FDI in all productive sectors and

161

shown position significant association between FDI and higher wages. It is because of higher wages get higher productivity through high quality labor on attract wages and advance technology attracts skilled labor while poor wages produce low productivity (Moore, 1993; Love & Lave, 2000). Recent studies have found that the policies designed by the host country directly effect on FDI like trade tariff, taxes and exchange rate. Such policies reforms in developing countries are the determinants of FDI and taxes and trade tariff are significant on FDI. (Gastanaga et al, 1998; Asiedu, 2002; Maskus, 2001; Ethier, 1996). Some other empirical studies have conducted to know the direct effect of FDI on economic growth (Borensztein et al, 1998; Somwaru & Makki, 2004; Campos & Kinoshita, 2002; Zhang, 2001; Aqeel & Nishat, 2005; Khan & Khan, 2011). FDI enhances economic progression in all sectors of economy in developing countries where there is urbanization having effective and efficient infrastructure and FDI, trade and tax policies are liberal and affordable for investment (Zhang, 2001). FDI effects more efficiently to grow the economy in those countries where labor force is educated and skilled; such countries promote exports rather than imports through their trade friendly policies (Balasubramanyam et al, 1996). When FDI comes in form of technology, it is more positively significant on economic development (Campos & Kinoshita, 2002). FDI leaves positive long term effects on economic growth in developing countries (Aqeel & Nishat, 2005; Khan & Khan, 2011). Some other studies find that FDI has insignificant impact on growth in the host country (Agosin & Mayer, 2000; Hermes & Lensink, 2003; Sylwester, 2005; Ayanwale, 2007). For causality, it is based on the trade condition of the host country because the impact of FDI on economic growth is found highly heterogenous among the countries that are most mark able for open economies (De mello & Jr, 1997; Nair & Weinhold, 2001).

3. Historical Background of Foreign Direct Investment in Pakistan

An increase in capital formation high-ceilinged savings and investment are necessary. But in the developing countries the level of saving is below from the targets due to poor per capita income (Khan, 2007). A gap between desired levels of both savings and investment can be fulfilled through trade in shape of increase in exports and transformation of other domestic resources. In this case, foreign direct investment is one of the important tools that can increase foreign capital inflows, trade liberty, affordable tariff and friendly tax policies. Therefore, the host country needs to develop liberal policies to overcome trade barriers for encouraging investment. FDI promotes domestic economic activities, so it's a dire need of host country to convince foreign investor to produce raw material for the final goods (Zaidi, 2004). The trade policies of host country and strong infrastructure both directly influence on the decision of foreign investors for

investment so the policies they adopt should attract the FDI. In early 1990s, the government of Pakistan initiated economic reforms to improve the business activities and attract foreign investment (Anwar, 2002). These economic based reforms included trade liberalization along with trade and fiscal benefits, nominal tariff and friendly foreign exchange control policies (Khan, 1997; Anwar, 2002; Aqeel & Nishat, 2004; Khan & Khan, 2011). After that, government started restrictions on capital inflows and out flows. The foreign investors were bound to keep 100% equity in industrial projects without any prior approval. In 1994, capital transaction restrictions were relaxed for investment and foreign borrowing and Pakistan Rupee convertibility was settled on current international transactions. An interbank foreign exchange market plays important role for determination of foreign exchange (Khan, 2008; Khan & Khan, 2011).

Investment Acts in Pakistan

Foreign direct investment regime is mainly consisted on three components (i) regulatory (ii) economic and (iii) social political. But privatization and deregulation the government of Pakistan has adopted liberal regulatory framework that is based on three laws to protect and facilitate the FDI in the country (i) Foreign Private Investment Act 1976: Promotion and Protection (ii) Foreign Currency Account Ordinance 2001 (Protection) and (iii) Furtherance and protection of economic reforms Act 1992. The Intellectual Property Rights Laws are brought up with international standards specially those which are related with trade related intellectual property rights of World Trade Organization (Khan & Khan, 2011).

The main regulatory frames for Foreign Direct Investment in Pakistan

➤ freedom for taking, holding and bringing foreign currency from Pakistan to anywhere;
➤ a Fully protected private enterprise is encouraged which neither nationalized nor government take any other foreign enterprise;
➤ FDI and profits both can be sent back to the home country;
➤ equally treatment of both local and foreign investor in terms of imports and exports for commodities;
➤ fully protect foreign account that cannot be frozen;
➤ FDI is open for all economic sectors with the equity of 100% are permitted for all sectors even in agriculture;
➤ unlimited size of FDI for manufacturing sector of the economy and in agriculture, social and infrastructure sectors an amount of foreign equity investment is minimum 0.3million while 0.15$ for services sector;
➤ zero government approval is required to establish an industry in term of size and location except arms and ammunitions, highly danger explosive, radioactive staff, security printing and alcohol as well;

> no double taxation of foreign investors' income;
> zero custom duty on import and plan machinery for agriculture sector while manufacturing, infrastructure, social sciences and services is not more the 5%;
> no restriction of paying royalty and technical fees for manufacturing sector. On the other hand non manufacturing sector is charged maximum rate of 5%;
> tax relief is given Plant, Machinery and Equipment and 50% is charged for both manufacturing and non-manufacturing sectors.

In the last decade, Pakistan has gained high amount of foreign direct investment as compared to the past due to trade friendly policies and open investment environment for the foreign investors in term of size and the percentage of GDP (Khan & Khan, 2011).

Trends of FDI in Pakistan

Table 1. Year Wise FDI as % of GDP & Amount of FDI in US$

| Year	FDI as Percentage of GDP	Amount of FDI (In Million US $)	Year	FDI as Percentage of GDP	Amount of FDI (In Million US $)
1971	0.01	1.00	1992	0.69	336.48
1972	0.18	17.00	1993	0.68	348.56
1973	-0.06	4.00	1994	0.81	421.02
1974	0.05	4.00	1995	1.19	722.63
1975	0.22	25.00	1996	1.46	921.98
1976	0.06	8.22	1997	1.15	716.25
1977	0.1	15.22	1998	0.81	506.00
1978	0.18	32.27	1999	0.84	532.00
1979	0.3	58.25	2000	0.42	308.00
1980	0.27	63.63	2001	0.53	383.00
1981	0.38	108.08	2002	1.14	823.00
1982	0.21	63.83	2003	0.64	534.00
1983	0.1	29.46	2004	1.14	1,118.00
1984	0.18	55.51	2005	2.01	2,201.00
1985	0.42	131.39	2006	3.35	4,273.00
1986	0.33	105.73	2007	3.9	5,590.00
1987	0.39	129.38	2008	3.32	5,438.00
1988	0.48	186.49	2009	1.44	2,338.00
1989	0.52	210.60	2010	1.14	2,018.00
1990	0.61	245.26	2011	0.62	1,308.77
1991	0.57	258.41	2012	0.36	853.68
			2013	0.27	504.70
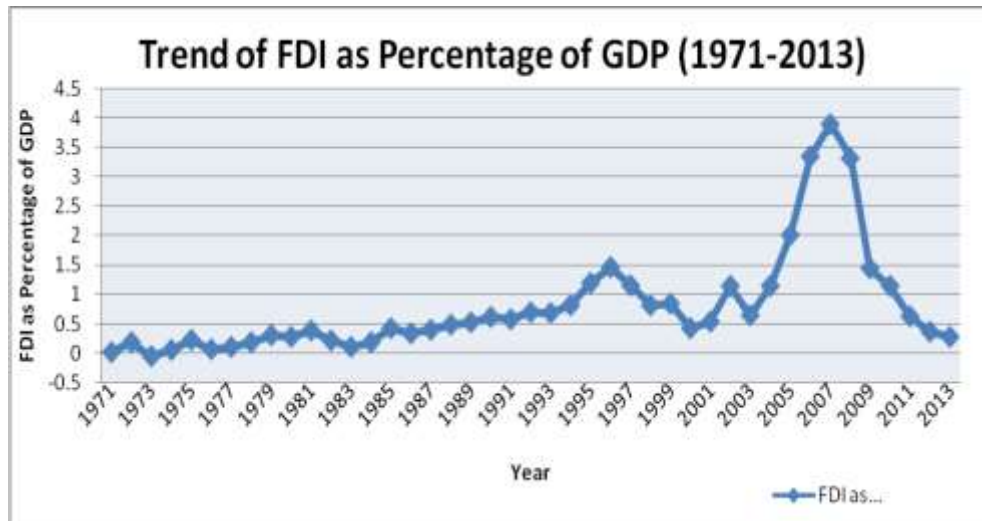
Figure 1. Trend of % of GDP (1972-2013)

The FDI inflows in Pakistan are based on its term of growth, size, source and sectorial preferences. The growth of FDI was not prominent till last 1990s due to regulatory policies framework. On the other hand, FDI enhanced economic growth of the country under the shadow of trade liberal policies. Table No 1 shows about the flow of FDI that was increased by 1 million US$ in 1971 to 853.68 million US$ and between these periods (1971-2013) the flow of FDI was fluctuated the Figure No 1 shows the trend of FDI in Pakistan for the said era. Since 1971 to 1999 the flow of FDI increased with minor decrease, but after the year 1999, FDI was quickly decreased due to US strict policies were imposed on Pakistan because of nuclear tests and political and financial instability in the East Asia. But the FDI was increased in the year 2004 with the amount of 1,118 million US$ as compared to the past years and it was double with the last year 2003. After 2004, FDI was rapidly increased and reached at its peak in the year 2007 with amount of 5,590 million US$ due to government trade liberal policies for the foreign investors. The flow of FDI started its decline from the year 2008 to 2013 because of swear financial crises, security issues and specially the War on Terror became the main causes of downfall.

Objectives of the Research

➢ to know the effectiveness of Foreign Direct Investment on Economic Growth of Pakistan;
➢ to discuss the trends of Foreign Direct Investment in the last four decades;
➢ to give suitable policy implications for the enhancement and efficient use of Foreign Direct Investment in the country.

Research Hypothesis

H_1: Foreign direct investment has significant effects on economic growth

Data Collection and Research Methodology

Data Collection

To measure the effects of FDI on economic growth of Pakistan 23 productive sectors of the economy are taken in to account for the period from 1971 to 2013. List of selected business industries of the economy is given below:

Table 2. Major Sectors of the Economy

Major Sectors	Selected Business Industries
Primary Sector	Agriculture, Forestry, Hunting & Fishing, Mining & Quarrying
Secondary Sector	Manufacturing includes SMEs, Food Beverages, Tobacco, Textile, Leather, Clothing, Chemical and Chemical Products, Pure Metal and Metal products, Electrical Machinery, Machinery Equipments, Motor and other transports equipments
Tertiary Sector	Construction, Electricity and Gas Distribution, Whole Sale and Retail Business, Transport, Storage and Communication, Finance, Ownership of Dwellings and other services included

A data on inflow of FDI and GDP for each selected sectors are collected from State Bank of Pakistan Reports, World Bank Reports, Federal Bureau of Statistics Pakistan while Consumer Price Index (CPI) is used to calculate real GDP.

Model

To measure the effects of FDI on economic growth following two variables model has been designed as work done by few researchers (Basu et al, 2003; Chakraborty & Nannenkamp, 2008; Khan & Khan, 2011):

$$GDP_{it} = \alpha_i + \delta_t + \beta_i FDI_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots Equation\,(1)$$

[Subscript letters show the logrithms of the variables]

Whereas

α_i presents the special effects by the selected business industries

δ_t presents the time effects

ε_{it} error term presenting the deviation from long run relationship

β_i slope of the FDI

A short run effects can be obtained by measuring the error correction model as following:

$$\Delta GDP = \alpha + \sum_q \gamma_i \Delta GDP_{it-q} + \sum_q \eta_i \Delta FDI_{it-q} + \lambda_i \varepsilon_{it-1} + \mu_{it} \dots \dots \dots \dots Equation\ (2)$$

[Subscript letters show the logrithms of the variables]

Whereas

q refers to the optimal lag for each selected business industry for the years

γ_i refers to the speed adjustment towards long run relationship

η_i refers to the short run effects of FDI on GDP

λ_i refers to the long run effects of FDI on GDP

ε_{it} refers to error term

Econometric Methodology

The econometric methodology is based on following process as adopted by (Khan & Khan 2011). First, panel unit root test is projected to determine the order of integration of the selected series (Pesaran et al, 2003; Khan & Khan, 2011). Secondly, conditionally all variables were integrated of order I (Eq.1) and used cointegration test approach (Kao, 1999; Pedroni, 1999; Khan & Khan, 2011). In the final step of the process, it is applied Panel Dynamic Least Squares (PDLS) technique to determine the long run coefficients (Khan & Khan, 2011).

