Czech University of Life Sciences Prague

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Diploma Thesis

Customer Loyalty in the mobile services market in Albania

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DIPLOMA THESIS ASSIGNMENT

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Informatics

Thesis title

Customer Loyalty in the mobile services market in Albania

Objectives of thesis

The goal:
This thesis aims to develop an in-depth analysis of the current situation in the market of mobile communication in Albania and derive statistical predictions of its future development.

Objectives:
- Developing a model with the most significant factors affecting customer satisfaction in terms of mobile services
- Exploring the determinants of switching intention among unsatisfied customers;
- Discovering behavioural patterns in the social, demographic, economic background of the individuals
- Using predictive modelling techniques on a customer's future loyalty level

Methodology

Different statistical data analysis will be used to measure the relationships between qualitative and quantitative data, describing the behaviour and preferences of customers:

Contingency tables will verify hypotheses about relationship of variables.

Cluster analysis is needed to explore common characteristic of subgroups of customers.

Regression modelling will be useful to estimate levels of customer loyalty based on different significant factors.

The proposed extent of the thesis

60 – 80 pages

Keywords

Mobile communication services, Albania, customer loyalty, switching intention, statistical analysis, contingency tables, regression

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Declaration

I declare that I have worked on my diploma thesis titled "**Customer Loyalty in mobile services market in Albania**" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the diploma thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on   ……………   _____

Xheni Haka

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Loajalita zákazníků na trhu mobilních sítí
v Albánii

Souhrn

The issue that this study is the importance of customer satisfaction and loyalty for mobile communication companies and how to increase competitiveness in the market. It is aimed to develop a model and different statistical methods of exploring quantiative and qualitative variables on the data collected by customers. A better understaing of customers needs will help develop better business strategies.

Klíčová slova: mobile communication services, customer loyalty, Albania, switching intention, statistical analysis, contingency tables, regression

Customer Loyalty in mobile services market in Albania

Summary

Communication is one of the essential needs in human society. The trends on the communication markets have been shifting towards smaller, smarter and faster devices to which we can always be connected and keep in touch with the world. Therefore, mobile operator companies are facing new challenges and at the same time excellent opportunities in their business area.

Many national markets have already reached the saturation points in terms of number of SIM cards active within the overall population, which makes mobile service providers operate in a highly competitive environment. It is of crucial importance that companies have the latest data, and to make use of advanced statistical methods and most appropriate models in order to have a better understanding of the operating market. The motivation behind this thesis is to make use of statistics as an applicable science in order to explore new ways for analysing a wide range of customer data. The ultimate goal will be to bring a deeper understanding and new insights into the national market of Albania - a developing country in southeastern Europe, regarding the fast evolving mobile communication services.

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1. Introduction

Communication is one of the essential needs in human society. Throughout the centuries, people have been persistently looking for means to improve the quality of their communication and interaction with each other as much as the efforts they have put to advancements in production, transport, industries and others areas of economy. Thus, driven by years of continuous research, technological discoveries, and increasing necessities for sharing knowledge to enhance productivity, we are now living in the area where communication knows no boundaries of time, space or shape.

Certainly, there is an enormously wide range of devices designed solely for purpose of making it easier for us to share information – personal computers, tablets, notebooks, smartphones. By the end of 2016, there were nearly 7 billion phones, tablets and PCs in use in the world, while the sales prediction for 2017 is expected to be at a steady number of 2.3 million units (Gartner, 2017). However, the trends on the communication markets have been shifting towards smaller, smarter and faster devices to which we can always be connected and keep in touch with the world.

Consequently, this situation has brought into the spotlight again mobile communication operators (also known as carriers), whose services only few decades ago were focusing in providing voice calls and texting. In the new digital area, the mobile phone, as we used to know it, is rapidly being substituted by the smartphone, which integrates computer processing features (applications running on an operating system, Web browsing etc.) in a handheld, wireless device (TechTarget, 2007). Therefore, mobile operator companies are facing new challenges and at the same time excellent opportunities in their business area.