Panel Unit Root Test

To examine the long run relationship between variables, there is need to test the stationary of the variables. A (Pesaran et al, 2003) panel unit root test is applied which is commonly known as IPS based on averaging individual Augmented Dickey Fuller Unit Root Test (*it*). The test is as following:

$$t_{IPS} = \sqrt{N}\,\frac{(\bar{t} - E[t_i \,|\rho_i = 0|])}{\sqrt{Var[t_i \,|\rho_i = 0|]}} \quad N(0,1) \ldots\ldots\ldots\ldots. Equation\,(3)$$

Whereas $\bar{t} = N^{-1}\sum_{i=1}^{N} t_i$. The Moments of $E[t_i \,|\rho_i = 0|]$ and $E[t_i \,|\rho_i = 0|]$ are calculated through Monte Carlo simulation and tabulated in IPS.

Measuring Long run relationship among variables

To measure the cointegration among the variables as shown in equation 1, there are four cointegration test are employed in the selected data analysis (McCosky & Kao, 1998; Pedroni, 1999; Kao, 1999; Kao, 1999; Khan & Khan, 2011) test cointegration through Engle Granger two steps method and entails homogeneity in the panel series. The (McCosky & kao, 1998) test the null hypothesis of cointegration that is similar to the Hadri LT test for unit root (Harris & Sollis, 2003). While (Pedroni, 1999) applies seven residual cointegration tests that are based on the no integration as null hypothesis. These tests four are based on within the dimension of panel series and rest of three on average between the dimension for long run relationship (Maeso-Fmandez et al, 2005; Khan & Khan, 2011).

$$Y_{it} = \alpha_i + \delta_{it} + \theta_t + \beta_1 X_{1it} + \ldots\ldots + \beta_k X_{kit} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots. Equation\,(4)$$

Whereas

K is the numbers of independent variables

β_k is the slope of the independent variables

θ_t is the time effect

$\alpha_i \; and \; \delta_{it}$ are the deterministic elements

To measure the long run relationship between FDI and GD, Panel Dynamic Ordinary Least Squares Methods is applied which is suitable to test the hypothesis for homogeneous cointegration vector (Kao & Chiang, 2000; Mark & Sul, 2003; Khan & Khan, 2011).

The long run Dynamic Ordinary Least Squares Method is as following

168

$$GDP_{it} = \alpha_i + \delta_{it} + \theta_t + \beta FDI_{it} + \sum_{-q}^{q} \Psi_{it} \Delta FDI_{it}$$
$$+ \varepsilon_{it} \ldots \ldots \ldots \ldots \ldots Equation\ (5)$$

Whereas

q is the numbers of lead-lag effects for difference terms while the coefficients of these terms are taken for heterogeneous short run dynamic i.e. Ψ_{it} fluctuate across i.

4. Empirical Findings

After testing, the empirical findings are presented in three steps. First, the time series analysis was done through panel unit root test (Pesaran et al., (2003). Second, the results of panel unit root test and for time effects to check the cointegration using residual based test (Pedroni, 1997) applied for the panel series. After examining cointegration, long run parameters obtained by using Panel Dynamic Ordinary Least Square Method. At Last, to check the causality between GDI and FDI under short run and long run dynamics, the error correction model was used for analysis.

Unit Root Test

The IPS Panel unit root test is applied to check the integration of the variables (Pesaran et al, 2003; Khan & Khan, 2011). The test measures the unit root null hypothesis against the alternative of heterogeneous autoregressive coefficient. The results are presented in the following table:

Table 3. Panel Unit Root Test

Series	Level	First Difference
GDP_{it}	-0.119 (0)	-6.107 (0)*
FDI_{it}	-0.447(2)	-8.784 (1)*
*Presents significance at 1% level of significance		
The critical value is -3.17890 at 1% level of significance		
The critical value is -1.99158 at 5% level of significance		

The IPS Unit Root Test describes that both variables are non stationary at their level while both are stationary at their first difference at 1% level of significance.

Cointegration Test

The cointegration test results are presented in the following Table No 4 describing that the null hypothesis of no cointegration is rejected through panel RHO and

panel PP tests. While Panel V and Panel RHO also reject the null hypothesis of no integration between measurements. On the other hand, Panel V and Panel ADF tests both accept the alternative hypothesis of having cointegration. Therefore, Panel RHO and Panel PP tests are considered more reliable for testing cointegration (Maeso-Fermandaz et al, 2006; Khan & Khan, 2011). Hence, it is found the cointegration exists between FDI and GDP.

Table 4. Results of Cointegration Test Between FDI and GDP

Test Statistics	Within Dimension	
	None	Constant
Panel V	-1.19 (P-value = 0.817)	-0.61 (P-value = 0.721)
Panel RHO	-3.41 (P-value = 0.000)*	-2.29 (P-value = 0.107)**
Panel PP	3.28 (P-value = 0.000)*	-2.31 (P-value = 0.019)**
Panel ADF	-0. 99(P-value = 0.210)	0.01 (P-value = 0.497)
Kao (ADF)		
	Between Dimension	
Panel RHO	-1.92 (P-value = 0.039)**	-1.51 (P-value = 0.082)***
Panel PP	-4.23 (P-value = 0.000)*	-2.14 (P-value = 0.031)**
Panel ADF	-0.59 (P-value = 0.322)	0.63 (P-value = 0.778)
Null Hypothesis = No Cointegration		
* presents 1% level of Significance		
** presents 5% level of Significance		
*** presents 10% level of Significance		

Now, estimating Equation No 1 the DOLS Method is applied. The results are showing in the following:

Table 5. DOLS Results of FDI and Economic Growth

Variables	Coefficients
Constant	10.07, (9.93)*
FDI_{it}	0.43, (2.59)**
R-Square	0.74
F-Statistics	52.36
Dependent Variable: GDP_{it}	
* presents 1% level of significance	
** presents 5% level of significance	

DOLS measures the FDI and Real GDP by one lag and lead of the first difference term. To calculate heterogeneity over the selected sectors, specified fixed effects model and results oriented cross-section weight are presented. In order to ensure contemporary effects of independent variables, the while-cross sections and a period random method is applied. It treats the panel regression as multivariate and

compute standard errors. The measures are vigorous to cross correction and differentiate errors variables in each cross section. The coefficient of FDI is found positive the value of 0.43 (significant) which describes its influence over GDP in the long run period. This means that 1% increase in FDI leads to 43% increase in GDP. In is also found that the effects of FDI are not greater as expected in the past.

To measure the long run and short run causality between FDI and GDI, the Dynamic Error Correction model is applied for analysis through Seemingly Unrelated Regression Method.

Table 6.Results of Dynamic Panel Causality

	Independent Variable		
Dependent Variable	ΔGDP	ΔFDI	ε_{t-1}
ΔGDP	-	32.78 (0.000)*	0.43 (0.572)
ΔFDI	28.92(0.000)*	-	4.68 (0.034)**
* presents 1% level of significance			
** presents 5% level of significance			

The null hypothesis no causality under short run from FDI to GDP is rejected and vice versa which showing a concrete bi-directional causality between FDI and economic growth. While the null hypothesis no causality under long run from FDI to GDP is also rejected. It means Pakistan seeks FDI inflows in long run.

Granger Causality Test (Sector wise under short run)

A Granger Causality Test is applied to examine the causality direction for all major sector including Primary, Secondary and Tertiary sectors. The results are as shown in the following table:

Table 7. Granger Causality Test (Sector wise)

		Independent Variable	
Sectors	**Dependent Variables**	ΔGDP	ΔFDI
Primary Sector	ΔGDP	-	52.34 (0.000)*
	ΔFDI	0.87 (0.981)	-
Secondary Sector	ΔGDP	-	0.42 (0.910)
	ΔFDI	6.43 (0.053)***	-
Tertiary Sector	ΔGDP	-	12.01 (0.047)**
	ΔFDI	5.51 (0.401)	-
* presents 1% level of significance			
** presents 5% level of level of significance			
*** presents 10% level of significance			

The result of causality between FDI and GDP is found different across sectors. Null hypothesis for primary sector no causality between FDI and GDP is rejected. It means under short run, the FDI positively affects the productivity of primary sector. For secondary sector null hypothesis is not rejected. It is because of a bulk of FDI obtained for marketing seeking resource seeking concerns. Finally, the tertiary sectors uni-directional causality is found between FDI and GDP. This implies that in the recent time a substantial inflow of FDI is acquired for services sector that played very important role for economic growth of the country.

5. Conclusion

It is concluded after empirical analysis that the effectiveness of foreign direct investment in Pakistan brings positive impact on economic growth of the country. However, the types and conditions of FDI have changed significantly. The primary sector business industries always attract FDI, the manufacturing sector is still seeking Local Market FDI and the services sector is enjoying the benefits on FDI for last few years. The growth of FDI depends on the sector requirement and its output, panel cointegration test is applied for the period from 1971 to 2013. The results conclude that both FDI and GDI are strongly co-integrated while DOLS results present the positive output for the all sectors. On the other hand they have uni-directional causality between each other in the long run while bi-directional is found between FDI and GDP in short run period. For All sectors of business industries, uni directional causality is running between FDI and GDP. On the basis of results following are few policy implications for the betterment of the effective use of FDI in Pakistan:

Policy Implications

> ➢ Exchange rate should be flexible to attract the foreign direct investment in the country.
> ➢ Labor forces should be trained with effectiveness to adopt new technology.
> ➢ Planners & Policy Makers should focus on attracting FDI to achieve short term growth.
> ➢ Effective and efficient measures should be taken to promote social overhead capital.
> ➢ Small & Medium Enterprises should be developed that would direct effect on GDP in the country.
> ➢ Policies should be designed for utilizing domestic resources included raw material and labor force that ultimately promote local industries and reduce he ratio of unemployed labor in the country.

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Discussing the Potential of Information and Communication Technologies' Innovation for Environmental Problems in Romania

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Abstract: This paper aims to identify the role and place of information and communication technology in Romania (ICT), the interest for innovation expressed in this field and the extent to which it relates to environment protection. The concern for the state of the ecosystem is growing, nevertheless it requires the active involvement in the innovation process so as to find solutions for the replacement of the old production techniques with new ones, environmentally friendly. ICTs in their spectacular evolution play a major role in this case. Frequently, they are present in all the production stages, from design to distribution of the final product. Starting from the above mentioned facts, the introduction of this paper presents the concept of green ICT and their implication in the economic and social development, as well as statistics data elaborated by international companies which are meant to increase their importance. In this section we include the objectives and prior work. We continued our research by presenting the way in which Romania gets involved in ICT innovation and environment technology, as green ICT stands at the junction between the two fields. The main conclusions and results are drawn in the end of the article. The value and implications of our research is in the area of green ICT innovation.

Keywords: green ICT; innovation; Romania; environment

JEL Classification: according O32; Q55; Q56

1. Introduction

The sustainable development is tightly linked to the technological innovation. In order to be in agreement with the environmental demands and the technological innovations, their implementation should be adapted to the specific characteristics of each country, in order to support its protection. Nevertheless, it is true that in the situation in which the possibilities to be informed and to communicate are increasing, some technological innovations are widely used without a prior analysis of the opportunities of their use or the impact on the environment. The introduction of new products, processes, business models and other organizational methods, and marketing techniques, whether through frontier or catch-up innovation, in principle contribute to the expansion of existing markets and the creation of new markets, in

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the process increasing the job content and poverty alleviation of growth. (Dutz & Sharma, 2012) For producers, the expansion of the market is very advantageous from the financial point of view and the motivation to use green products is mainly of moral and marketing content. As regards information and communication technologies (ICT), the contribution to the economic and social evolution is obvious. Even more, over the last 15 years, and mainly over the last ten years, ICT impacts on our society and economy have developed to the point of complete dependence. (Riaz et. al., 2009) A few of the drawbacks generated by ICT use are global warming, carbon emissions, great volume of e-waste, consumption of non-renewable resources and so on. On the other hand, ICT can seriously contribute to the improvement of the relationship with the environment: they can be environmentally friendly in themselves, due to their characteristics or their contribution to the decrease of the negative impact on the environment generated by other fields, considering their constant presence in the economic and social life. The growing popularity of the concepts of environmental technology (envirotech), green technology (greentech) or clean technology (cleantech) has led to the increased interest of different companies in technology improvement and less harmful production techniques for the ecosystem. Hence an important part is played by the pressure put by the communities who are more and more interested in the environment and the attitude of the international regulatory organizations. In this context, the companies in the ICT field have given a positive answer to these concerns by developing concepts such as green ICT, ecological informatics or ecoinformatics which integrate the concern for the environment in the spectacular evolution of the ICT field. The main concern so far has been the reduction of energy consumption with direct, immediate and easily highlighted financial advantages. Even more, the development of alternative, eco-friendly energy sources has facilitated the use of this component.

In Romania, the ICT field is representative for the economy as it concentrates on software development. A report published by SeeNews Company (2012) states that Romania is considered as the IT and outsourcing leader in central and SEE and one of the top 5 outsourcing destinations in the world and is first in Europe and sixth in the world in terms of number of IT certified specialists per capita, according to U.S. IT certifications provider Brainbench. As regards the perspective on the environment, there have been met so far many implementation problems. The European Union integration imposed that the European regulations should be in force, but their implementation and seeing the favourable results require a long period of time.

2. Problem Statement

The ICT innovation and long-lasting development are aspects which can be found in all European Union or other countries' plans. According to the results published by Thomson Reuters, in 2013 the most innovating fields are directly related to ICT or they are part of it. Figure 1 presents the ordering on different fields, highlighting the ones which are part of ICT or strongly related to it. We mention that two important countries, namely China and the UK are not included in the above mentioned study. According to the same source, the ranking for the most innovative countries is the following: the USA (45%), Japan (28%), France (12%), Switzerland (4%), Germany (3%), South Korea (3%), Sweden (2%), Netherlands (1%), Canada (1%), Taiwan (1%). (Thomson Reuters, 2013)
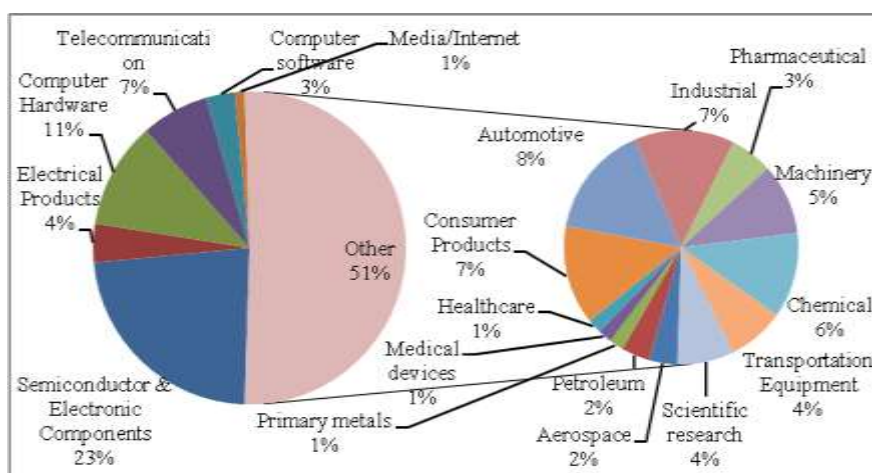
Figure 1. Industry Representation of Global Innovators

Source: Thomson Reuters, 2013

Another study, undertaken by Bloomberg Rankings, presents the hierarchy of the most innovative countries which includes the mentioned ones, but not in the same order. The decisive factors in the above mentioned study are: R&D intensity, productivity, high-tech density, researcher concentration, manufacturing capability, tertiary efficiency and patent activity. (Lu & Chan 2014) The ranking has the following structure for the first 10 positions: South Korea is considered to be the most innovative country, followed by Sweden, the USA, Japan, Germany, Denmark, Singapore, Switzerland, Finland and Taiwan. The rest of the countries mentioned in the ranking made by Thomson Reuters are positioned as follows: Canada number 11, France number 12 and Netherlands number 15. The final ranking includes 30 countries out of the 215 countries which had been analysed.

As regarding ICT, the USA, Japan and South Korea are definitely leading in all rankings; the European countries are less present. In any case, the ICT presence in Europe is greater than what it is presented by the World Economic Forum for 2014 according to which Finland once again tops the ranking of the most network-ready countries, followed by Singapore, Sweden, Netherlands, Norway, Switzerland, USA, Hong Kong, UK, Republic of Korea. (World Economic Forum & INSEAD, 2014) It is obvious that all the rankings include a certain degree of subjectivity and they cannot take into consideration all the factors which prove the involvement of the innovating countries. Depending on the considered factors, the results are different but they are dominated by the developed countries.

When it comes to green or ecological ICT innovation, the concerns and actions are rather well popularised and updated as the accomplishments in this field influence all the domains. A great number of companies with specific activities promote themselves by getting involved in environment protection actions, mainly by reducing the energy consumption or using renewable sources.

By means of green ICT or without being included in this category, ICT can support the long-lasting development related to the following opportunities (Murugesan, S., 2011, pp. 59-72):

- coordinating, reengineering and optimizing supply chain, manufacturing and other business activities to minimize their impact on the environment;
- making business operations, buildings and other energy-efficient systems;
- software tools for analysing, modelling, and simulating environmental impacts and for environmental risk management;
- platforms for eco-management, emission trading, and ethical investing;
- tools and systems for optimizing organizational workflows;
- tools for auditing and reporting energy consumption and savings and for monitoring greenhouse gas emissions;
- environmental knowledge management systems, meaning the acquisition and transfer of environmental knowledge, decisions support systems, and collaborative environments; environmental ontologies;
- environmental information systems engineering, including geographic information systems and environmental (meta-)data standards;
- urban environment planning tools systems;
- technologies and standards for interoperable environmental monitoring networks; smart in situ sensors networks;
- integration and optimization of existing environmental monitoring networks, easy plug-in new sensor cooperation, networks customization, and centralized and decentralized approaches.

Starting from the information presented above, we state the following issue for research: **how is Romania generally getting involved in innovation and particularly in green ICT?**

We state the following research hypothesis: innovation in green ICT is conditioned by the economic and social environment and in its turn, it conditions the economic and social evolution.

3. The Research Model

Our research methodology consists in describing facts by taking into consideration three variables from the research model: (1) the level of penetration of ICT, (2) innovation in ICT and (3) the use of ICT according to the environment regulations.

In Romania, the ICT field is one of the most dynamic (in comparison to others), with a significant contribution to the economic growth. Even if it is still very low ranked in EU, the statistics reflect a significant annual growth, but under the EU average. Thus, as regards the access to computers in private homes there has been registered an increase of over 24,4% since 2007 to 2013 and the daily use frequency has doubled since 2006 to the present. There has also been noted a significant growth since 2007 (Figure 2).
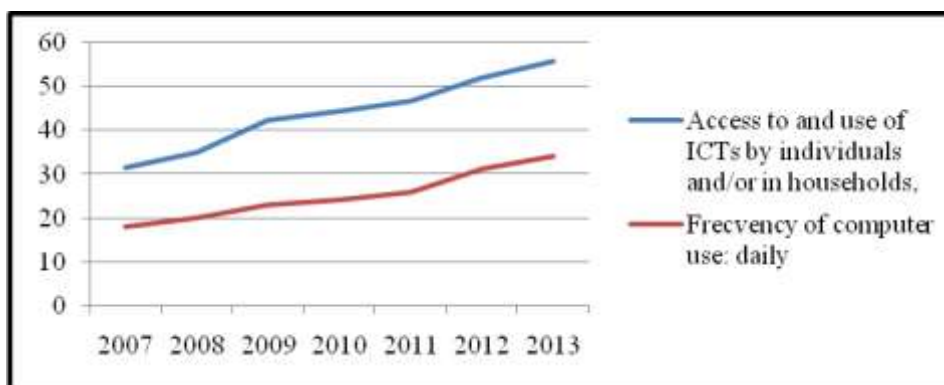
Figure 2. Access and use of computers and Internet by individuals between 2007 and 2013

Source: Eurostat, 2014

The Internet use has been noted as increasing in the number of users; still it remains way under the EU average (Figure 2). These data influence and are influenced in their turn by the living standards, the economic development, investment in research and development, the level of culture and education, so on. According to the studies made by the World Bank, there has been registered an

180

economic growth from the percentage point of view every 10% of connectivity increase and this relationship is even stronger in the countries with low and medium incomes. (Maclean, Akoh, 2010)
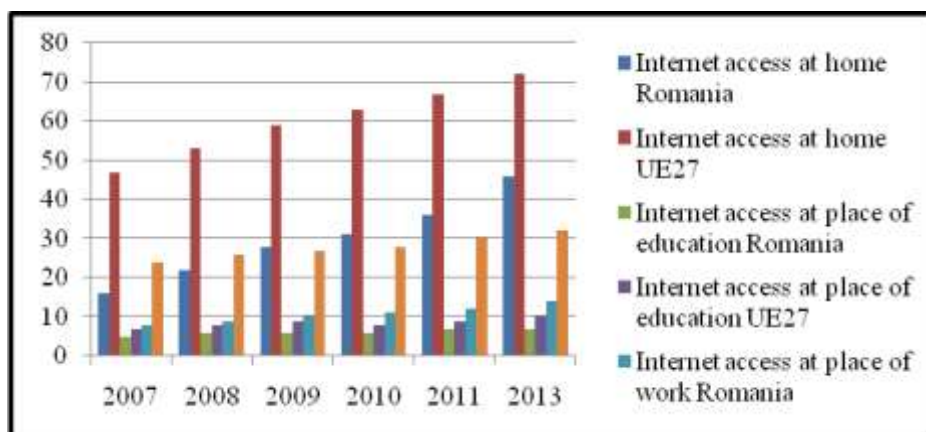

Figure 3. The use of Internet in Romania vs. EU during 2007-2013

Source: Eurostat, 2014

According to Eurostat, the percentage of people with computer skills had a favourable evolution during this period, surpassing even the EU average for the last years for basic skills and ranking under the average for the medium and advanced skills (Table 1).

Table 1. Number of people with computer skills (%)

Indicator	2007	2009	2011	2012
Individuals who have carried out 1 or 2 of the 6 computer related activities (%)				
Romania	14	17	15	14
UE27	13	14	14	16
Individuals who have carried out 3 or 4 of the 6 computer related activities (%)				
Romania	10	10	14	13
UE27	24	24	25	25
Individuals who have carried out 5 or 6 of the 6 computer related activities (%)				
Romania	5	9	10	8
UE27	23	25	27	26

Source: The Ministry of European Funds, 2013, Eurostat, 2014

The increase in the level of ICT penetration has a favourable impact on the economic and social development, but it also has a negative impact on the environment. These elements are deepened by the lack of a coherent legal frame on

181

the environment, the faulty enforcement of the existing one and the lack of severe auditing in the field. A study undertaken on 120 companies from different IT and non-IT domains revealed that only 20% out of those which have implemented environment policies take the out-of-use equipment to the recycling centres, 40% discharge them and the rest donate or sell them. The same study shows that only 34.5% of the companies support and apply environment policies. In Romania, the issue of recycling is known as critical for all categories of waste. A good example is the way in which the law on selective discharge is applied or rather not applied a law which has been in force since August 6th 2010. (MO, 2010) According to the information given by the Institute of Public Policy (IPP, 2011, pp. 16-21) only 33% of the public institutions included in the analysis provided the offices with the selective bins and 32% had special depositing rooms. Also, only 47% of the institutions created a plan to take measures for the selective discharge. When the big state institutions do not obey this law, the chance that the companies or the individual consumers obey a similar regulation is slightly probable and this makes it impossible for the EU to reach their aim to recycle at least 50% of the waste by the end of 2020. According to the same source which is based on the Ministry of Environment's statement from April 2011, only 1% of the total quantity of waste is put to value and Romania succeeds in reaching the target of 40% recycling only in the case of plastic.