Many national markets have already reached the saturation points in terms of number of SIM (Subscriber Identity Module) cards active within the overall population, which makes mobile service providers operate in a highly competitive environment. Moreover, governments have been implementing policies to ensure a fair competition in the telecommunication sector. Mobile Number Portability is one of these important regulatory measures. It means that customers can easily switch to another mobile operator while keeping the same contact number. Such policy was put into practice as early as 1999 in United Kingdom and Netherlands, leading the way for

all other countries in the European Union, incentivized by the frameworks of European Commision (Sanchez & Asimakopoulos, 2012).

In such conditions, aiming to reach a more advantageous position or even maintaining the same status in the market becomes a highly ambitious goal for the management of even well-known multinational companies. It requires knowing as much information possible about the existing customers, their needs and complaints to be able to make the right decisions on matters of whether to focus investment on quality of services or their variability; on improving only the 3G mobile internet infrastructure or the overall network coverage and so on. The efforts to acquire more subscribers and preserving the current customer base is eventually translated in investment on collecting customer data, processing and analysing capacities, including the costs of designing and performing a marketing campaign. Both business practices and researchers have emphasized the fact that the sucessful acquisition of a new subscriber costs around ten times more than retaining an existing customer (Kim, Jun, & Lee, 2014).

From this viewpoint, it is of crucial importance that companies have the latest data, and to make use of advanced statistical methods and most appropriate models in order to have a better understanding of the operating market. It will be exactly the accuracy in discovering the differences in service needs and socio-demographic characteristics of subgroups, one of the factors that will differentiate mobile network operators among them, thus gaining a competitive edge in meeting their customers' needs as fast as possible.

Developing countries always represent an interesting study case since the population structure, their mindset, purchasing power and the economic organization changes significantly from the market feature of the developed countries where most multinational mobile network operators were founded. Nonetheless, such countries are putting real effort and investment to keep up with the global technological trends.

The motivation behind this thesis is to make use of statistics as an applicable science in order to explore new ways for analysing a wide range of customer data. The ultimate goal will be to bring a deeper understanding and new insights into the national market of Albania - a developing country in southeastern Europe, regarding the fast evolving mobile communication services.

2. Objectives and methodology

2.1. Objectives

This thesis aims to develop an in-depth analysis of the current situation in the market of mobile communication in Albania and derive statistical predictions of its future development.

Alongside the final goal, there will be accomplished the following partial goals:

- Developing and testing a model that explores the most significant factors affecting customer satisfaction in terms of mobile services;
- Exploring the determinants of switching intention among unsatisfied customers;
- Discovering patterns about the social, demographic, economic background of the individuals and correlations to a specific group of mobile service demands;
- Using predictive modeling techniques to predict a customer's loyalty level.

2.2. Methodology

To achieve the objectives, the development of thesis involves a literature review of terms related to mobile communication and takes into consideration important findings on research about customer satisfaction in mobile services sector in other countries. Further, a description of facts and conditions of the Albanian telecommunication market and its main actors will be provided. This theoretical background will be used to ask the right questions for our purpose to investigate the validity of certain hypotheses. The practical part will include the design of an online survey of approximately 450 residents in Albania who own and use a mobile card. The collected data will contain information aiming to discover about the individual characteristics, the purposes of their usage of mobile services, and an evaluation of the level of satisfaction with their current operator. The software used for data processing is SAS Entreprise Guide and SPSS. Then, the techniques implemented during data mining will be fully described and the results will be presented and analyzed. Different statistical data analysis will be used to measure the relationships between qualitative and quantitative data, describing the behaviour and preferences of customers. Contingency tables will validate hypotheses about correlation of variables. Regression modelling will be useful to estimate levels of customer loyalty based on different significant factors.

3. Literature Review

3.1. Mobile communication market

The consumption level of today's society on mobile communication services has been growing since the advent of mobile voice calls in the beginning of 1990s and thus opening enormous profitable business opportunities for mobile network operators.