The interest for environment and information technology is growing in Romania as well, even if it is much slower than in other EU countries and it is the same in case of innovation. A significant progress was recorded for the number of patents in ICT sub-fields. According to the statistics published by WIPO, there has been noted a significant growth during 2007-2012 in telecommunications, digital communication, computer technology, IT methods for management and environmental technology (Figure 4). As it can be seen, the most important growth was registered for environmental technology, which proves an increased interest in this field. Even if it does not stand for a direct component of ICT, we have presented in the chart as a consequence of the direct relationship with the topic of our paper.
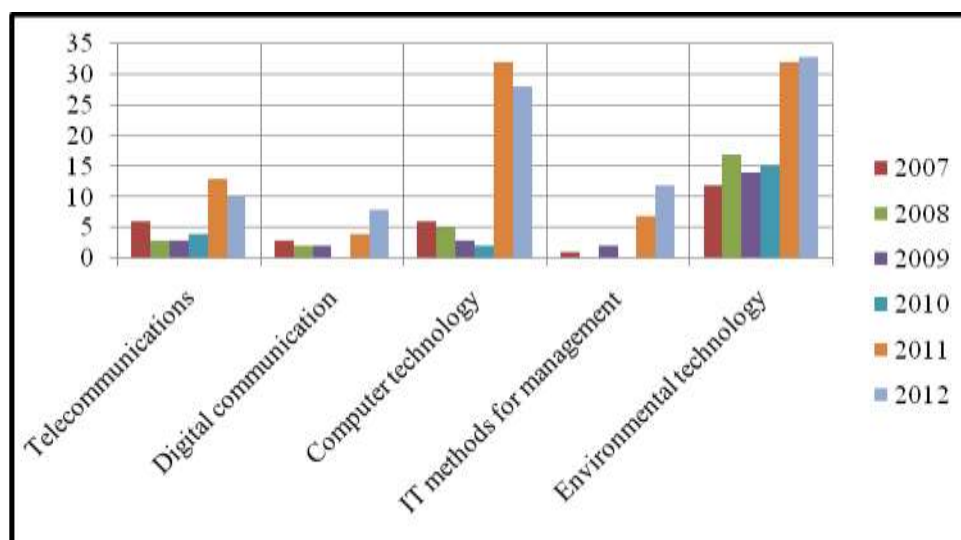
Figure 4. Evolution of the number of patents registered in Romania for ITC parts during 2007-2012

Source: WIPO, IP Statistics, 2013

According to the statistics published by the same organization, a comparison between the EU countries ranks Romania on position number 12 with a number of 133 registered patents during 2007-2012 in the field of environmental technology, at a significant difference from the top (Table 2), but on a higher position than other EU developed countries.

Table 2. Patents registered in Romania during 2007-2012 for ICT parts

No	Country	2007	2008	2009	2010	2011	2012	Total
1	Germany	944	917	1010	966	1067	1039	5943
2	France	401	432	463	442	448	381	2567
3	United Kingdom	233	244	238	222	198	112	1247
4	Poland	84	65	78	98	100	116	541
5	Spain	80	80	94	100	90	96	540
6	Sweden	57	64	40	98	107	99	465
7	Netherlands	82	65	65	90	67	87	456
8	Austria	49	55	44	45	47	39	279
9	Finland	43	34	37	17	41	32	204
10	Czech Republic	30	22	26	19	35	24	156

183

No	Country	2007	2008	2009	2010	2011	2012	Total
11	Denmark	19	38	25	16	15	22	135
12	**Romania**	**12**	**17**	**14**	**15**	**32**	**33**	**123**
13	Greece	24	17	23	14	13	17	108
14	Italy	17	30	19	15	9	6	96
15	Hungary	19	17	20	22	6	9	93
16	Ireland	13	6	7	15	13	6	60
17	Portugal	19	4	4	11	10	7	55
18	Slovakia	7	8	7	7	7	14	50
19	Croatia	6	7	9	5	8	8	43
20	Slovenia	5	9	4	5	7	12	42
21	Bulgaria	12	7	7	3	7	3	39
22	Belgium	8	2	2	1	4	2	19
23	Estonia		2	2	0	2	2	8
24	Luxembourg	1	1	1	1	1	0	5
25	Cyprus	1	0	0	1	0	0	2
26	Latvia	0	1	0	0	0	0	1

Source: WIPO, IP Statistics, 2013

The situation is approximately the same in the case of computer technology: Romania is on position 15 and Ireland, Italy and Hungary are lower. As it can be seen, the concern and actions favouring the environment and innovation are evolving. We consider that a favourable influence is held by the access to European funding in projects.

4. Results

Innovation in green ICT requires that the population, the companies and the state should get involved. It can also contribute to the economic and social growth and it has led to positive results in a big number of fields due to the fact that ICT is always present. According to a ranking made by OECD, the policies and programmes which manage the relationship with the environment can be split into three main categories: (1) those which are based on the decrease of the direct effects of ICT on the environment, (2) those which are concerned with the use of ICT applications in order to reduce the impact of society on the environment and

(3) those which combine the two categories of measures. (OECD, 2009, pp. 8-9) In Romania, there can be noticed the following facts:

- ICT has registered a continuous growth from the moment the country acceded to the European Union (our presentation has referred to this period), but it has remained on the last positions in several of its sub-fields;
- The interest in innovation, proven by the registered patents is also increasing both for the ICT sub-fields as well as for the environment technologies;
- The society is rather scarcely involved in the activities related to the environment, the companies do not have rigorous policies and the population might be called uninterested. The objectives related to the environment established by the state institutions have not been met as expected;
- Considering that the ICT field in Romania refers mainly to software, while the development of equipment is less represented, the initiatives in green ICT can be seen mainly from the perspective of the users and eventually from that of the creators of applications dedicated to the environment and its protection. We consider that the main role, with the greatest influences on the eco-system is played by the equipment producers.
- Accession of Romania to the European Union imposed the same laws regarding the environment and this will bring significant changes on medium and long term.

5. Conclusions

Romania does not have a clear legal frame and especially, regulations are not obeyed. This aspect is somehow encouraged by the lack of education as regards the importance of the environment, the low living standard and the political instability. Innovation is necessary in all fields, in the economic, private and public activities. The improvement in the ICT field, one of the most important in Romania will encourage displaying a changed attitude towards the environment. Also, the hardware and software products made by obeying the international regulations will determine all the countries to adopt the green ICT concept and practices, including Romania. All these are changes which will have effects noticeable on the long term and they require efforts from the whole society.

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Understanding the Web from an Economic Perspective: The Evolution of Business Models and the Web

Louis Rinfret[1], Scheherazade Assefsaf[2]

Abstract: The advent of the World Wide Web is arguably amongst the most important changes that have occurred since the 1990s in the business landscape. It has fueled the rise of new industries, supported the convergence and reshaping of existing ones and enabled the development of new business models. During this time the web has evolved tremendously from a relatively static page-display tool to a massive network of user-generated content, collective intelligence, applications and hypermedia. As technical standards continue to evolve, business models catch-up to the new capabilities. New ways of creating value, distributing it and profiting from it emerge more rapidly than ever. In this paper we explore how the World Wide Web and business models evolve and we identify avenues for future research in light of the web's ever-evolving nature and its influence on business models.

Keywords: business models; Innovation, World Wide Web, renewal, competitive advantage

JEL Classification: O33; L17; L20

1. Introduction

Web-enabled business models (or e-business models) continuously gained in prominence since the Web was first devised in 1989. Some of them are electronic reimplementation of traditional value chain functions such as e-commerce, while others define newer ways of adding value, for example through user-generated content. Consequently, strategy scholars and practitioners have shown a growing interest in understanding how the web may contribute to develop and sustain competitive advantages for organizations (e.g. Wirtz et al., 2010; Teece, 2010; Chesbrough, 2010).

The web's functionality has evolved significantly over the past two decades, and it continues to evolve rapidly, opening new possibilities for creating value, distributing it and profiting from those activities. In the early 1990s, when the web emerged, it enabled one-way publishing of information. However by the early

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2000s its functionality developed, enabling distributed users to become increasingly involved in value-creation, co-creation and sharing. This lead to an unprecedented network effect, and what is now known as the web 2.0 era was born. In parallel to this rapid growth in adoption, the World Wide Web Consortium (W3C) has been working on standards for what is now referred to as web 3.0 or the semantic web. In previous web eras, humans had to do much of the interpretation of information; the aim of the semantic web technology is to enable machines to do much of the processing by adding meaning to the data that is available on the web. Some posit this new wave of functionality will be just as powerful as the previous ones in terms of its socio-economic impacts.

There for emanagers have an interest in understanding these changes. In particular they should pay close attention to how they may benefit from and be affected by these new waves of web technology. Strategy scholars also have an interest in understanding how such important changes in the landscape will affect organisational strategies, and more specifically business models. While web 3.0 technologies are in an emergent stage some organisations have already jumped on the bandwagon and it seems opportune to explore each wave of the web's evolution may generate opportunities for organisations.

The remainder of our paper is structured as follows. In the following section we analyse the literature on web enabled-business models and structure it according to the different phases of the web's evolution. Following this discussion we summarise our findings and identify directions for future research in light of the web's ever-evolving nature.

2. Web-Enabled Business Models Literature

A number of studies propose generic e-business models, which fit any web era while others show specific interest in web 2.0 or web 3.0 e-business models. However, most studies overlook how business models evolve through web eras and how future evolutions of the web may impact business models. We assert that adding these dimensions to the research agenda is crucial to better understand business model life cycles and ultimately their evolutionary nature. For this reason we set out to analyse the link between business models and web eras. We identify which web era the studies relate to most closely as well as the components and criteria used to classify business model types. Table 1 summarises in chronological order some of the key studies that have looked at web-enabled business models with an emphasis on the first phase of the web (web 1.0).

Table 1. Web 1.0+ Business Model Studies

Study	Web Era	Business Model Classification Criteria	Business Model Components or Types
Timmers (1998)	1.0+	Degree of innovation, degree of value chain functional integration	e-shop (promotion), e-procurement, e-auction (e-bidding), e-mall (aggregators, sum of e-shops), 3rd party marketplace (front-end), virtual communities (communication oriented), value chain service provider (supports a function, for example payments), value chain integrator (of multiple functions), information broker (consultancy and information providers)
Tapscott et al. (2000)	1.0+	Network- and value-centered taxonomy (degree of economic control and value integration)	Agora, Aggregation, Value Chain, Alliance and Distributive Network.
Fruhling & Digman (2000)	1.0+	By business-level strategies	Added value, differentiation, cost leadership, focus, growth source
Applegate (2001)	1.0+	Industry structure and competition factor (concept, capabilities, value)	Distributors, portals, producers and three other types of infrastructure providers
Amit and Zott (2001)	1.0+	Drivers by potential sources of value	Novelty, Lock-in, complementarities and efficiency
Wirtz (2001)	1.0+	Integration of sub models	Value proposition model, value creation model, procurement model, market model, capital model and distribution model

Table 1 highlights great heterogeneity in terms of classification criteria used and resulting business model types. One may argue that this is to be expected and even desirable in a nascent field of study. Unsurprisingly Table 2, which covers the web 2.0 era contains the most examples of studies. This is indeed the web era which has sparked a broad interest in business model study and analysis.

Table 2. Web 2.0+ Business Model Studies

Study	Web Era	Business Model Classification Criteria	Business Model Components or Types
Weill and Vitale (2001)	2.0+	Based on transaction governance structure.	Content Provider, Customer-direct, Full-Service-Provider, Intermediary, Shared Infrastructure, Value Net Integrator, Virtual, Whole of Enterprise
Afuah and Tucci (2001)	2.0+	By components	Customer value, scope, pricing, revenue sources, connected activities, implementation, capabilities, sustainability
Dubosson-Torbay et al. (2002)	2.0+	Ontology: Based on 4 pillars	Product innovation, Customer relationship, Infrastructure, Financial aspects
Rappa (2004)	2.0+	Potential sources of value	Brokerage, Advertising, Targeted business, Merchant, Community Subscription, Utility.
Osterwalder (2004)	2.0+	By inter-related components	Infrastructure management, value offering, financial aspects and customer interface
Bonaccorsi et al. (2006)	2.0+	Open Source Hybrid models By components	Costs, cost structure, customers, income, product and service delivery
Brousseau and Penard (2007)	2.0+	By components and sources of value	Costs, revenue source, sustainability, goods and service delivery
Osterwalder and Pigneur (2010)	2.0+	By mode of value generation	Unbundling, Long trail, Platforms, Freemiun, Open Source, inverted freemium Open Source, Open innovation
Cheng et al. (2010)	2.0	Generic fields of activities	Collaborator, aggregator, organizer, exchanger, liberator.
Wirtz et al. (2010)	2.0	Generic fields of activities	Content, context, commerce, connection
Lee (2011)	2.0+	Type of providers and web activities	Broad online communities, Focused online communities, Social shopping, Content intermediaries, Virtual worlds, Shared web services

Table 2 spans a much greater timeframe, around a decade, and also presents a great level of heterogeneity in terms of the perspectives and criteria used to evaluate and classify business models. However during that timeframe some approaches such as

Osterwalder and Pigneur (2010) became more mainstream, especially within the industry.

As Table 3 shows, the number of studies that have considered web 3.0 technologies from a business model perspective is far more limited. This may be explained by the fact that as of the time of writing these technologies remain a lead user phenomenon. It is nonetheless important to understand their implications from an economic perspective.

Table 3. Web 3.0 Business Model Studies

Study	Web Era	Business Model Classification Criteria	Business Model Components or Types
Almeida and Lourenco (2011)	3.0	Type of providers: potential sources of value: direct and indirect	Branding, traffic generation, affiliates, advertising, premiums, e-payments, licensing/subscription, subsidized service
Vafopoulos (2011)	3.0	Linked data direct and indirect revenues	Brand, traffic generation, multi-sided, affiliates, marketplace, advertising, sponsorship, customization, subscriptions, community, public

Tables 1, 2 and 3 reveal that the way web-enabled business models are conceived and classified is far from homogenous, as is the case more broadly within the business model literature. The criteria used to define and categorize them are many and at times fuzzy. Some authors such as Lee (2011) insist on the fact that because e-business models continue to evolve, it is important to ensure the clearness of the concept.

From this perspective Osterwalder (2004) presented an ontology framework to help understand business value generation. The study suggests organizing a firm's e-business structure in to nine dimensions and to evaluate value sources through existing value-exchange between the conceived dimensions. The authors underscore the important relationship between business strategy and business process. Their suggested ontology definition tool explicitly aims to show more 'concrete' economic components instead of more abstract ways to assessed-business models. This approach helps measuring exchanged amounts of value between e-business dimensions. An ontology may also be used as a tool to help measure and simulate e-business models (Osterwalder and Pigneur, 2010).The most common dimensions found in ontologies are: the role a user plays, the type of interactions, the nature of the offering, the pricing system, the level of

customization and the economic control (Dubosson-Torbay et al., 2002, Osterwalder and Pigneur, 2010).

Alternatively, e-business models have also been conceived according to the level of internal information within a firm. The logic being that the more a firm relies on information to be productive, the more IT adoption (including web adoption) through effective strategies could drive value(Wijaya et al., 2011).

Another school of thought classifies e-business models based on the existence of a connection between the level of information-integration over the web and the degree of innovation within the organization. This correlation is used as a guideline in e-business model generation. This concept is underneath Timmers' (1998)e-business model framework containing 11 components. It is essentially a mapping done over two dimensions: the degree of innovation within the firm (traditional versus modern ways of doing business) and the range of web-integrated functions within the firm (i.e. the number of web-enabled functions)(Timmers, 1998).

Currie(2004) argued that the relationship between e-business models and corporate strategies has an influence on the nature and the way they are conceived and classified. In a study she led, she analysed some existing models and their components as they relate to strategy, specifically on two dimensions: the associated abstraction level and the underlying competitive focus. Results show that atomic business models are more specific and tend to be used by firms with a lower competitive focus. On the other hand value chain models like Porter's(1985,2001)seemed to be more generic, outward looking and placing a greater emphasis on the competitive concerns.

Using a different perspective Zott & al (2011) analysed existing e-business models and the way they were conceived. They inferred the existence of two levels of components or themes in e-business models: those of first order and those of second order. The first order theme is supposed to help build the main e-business model goal with regards to a second order criteria or theme. For example, in Osterwalder's (2004) first order theme, we find value proposition and customers segments. In the second order theme, importance is given to structural network aspects and externalities (Zott et al., 2011).

Finally such as Weiss & al (2005) suggest the User Requirements Notation (URN) approach as a way to classify e-business models. URN is a generic method usually used by engineers. In business modeling dimension, URN focuses on early stages of development with goals and scenarios and it takes into consideration user requirements, systems functional and non-functional requirements. URN is a goal-oriented requirement language which connects requirements to business objectives. Authors argue that URN may help incorporate the strategic options available to a business to facilitate the definition of an e-business model, and that the same

approach may be used to remodel and classify existing e-business models (Weiss and Amyot, 2005). The URN method also helps visualize business model evolution throughout various stages of development. If we compare this to ontologies put forth by other authors such as Osterwalder or Currie, we see a shared concern: the graphical design aspect and business processes details. However, while ontologies show value exchange flows, URN conceived-models also provide a way to adapt to evolving business requirements. Perhaps research on new blends containing ontologies and URN goal-oriented concepts may generate enriched tools for e-business modelling.

3. Conclusion

A growing interest over the past decade has fuelled progress in developing a better understanding of the web and its socio-economic impacts. However as our brief review highlights it, more work is required in order to generate the insights needed for theory-building and managerial guidance as it relates to web-enabled business models.

A first observation from our review of the literature regards the state of the tools at the disposal of researchers to analyse e-business models. Ontologies and models are currently emerging as bases to analyse how businesses organise to create, distribute and capture value using web technologies. In a pre-paradigmatic era there is a need for empirical and theoretical work seeking to validate and consolidate the key dimensions of business models as they relate to the web.

Our second observation relates to the evolution of the web and its impact on business models. A number of studies have begun analysing and categorizing web-enabled business models, in particular relative to the web 2.0 era. While more work is required on this front, the web continues to evolve and rapidly the web 3.0 wave is emerging. In this new era, with the possibility to delegate more tasks to computers, tasks that previously required human intervention, new evolutions of business models are anticipated, notably in terms of value creation mechanisms, which have already been widely impacted by the web 2.0 technologies. It is therefore important that more research be targeted towards these newer technologies and their impacts on business models.

In summary we believe that research on business models and the web should be carried tightly in line with the evolution of the web, and based on a theoretically-grounded view of the key dimensions of e-business models. Our research will therefore address this important area of contemporary strategy scholarship.

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Microeconomics

A Rational Production Function

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Abstract: The article deals with a rational production function of two factors with constant scale return. It was determined the compatibility conditions with the axioms of production function resulting inequality of a single variable.

1. Introduction

In what follows we shall presume there is a certain number of resources, supposedly indivisible needed for the proper functioning of the production process.

We define on $\mathbf{R}^2$ – the **production space** for two resources: K – capital and L - labor as $SP=\{(K,L)\mid K,L\geq 0\}$ where x∈SP, x=(K,L) is an **ordered set of resources** and we restrict the production area to a subset $D_p\subset SP$ called **domain of production**.

It is called **production function** an application $Q:D_p\rightarrow\mathbf{R}_+$, $(K,L)\rightarrow Q(K,L)\in\mathbf{R}_+$ $\forall(K,L)\in D_p$.

For an efficient and complex mathematical analysis of a production function, we impose a number of axioms both its definition and its scope.

1. The domain of production is convex;

2. Q(0,0)=0 (if it is defined on (0,0));

3. The production function is of class C^2 on D_p that is it admits partial derivatives of order 2 and they are continuous;

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4. The production function is monotonically increasing in each variable;

5. The production function is quasiconcave that is: $Q(\lambda x+(1-\lambda)y)\geq\min(Q(x),Q(y))$ $\forall\lambda\in[0,1]$ $\forall x,y\in R_p$.

From a geometric point of view, a quasiconcave function having the property of being above the lowest value recorded at the end of a certain segment. The property is equivalent to the convexity of the set $Q^{-1}[a,\infty)$ $\forall a\in\mathbf{R}$, where $Q^{-1}[a,\infty)=\{x\in R_p|Q(x)\geq a\}$.

2. The Main Indicators of Production Functions

Consider now a production function: $Q:D_p\rightarrow\mathbf{R}_+$, $(K,L)\rightarrow Q(K,L)\in\mathbf{R}_+$ $\forall(K,L)\in D_p$.

We call **marginal productivity** relative to an input x_i: $\eta_{x_i}=\dfrac{\partial Q}{\partial x_i}$ and represents the trend of variation of production to the variation of x_i.

We call **average productivity** relative to an input x_i: $w_{x_i}=\dfrac{Q}{x_i}$ the value of production at a consumption of a unit of factor x_i.

We call **partial marginal substitution rate** of factors i and j the opposite change in the amount of factor j as a substitute for the amount of change in the factor i in the case of a constant level of production and we have: $RMS(i,j)=\dfrac{\eta_{x_i}}{\eta_{x_j}}$.

We call **elasticity of output** with respect to an input x_i: $\varepsilon_{x_i}=\dfrac{\dfrac{\partial Q}{\partial x_i}}{\dfrac{Q}{x_i}}=\dfrac{\eta_{x_i}}{w_{x_i}}$ and represents the relative variation of production to the relative variation of the factor x_i.

Considering now a production function $Q:D_p \rightarrow \mathbf{R}_+$ with constant return to scale that is $Q(K,L) = \dfrac{1}{\lambda} Q(\lambda K, \lambda L)$, let note $\chi = \dfrac{K}{L}$. It is called the **elasticity of the marginal rate of technical substitution** $\sigma = \dfrac{\dfrac{\partial RMS(K,L)}{\partial \chi}}{\dfrac{RMS(K,L)}{\chi}}$.

3. A Rational Production Function

Consider now a production function $Q:D_p \subset \mathbf{R}^2 \rightarrow \mathbf{R}_+$, $(K,L) \rightarrow Q(K,L) \in \mathbf{R}_+$ $\forall (K,L) \in D_p$ with constant return to scale:

$$Q(K,L) = \frac{P(K,L)}{R(K,L)} \quad \forall K,L > 0$$

where P and R are homogenous polynomials in K and L, deg P=n, deg R=n-1, n≥2.

Because the function is elementary follows that it is of class C^∞ on the definition domain.

Let note also: $\chi = \dfrac{K}{L}$.

In what follows we put the question of determining the conditions so that the axioms 4 and 5 to be verified.

We now have:

$$\frac{\partial Q}{\partial K} = \frac{\dfrac{\partial P}{\partial K} R - P \dfrac{\partial R}{\partial K}}{R^2} , \; \frac{\partial Q}{\partial L} = \frac{\dfrac{\partial P}{\partial L} R - P \dfrac{\partial R}{\partial L}}{R^2}$$

Because of homogeneity, we have:

$$\begin{cases} K \dfrac{\partial P}{\partial K} + L \dfrac{\partial P}{\partial L} = nP \\ K \dfrac{\partial R}{\partial K} + L \dfrac{\partial R}{\partial L} = (n-1)R \end{cases}$$

that is:

$$\begin{cases} \dfrac{\partial P}{\partial L} = \dfrac{nP - K\dfrac{\partial P}{\partial K}}{L} \\[4mm] \dfrac{\partial R}{\partial L} = \dfrac{(n-1)R - K\dfrac{\partial R}{\partial K}}{L} \end{cases}$$

Note now: $\alpha = \dfrac{\partial P}{\partial K}$, $\beta = \dfrac{\partial R}{\partial K}$, $\gamma = \dfrac{\partial^2 P}{\partial K^2}$, $\delta = \dfrac{\partial^2 R}{\partial K^2}$. We have:

$$\begin{cases} \dfrac{\partial P}{\partial L} = \dfrac{nP - \alpha K}{L} \\[3mm] \dfrac{\partial R}{\partial L} = \dfrac{(n-1)R - \beta K}{L} \end{cases}$$

$$\dfrac{\partial^2 P}{\partial L \partial K} = \dfrac{(n-1)\alpha - \gamma K}{L}$$

$$\dfrac{\partial^2 P}{\partial L^2} = \dfrac{n(n-1)P - 2(n-1)\alpha K + \gamma K^2}{L^2}$$

$$\dfrac{\partial^2 R}{\partial L \partial K} = \dfrac{(n-2)\beta - \delta K}{L}$$

$$\dfrac{\partial^2 R}{\partial L^2} = \dfrac{(n-1)(n-2)R - 2(n-2)\beta K + \delta K^2}{L^2}$$

After many computations, we obtain:

$$\dfrac{\partial Q}{\partial K} = \dfrac{\alpha R - \beta P}{R^2}$$

$$\dfrac{\partial Q}{\partial L} = \dfrac{K}{L}\left(\dfrac{Q}{K} - \dfrac{\partial Q}{\partial K}\right) = \dfrac{PR - \alpha KR + \beta PK}{LR^2}$$

$$\dfrac{\partial^2 Q}{\partial K^2} = \dfrac{(\gamma R - \delta P)R - 2\beta(\alpha R - P\beta)}{R^3}$$

$$\dfrac{\partial^2 Q}{\partial K \partial L} = K\dfrac{-\gamma R^2 + 2\alpha \beta R + \delta PR - 2\beta^2 P}{LR^3}$$

$$\frac{\partial^2 Q}{\partial L^2} = K^2 \frac{\gamma R^2 - 2\alpha\beta R - \delta PR + 2\beta^2 P}{L^2 R^3}$$

The conditions that: $\frac{\partial Q}{\partial K} > 0$, $\frac{\partial Q}{\partial L} > 0$ become:

$$\begin{cases} \dfrac{\alpha R - \beta P}{R^2} > 0 \\ \dfrac{PR - \alpha KR + \beta PK}{LR^2} > 0 \end{cases}$$

Considering now the bordered Hessian matrix:

$$H^B(Q) = \begin{pmatrix} 0 & \dfrac{\partial Q}{\partial K} & \dfrac{\partial Q}{\partial L} \\ \dfrac{\partial Q}{\partial K} & \dfrac{\partial^2 Q}{\partial K^2} & \dfrac{\partial^2 Q}{\partial K \partial L} \\ \dfrac{\partial Q}{\partial L} & \dfrac{\partial^2 Q}{\partial K \partial L} & \dfrac{\partial^2 Q}{\partial L^2} \end{pmatrix}$$

and the minors:

$$\Delta_1^B = \begin{vmatrix} 0 & \dfrac{\partial Q}{\partial K} \\ \dfrac{\partial Q}{\partial K} & \dfrac{\partial^2 Q}{\partial K^2} \end{vmatrix} = -\left(\frac{\partial Q}{\partial K}\right)^2 = -\frac{(\alpha R - \beta P)^2}{R^4}$$

$$\Delta_2^B = \begin{vmatrix} 0 & \dfrac{\partial Q}{\partial K} & \dfrac{\partial Q}{\partial L} \\ \dfrac{\partial Q}{\partial K} & \dfrac{\partial^2 Q}{\partial K^2} & \dfrac{\partial^2 Q}{\partial K \partial L} \\ \dfrac{\partial Q}{\partial L} & \dfrac{\partial^2 Q}{\partial K \partial L} & \dfrac{\partial^2 Q}{\partial L^2} \end{vmatrix} = 2 \frac{\partial Q}{\partial K} \frac{\partial Q}{\partial L} \frac{\partial^2 Q}{\partial K \partial L} - \left(\frac{\partial Q}{\partial L}\right)^2 \frac{\partial^2 Q}{\partial K^2} - \left(\frac{\partial Q}{\partial K}\right)^2 \frac{\partial^2 Q}{\partial L^2} =$$

$$\frac{P^2}{L^2 R^5}\left(-\gamma R^2 + 2\alpha\beta R + \delta PR - 2\beta^2 P\right)$$

it is known that if $\Delta_1^B < 0$, $\Delta_2^B > 0$ the function is quasiconcave. Conversely, if the function is quasiconcave then: $\Delta_1^B \leq 0$, $\Delta_2^B \geq 0$. Therefore, a sufficient condition for the validity of axiom 5 is:

$$\begin{cases} -\dfrac{(\alpha R - \beta P)^2}{R^4} < 0 \\[3mm] \dfrac{P^2}{L^2 R^5}\left(-\gamma R^2 + 2\alpha\beta R + \delta PR - 2\beta^2 P\right) > 0 \end{cases}$$

From these two sets of conditions we obtain finally:

$$\begin{cases} \dfrac{\alpha R - \beta P}{R^2} > 0 \\[3mm] \dfrac{PR - \alpha KR + \beta PK}{LR^2} > 0 \\[3mm] \dfrac{P^2}{L^2 R^5}\left(-\gamma R^2 + 2\alpha\beta R + \delta PR - 2\beta^2 P\right) > 0 \end{cases}$$

or, more simple (taking inot account that Q,K,L>0):

$$\begin{cases} \alpha R - \beta P > 0 \\[2mm] PR - K(\alpha R - \beta P) > 0 \\[2mm] \dfrac{2\beta(\alpha R - \beta P) + R(\delta P - \gamma R)}{R} > 0 \end{cases}$$

Theorem 1

A function Q:$D_p \subset \mathbf{R}^2 \to \mathbf{R}_+$, (K,L)$\to$Q(K,L)$\in\mathbf{R}_+$ $\forall$(K,L)$\in D_p$ with constant return to scale:

$$Q(K,L) = \frac{P(K,L)}{R(K,L)} \quad \forall K,L > 0$$

is a production function if:

$$\begin{cases} \alpha R - \beta P > 0 \\[2mm] PR - K(\alpha R - \beta P) > 0 \\[2mm] \dfrac{2\beta(\alpha R - \beta P) + R(\delta P - \gamma R)}{R} > 0 \end{cases}$$

where: $\alpha = \dfrac{\partial P}{\partial K}$, $\beta = \dfrac{\partial R}{\partial K}$, $\gamma = \dfrac{\partial^2 P}{\partial K^2}$, $\delta = \dfrac{\partial^2 R}{\partial K^2}$.

Because P and R are homogenous, we have:

$$P(K,L) = L^n P\left(\frac{K}{L}, 1\right) = L^n S(\chi), \ R(K,L) = L^{n-1} R\left(\frac{K}{L}, 1\right) = L^{n-1} T(\chi)$$

with the obviously notations: $S(\chi) = P(\chi, 1)$, $T(\chi) = R(\chi, 1)$.

If $P(K,L) = \sum_{i=0}^{n} a_i K^i L^{n-i}$ we have:

$$\alpha = \frac{\partial P}{\partial K} = \sum_{i=1}^{n} i a_i K^{i-1} L^{n-i} = L^{n-1} \sum_{i=1}^{n} i a_i \chi^{i-1} = L^{n-1} S'(\chi)$$

$$\gamma = \frac{\partial^2 P}{\partial K^2} = \sum_{i=2}^{n} i(i-1) a_i K^{i-2} L^{n-i} = L^{n-2} \sum_{i=1}^{n} i(i-1) a_i \chi^{i-1} = L^{n-2} S''(\chi)$$

Analogously: $\beta = \frac{\partial R}{\partial K} = L^{n-2} T'(\chi)$, $\delta = \frac{\partial^2 R}{\partial K^2} = L^{n-3} T''(\chi)$

We obtain therefore that the conditions of the above theorem become:

$$\begin{cases} S'(\chi)T(\chi) - T'(\chi)S(\chi) > 0 \\ S(\chi)T(\chi) - \chi(S'(\chi)T(\chi) - T'(\chi)S(\chi)) > 0 \\ \dfrac{2T'(\chi)(S'(\chi)T(\chi) - T'(\chi)S(\chi)) + T(\chi)(T''(\chi)S(\chi) - S''(\chi)T(\chi))}{T(\chi)} > 0 \end{cases}$$

If we note for simplify: $V(\chi) = \dfrac{S(\chi)}{T(\chi)}$ we finally have:

$$\begin{cases} V'(\chi) > 0 \\ V(\chi) - \chi V'(\chi) > 0 \\ V''(\chi) < 0 \end{cases}$$

Because $Q(K,L) = \dfrac{P(K,L)}{R(K,L)} = \dfrac{L^n S(\chi)}{L^{n-1} T(\chi)} = L V(\chi)$ we easily see that:

$$V(\chi) = \frac{Q(K,L)}{L} = w_L, \ \frac{V(\chi)}{\chi} = \frac{Q(K,L)}{K} = w_K \text{ therefore:}$$

Theorem 2

A function $Q:D_p \subset \mathbf{R}^2 \to \mathbf{R}_+$, $(K,L) \to Q(K,L) \in \mathbf{R}_+$ $\forall (K,L) \in D_p$ with constant return to scale:

$$Q(K,L) = \frac{P(K,L)}{R(K,L)} \quad \forall K,L > 0$$

is a production function if:

$$\begin{cases} w_L{}'(\chi) > 0 \\ w_K{}'(\chi) < 0 \\ w_L{}''(\chi) < 0 \end{cases}$$

where $\chi = \dfrac{K}{L}$ and w_L, w_K are the average productivity relative to L and K respectively.

Because $P(K,L) = L^n S(\chi)$, $R(K,L) = L^{n-1} T(\chi)$ we find that:

$$\alpha = \frac{\partial P}{\partial K} = L^{n-1} S'(\chi), \ \beta = \frac{\partial R}{\partial K} = L^{n-2} T'(\chi), \ \gamma = \frac{\partial^2 P}{\partial K^2} = L^{n-2} S''(\chi), \ \delta = \frac{\partial^2 R}{\partial K^2} = L^{n-3} T''(\chi)$$

$$\frac{\partial Q}{\partial K} = \frac{\alpha R - \beta P}{R^2} = \frac{S'(\chi)T(\chi) - T'(\chi)S(\chi)}{T(\chi)^2} = V'(\chi)$$

$$\frac{\partial Q}{\partial L} = \frac{PR - \alpha KR + \beta PK}{LR^2} = \frac{S(\chi)T(\chi) - \chi S'(\chi)T(\chi) + \chi T'(\chi)S(\chi)}{T(\chi)^2} = V(\chi) - \chi V'(\chi)$$

The main indicators for this function are:

- the marginal productivity relative to L: $\eta_L = \dfrac{\partial Q}{\partial L} = V(\chi) - \chi V'(\chi)$

- the marginal productivity relative to K: $\eta_K = \dfrac{\partial Q}{\partial K} = V'(\chi)$

- the average productivity relative to L: $w_L = \dfrac{Q}{L} = V(\chi)$

- the average productivity relative to K: $w_K = \dfrac{Q}{K} = \dfrac{V(\chi)}{\chi}$

- the partial marginal substitution rate of factors K and L:

$$RMS(K,L) = \frac{\eta_K}{\eta_L} = \frac{V'(\chi)}{V(\chi) - \chi V'(\chi)}$$

- the elasticity of output with respect to K: $\varepsilon_K = \frac{\eta_K}{w_K} = \frac{\chi V'(\chi)}{V(\chi)}$

- the elasticity of output with respect to L: $\varepsilon_L = \frac{\eta_L}{w_L} = \frac{V(\chi) - \chi V'(\chi)}{V(\chi)}$

- the elasticity of the marginal rate of technical substitution

$$\sigma = \frac{\dfrac{\partial RMS(K,L)}{\partial \chi}}{\dfrac{RMS(K,L)}{\chi}} = \frac{\chi V(\chi) V''(\chi)}{V'(\chi)(V(\chi) - \chi V'(\chi))}$$

4. Example

Let now, the function of production: $Q:D_p \subset \mathbf{R}^2 \to \mathbf{R}_+$, $(K,L) \to Q(K,L) \in \mathbf{R}_+$ $\forall (K,L) \in D_p$ with constant return to scale:

$$Q(K,L) = \frac{4K^2 - 2KL - L^2}{K - L} \quad \forall K,L, \ K < \frac{L}{2}$$

We have: $V(\chi) = \dfrac{4\chi^2 - 2\chi - 1}{\chi - 1}$, $w_K(\chi) = \dfrac{V(\chi)}{\chi} = \dfrac{4\chi^2 - 2\chi - 1}{\chi^2 - \chi}$,

$w_L(\chi) = V(\chi) = \dfrac{4\chi^2 - 2\chi - 1}{\chi - 1}$, $w_K'(\chi) = \dfrac{-2\chi^2 + 2\chi - 1}{\chi^2(\chi - 1)^2}$, $w_L'(\chi) = \dfrac{4\chi^2 - 8\chi + 3}{(\chi - 1)^2}$,

$w_L''(\chi) = \dfrac{2}{(\chi - 1)^3}$.

The conditions from the theorem 2 become:

$$\begin{cases} \dfrac{4\chi^2 - 8\chi + 3}{(\chi - 1)^2} > 0 \\[3mm] \dfrac{-2\chi^2 + 2\chi - 1}{\chi^2(\chi - 1)^2} < 0 \\[3mm] \dfrac{2}{(\chi - 1)^3} < 0 \end{cases}$$

which are equivalent with:

$$\begin{cases} \chi \in \left(-\infty, \dfrac{1}{2}\right) \cup \left(\dfrac{3}{2}, \infty\right) \\ \chi \in \mathbf{R} \\ \chi < 1 \end{cases}$$

that is, with $\chi > 0$: $\chi \in \left(0, \dfrac{1}{2}\right)$ or $K < \dfrac{L}{2}$.

The graph of the production function is:
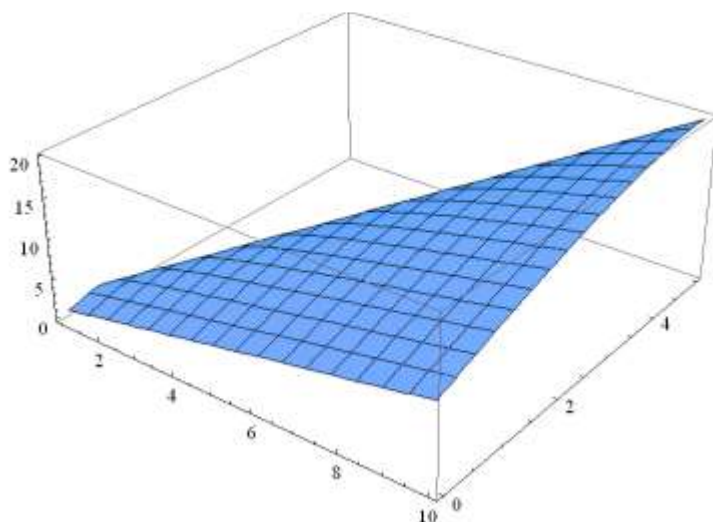
Figure 1

5. Conclusions

Rational production functions may occur in the process of determining specific method of least squares (leading to relatively simple systems solved) based on concrete data. Conditions compatibility axioms production function were simplified by using the factor $\chi = \dfrac{K}{L}$, generating inequalities of a single variable.

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The Evolution of SMEs during 2008-2013
and the Analysis of their Impact on Economic Crisis

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Abstract: Between 2011-2013, the economic conditions which were encountered by the EU companies were marked by an intensification of the sovereign debt crisis in the Eurozone, under the specter of double recession, to a greater extent in some countries in southern Europe and slowing the growth, since 2011, even in the most advanced economies. The SMEs are a key factor, an important catalyst for economic growth, innovation, employment and social integration. The main advantages of SMEs in the economy are flexibility and adaptability, which enables them to overcome more easily the periods of economic recession. The methodology used in this work consists of qualitative and quantitative methods, the analysis being based mostly on the quantitative component of collection, processing and interpretation of statistical data. In 2010 the number of deregistration from the Registry of Commerce has reached its historic peak, 186,144, the increase being compared to the previous year, being approximately 325%. In 2009 there was a significant decrease in the number of commercial registration compared to 2008, 32,407 companies, i.e. 22.47%. This shows that the recession was felt in the Romanian economy since 2009.

Keywords: enterprise; economic decline; analysis

JEL Classification: G01

1. Introduction

Between 2011-2013, the economic conditions which were encountered by the EU companies were marked by an intensification of the sovereign debt crisis in the eurozone, under the specter of double recession, to a greater extent in some countries in southern Europe and slowing the growth, since 2011, even in the most advanced economies. Even in the downturn, SMEs have remained important being considered the backbone of the European economy. Two-thirds of the jobs created in the EU are by the SMEs. The SMEs have an important share in Europe's economy, accounting for about 99% of all enterprises and generating 58% of the

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value added. The SMEs have a fundamental role in the process of reorienting the European economy by more sustainable production and consumption models.

SMEs are a key factor, an important catalyst for the economic growth, innovation, employment and social integration. The main advantages of SMEs in the economy are flexibility and adaptability which enables them to overcome more easily periods of economic recession. It is a balanced economic development as the SMEs are the most important driving force of the economy. It is well known in the current economic context that SMEs are a major source of economic growth through the intake of a huge number of jobs in the economy. The high dynamics of SMEs in the economy creates economic growth. Thus it is generated a significant dynamic of employment, an important part for generating competitiveness.

The SMEs are an important source of innovation, as they produce goods in market niches, which offer a high degree of flexibility than larger firms. In the case of creating small companies, innovation is instituted by rethinking the products and services that would complement and satisfy the market needs, due to the introduction of new ways of organizational approach in order to increase productivity.

The SMEs, despite their size, establish external links through a network of companies, which are active on the international market as well. SMEs in their development process become more competitive in their country or origin, this allowing them to grow the value chain through export.

The number of SMEs as a whole and their distribution by size and activity sector exert an important influence on the economic performance indicators. The SMEs in Romania have a significant contribution to employment, but their contribution to economic growth has no significant value yet. Small and medium size enterprises have become a very important source of jobs, but they keep major vulnerabilities, currently being away from the mature markets within Europe. Romania is one of the European countries which have been significantly affected by the recession, as the economic expansion prior to the crisis was mainly based on foreign direct investment, which declined sharply when the global crisis was felt by foreign investors. The crisis had a strong impact on SMEs in Romania, resulting in stopping the previously known positive evolutions, for a long period between 2000 and 2008.

2. Research Methodology

The used research methodology can be found in an analysis on the evolution of SMEs and the felt impact in the economic downturn. The instruments used in this work consist of qualitative and quantitative methods, the analysis being based

mostly on the quantitative component of collection, processing and interpretation of statistical data from the National Institute of Statistics and National Registry of Commerce Office. It was also used the comparative analysis calculating the growth rate of fixed basis and in chain, in order to be understood more explicitly the statistical developments.

3. Results

The main advantages of SMEs are:

• relationships within these companies are less formalized and there is a closer connection between individual effort and the company's objectives;

• the importance given to the innovation processes regarding both technology and management, that is an important feature for SMEs;

• SMEs contributes to the supply of goods and services and thus to GDP, to the export growth and national investments;

• Small and medium enterprises are important sources for creating jobs, through this aspect it improves also the social stability of the area. In the recent years, in many countries, the SMEs are the only companies generating jobs.

• SMEs show a high flexibility and adaptability in times of crisis, due to their ability to adapt to market changes favored by their smaller size, the rapid decision-making process specific to the entrepreneur and total involvement in daily activities;

• SMEs provide the potential for future development of large companies due to growth and development processes in which they participate;

• there are one of the main sources of income of the state budget, in terms of taxes, VAT, etc.

• are able to provide products and services with lower costs compared to large firms; it is due mainly to the constant conventional lower costs, higher volume and intensity of work in terms of the entrepreneur always present in the company, and also because of the intense motivation of staff;

• is the main component of a proper market economy, characterized by flexibility, innovation and dynamism;

• a significant role that the SMEs has is the fact that they improve and enhance the competitive nature of markets, they represent sources of competition, thus determine a better satisfaction of the consumer's needs;

The first analyzed aspect is that of the dynamics of business registrations, suspensions, dissolution and deregistration of companies in order to have a holistic look over the evolution of the Registry of Commerce records between 2008-2013.
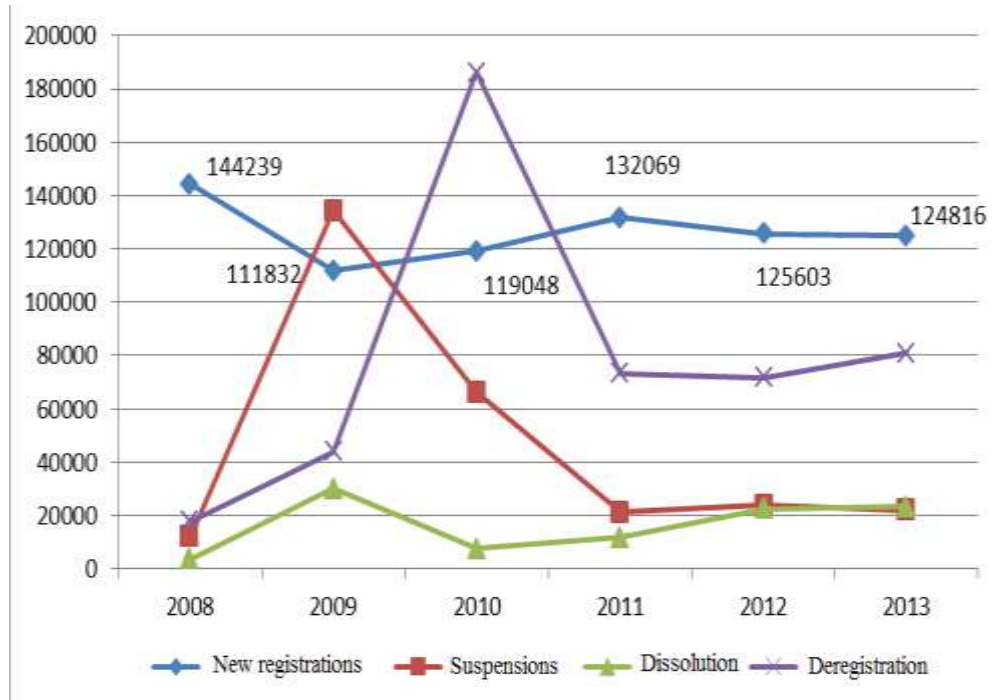

Figure 1. The Dynamics of records in the Registry of Commerce (2008-2013)

Source: ONRC, Own Calculations

In 2010 the number of deregistration from the Registry of Commerce has reached its historic peak, 186,144, an increase, compared to the previous year, to approximately 325%. The disappearance from the economic landscape of such a big number was the result in the suspension of activity of 134,441 companies, which were made in 2009, following the implementation of the Emergency Ordinance no 34/2009 on budgetary rectification and regulation certain financial measures, which came into force on 1st May 2009. At the same time still in 2009, it can be noticed the high number of dissolutions registration and deregistration of companies compared to 2008, i.e. the number of dissolutions increased by 700% and the number of deregistration of 147.30%. Another consequence of the very high number of deregistration in 2010 was due to the non-exercise of the option

211

right in one of the forms provided by Ordinance no 44, 2008 which is sanctioned with the removal from the registry of commerce. The economy image can be approached positively as they were removed from the business environment the inactive and even unviable economically companies, and the maintaining of competitiveness of those companies with competitiveness potential in difficult contexts of a market in recession. It can be seen by the graph that the number of deregistration was maintained at a high rate comparable to 2008. In this case the number of deregistration in 2011 was of 73,244 companies with 55,558 more, i.e. 3 times more, compared to 2008. In 2013 it is an increase in the number of deregistration comparable with 2012, a year where it dropped to 1498 deregistration, with 9040 of economic agents, i.e. 12% higher. Therefore SME sector was severely affected in size and entrepreneurial potential. The lasting negative effects are transposed into the substantial reduction in the population of enterprises in Romania, and implicitly related job losses.

This aspect is best highlighted by taking into consideration the number of registrations of new economic agents. In 2009 there was a significant decrease in the number of registrations at the registry of Commerce compared to 2008, of 32,407 companies, in percentage with 22.47%. This shows that the recession was felt in the Romanian economy since 2009. In the following years there was an increasing trend, respectively 125,603 registrations in 2012 and 124,816 in 2013, but without touching the threshold of 2008 to 144,239 registrations. It is however notable the decrease in the number of registrations in 2012 compared to 2011, a decrease of 5% approximately. Comparing 2013 to 2008 the decrease in the number of registrations in percentage was of 13.47%, an improvement of almost 9%, compared to 2009.

Making an assessment of the annual variations of the number of registrations and the cumulative number of suspensions, dissolution and deregistration, it is found that in 2008, this ratio was 8 times higher than in 2009 and 2010, while the last three years hover around the value 1. More precisely, while in 2008 at every four newly registered enterprises, only one ceases its activities, in 2009 and 2010 at a newly registered company, another two were closing, and in the last three years at each new registered company, a company ceased its activities.

Viewed from the demographic perspective, between 2008-2013 the number of active SMEs had an evolution expressed in Figure 2. In this chart it was achieved a

comparative analysis on the annual evolution of the number of existing active SMEs, expressed in percent (compared to the previous year).
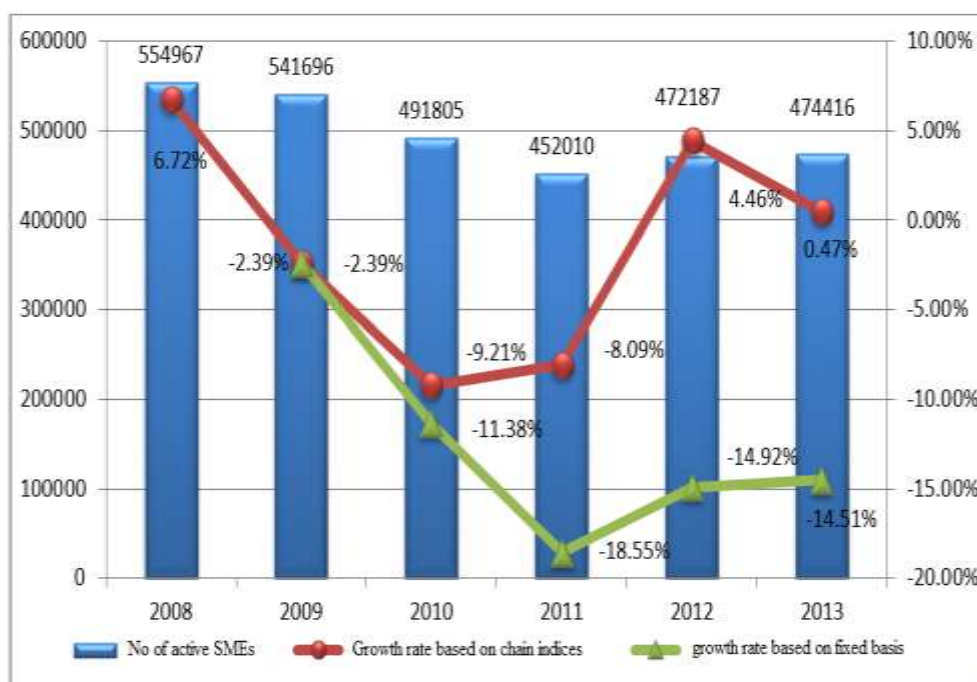

Figure 2. Comparative analysis of the evolution of active SMEs in Romania during 2008-2013

Source: INS

The evolution of the number of active SMEs has been positive in 2008 with a total of 554,967 SMEs, with an increase of 6.72% compared to 2007, analyzing the growth rate based on chain indices. The year 2008 represents the peak of the number of SMEs, being considered the year with the largest economic growth, and later that year due to the economic crisis, their numbers began to decline. The decrease in 2009 was of 13271 for SMEs, respectively 2.39% less. The steepest decrease from the point of view of growth rate analysis based on chain indices is that of 2010 compared to 2009, the number of SMEs has decreased by 9.21%. Analyzing the evolution of active SMEs in 2011 compared with the previous year, it is found a decrease of 8.09%, i.e. 39,795 small and medium enterprises. The positive trend is seen in 2012 when their number increases by 20,177, i.e. 4.46%

213

compared with the year 2011 to 2013 where there was a positive trend, but with a very small difference compared to 2012, 0.47%, 2229 new active SMEs.

In terms of growth rate with fixed basis it is compared every year except 2008; 2008 was taken as a fixed basis for a clear image on the impact that the recession had on SMEs. 2010 and 2011 are the most affected in this regard. In 2010 there was a decrease of 11.38%, respectively 63,162 SMEs. In the year 2011 it finds the loss of 102 957 largest companies, meaning more precisely -18.55% of all SMEs in 2008. In the view of 2012 and 2013 compared to 2008 it can be seen as both express declines -14.92% and - 14.51% of the number of small and medium enterprises.

In conclusion, 2008 was the year with the highest economic growth and 2009 is characterized by the economic crisis leaving signs on the SME sector, having a turning point in 2011, returning to the number and evolution in 2005, when there were registered 450,202 active SMEs. As compared to the number of active SMEs in 2013, the level is close to the level of 2006 in which 480,323 were active.
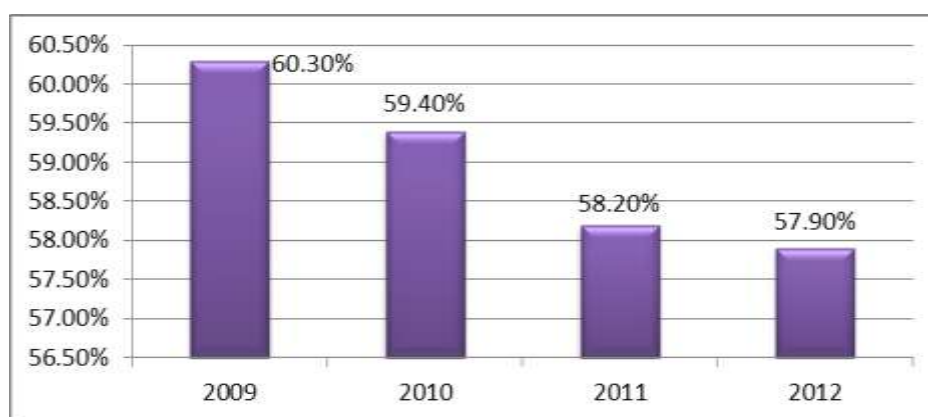

Figure 3. Percentage of turnover achieved by active small and medium enterprises in the turnover of enterprises from industry, construction, trade, and other services, on activities of national economy

Source: INS

The SMEs contribute more than 58% to the total turnover of the non-financial economy. According to the balance of businesses operating in non-financial sectors of the economy at 31 December 2011, the turnover on SMEs was 589,256 billion lei.

The small and medium active enterprises in Romania have a share of 59.40% CA in 2010, with 0.90% lower, compared with 2009. In 2011 it has increased the decrease to 58.20%, being of course correlated with the actual number of active SMEs, which had dropped significantly, a decrease of 2.10% compared to 2009 and 1.2% comparing to the year 2010. In 2012 the CA share of active SMEs has decreased to 0.30% in 2011, comparing to 2009, but it decreased by 2.4%. Regarding the distribution of turnover between the three size classes of SMEs, it can be observed close shares, the micro enterprises still having a lower intake compared to larger enterprises. This feature of SMEs in Romania is preserved, noting that in 2011, small enterprises have increased their share in the total turnover.

Micro enterprises contributed 30.8% to the total turnover of SMEs, small businesses with 34.2% and 34.9% the medium ones. Real variations in turnover in the size classes in the two consecutive years 2010 and 2011 are presented as follows: the rate + 2% average achieved on the SME overall, largest increase was recorded in the class of small enterprises (8 6%), followed by the medium class (+ 0.9%). The Microenterprises have decreased their turnover in real terms by -3.3% in 2011 compared to 2010.
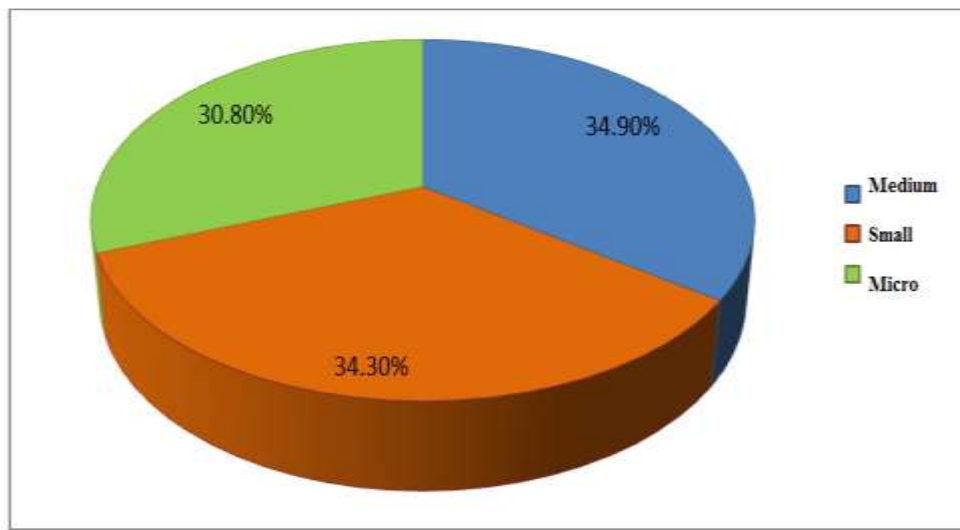

Figure 4. Turnover in SMEs by size, 2011

Source: INS, ONRC

The share of staff employed in SMEs in Romania is of 65.8%, which means that two thirds of the employees in Romania operate in SMEs. The role of SME sector as the main provider and creator of jobs is one of the critical elements on which it depends   overcoming   the   crisis   and   resume   its growth.
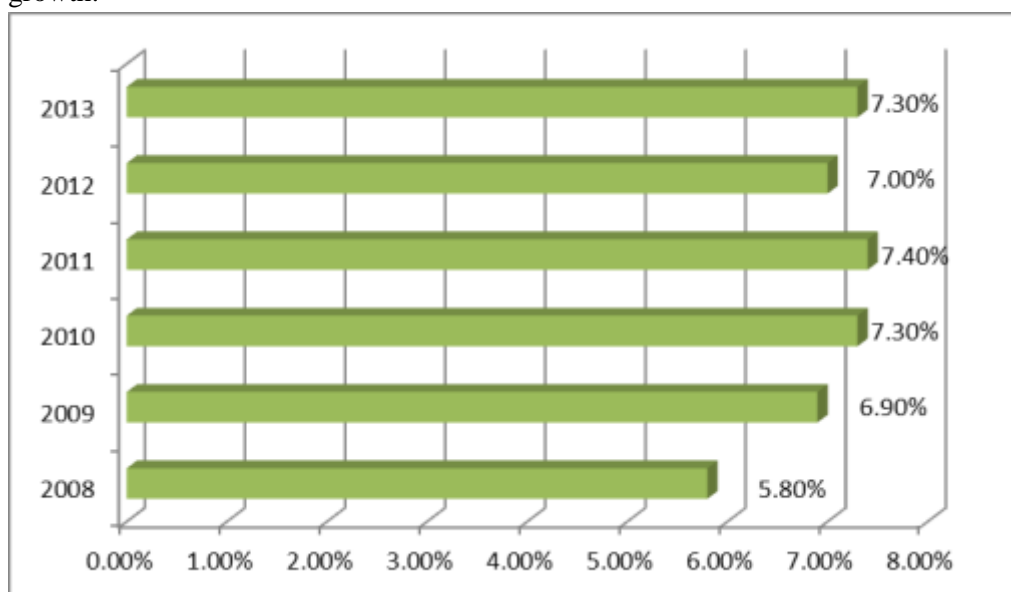

Figure 5. Unemployment rate between 2008 -2013

Source: INS, Unemployment rate

Due to the importance that the SMEs have in the labor market, it is also analyzed the evolution of unemployment. Specifically it stood at 5.80% in 2008 and in 2009 it rose by 1.10% to 6.9%, marking the entrance in recession, which was felt on the population and decreasing the number of jobs. Further in 2010 there was an increase of 0.40 percentage points in the unemployment rate, being followed by the highest rate in 2011 to 7.40%, as it clearly demonstrates the link between the existence of SMEs and unemployment. At the end of 2013 the unemployment rate was recorded with 7.30%.
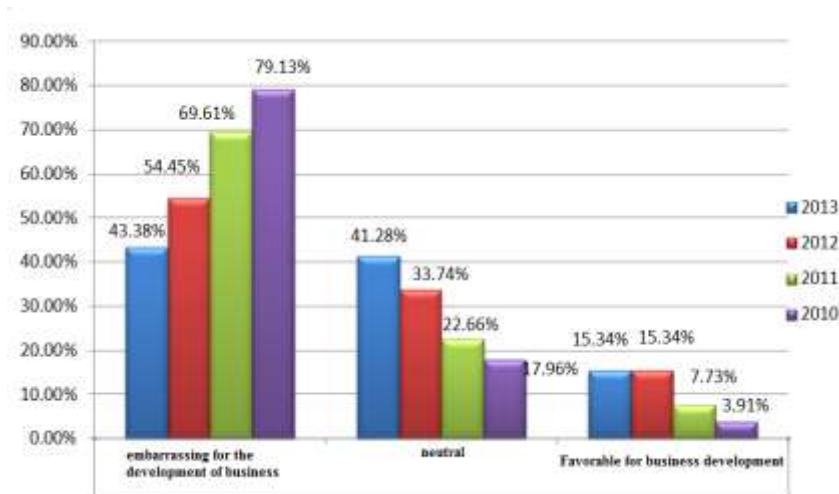
Figure 6. The assessment of the evolution of business assembly of Romania 2010-2013

Source: The White Charter of SMEs 2013

Based on the survey conducted yearly by CNIPMR for the year (2010 - 2013), it was achieved Figure 6. The sample includes SMEs in all size classes, developing regions, age groups, forms of legal organization and activity branches. Those surveyed in 2010 responded at a rate of 79.13% that the overall evolution of the business environment in Romania is embarrassing for business development. One can easily observe that in these analyzed four years, the highest share is found in this answer. As for neutrality, it corresponds 17.9% of the respondents, favorable for business only 3.91% answered here. It is interesting to note that in this last year, the entrepreneurs are changing the perception on the evolution of business environment in Romania. For example, compared to 2010, in 2013 it has been 43.38% in response for embarrassing for the development of business, down with 35.75%. Those of 35.75% have changed to a neutral evolutionary response to 41.28% and to a lesser extent, the answer for favorable for business 15.34%.

4. Conclusions

The period 2011 - 2013, the economic conditions which were encountered by the EU were marked by an intensification of the sovereign debt crisis in the Eurozone, under the specter of double recession, to a greater extent in some countries in southern Europe and slowing the growth, starting in 2011, even in the most advanced economies. Even in the downturn, SMEs have remained important, being considered the backbone of the European economy. Two-thirds of the jobs created

in the EU are SMEs. The SMEs have an important share in Europe's economy, accounting for about 99% of all enterprises and generating 58% of the value added. The SMEs have a fundamental role in the process of reorienting the European economy by more sustainable production and consumption models. The SMEs, despite their size, establish external links through a network of companies, which are active on the international market. SMEs in their development process become more competitive in their country or origin, allowing them to grow the value chain through export. The share of staff employed in SMEs in Romania is of 65.8%, which means that two thirds of the employees in Romania operate in SMEs. The role of SME sector as the main provider and creator of jobs is one of the critical elements on which it depends overcoming the crisis.

5. Acknowledgments

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