The picture that the worldwide market offers now has changed. One key measure is the penetration rate which is defined as the number of mobile cellular subscribers per 100 inhabitants (Hurkens & Jeon, 2009). According to GSMA's 2016 World Report, the global penetration rate in 2015 reached at 63%, with Europe's average leading a peak of 85%, generating revenues over $1 trillion. By the end of 2020, it is expected that the subscriber base will increase to the point where 70% of the world's population will have a mobile subscription (GSMA, 2016).

Despite the rapid population growth and the technological developments in the mobile industry, the market presents some serious challenges to the main actors. Markets in many developed countries have nearly reached stagnation levels and in developing countries, due to low income, large number of the population still cannot afford the luxury of a mobile phone service. Competition is high due to uniform services and investing in infrastructure improvement is a risky decision due to a continuous market presure of lower prices. However, operators' creativity in the accomodation of customer demands and needs has led to a variety of service combinations offers.

3.1.1. Types of services

Voice calls.
The very first functionality that led to the invention of mobile phone was the luxury to be able to make and receive traditional landline phone calls on a cordless device, which could be easily carried anywhere. Mobile voice calls today still contribute as the majority of the mobile network traffic while operators continuously invest in the maximizing the area coverage through their network transmission towers. Voice calls through mobile phones have enabled communication and reachability for residents in remote villages around the world where landline infrastructure is nonexistent. On the downside, mobile calls quality has improved little since the attention has

shifted in the innovative features of the smartphones. The voice in mobile calls is not clear, facing delays, call interruptions and environment noises. Few powerful operators have devised plans to implement *HD voice* for their customers to upgrade the call quality. This transmission standard sets higher audio frequencies for mobile signals up to 7000 Hz compared to the 3400 Hz that is the current standard, thus would significantly improve the reliability of mobile voice calls (Hecht, 2014).

Short Message Service (SMS).

The first short text message sent a "Merry Christmas" in December 1992 within colleagues at Vodafone. Nokia was the only handset that could support user sending of SMS with a limti of 160 characters, however it wasn't until 1999 when mobile subscribers were able to text to subscribers outside their network (BBC News World Edition, 2002). The SMS industry is a huge commercial source for the telecommunication companies, however has recently been challenged by online applications. Short message service has proved to be essentially important in case of emergencies, as in the earthquake in Nepal in 2015, the operators enabled free texting so they could get in touch with worrying relatives or contact the local rescue teams so they could locate survivors and come to help as soon as possible (GSMA, 2016). SMS are still widely used as a marketing tool to reach customers directly in their personal mobiles or as a two-step authentication in bank applications. Live television shows allow the public to vote for their favorite candidate by sending an SMS in a certain format or encouraging to help raise money for a charity cause through the cost of the SMS.

Multimedia Messaging Service (MMS).

Similar to SMS, in 2002 the MMS was launched: the service that allows mobile phone users to send text longer than 160 characters, pictures, audio and video from their device to another relying on the mobile operators transfer protocols (MobileBurn, 2013). It is more complicated than SMS, because it requires the receipent's handset to be compatible and display the content properly. In cases of incompatibility, this service works similarly to emails with an attachment: a URL to a MMS database is sent to the user as a SMS text, who can later access the content through a web browser. MMS is also commonly used by company marketers to send more enriched and appealing content to their customers.

Mobile Internet access.

It is another term for mobile broadband and refers to the service offered by mobile network operators through which subscribers are provided with internet access wirelessly in their mobile devices such as a smartphone, portable USB modems, tablets, laptop computers. This is made technically possible by assigning a range of wave frequencies to market operators, combined with proper configuration in customer devices and a subscription plan to the provider. Thus, the users are able to access internet at different upload and download speeds depending on the technology level and the pricing rates.

The evolution of mobile network services is formally explained through stages of development also known as "generations". The first generation (1G) included the standards anad groups of technologies that made possible the basic mobile voice calls, continuing with the second generation (2G) which made fully functional coverage and communication between different networks. There was an intermediate phase, the 2.5G, when the GPRS (General Packet Radio Service) was implemented, enabling data transmission in the mobile network frequencies reaching optimum speed of 150 kbps. It was a significant step towards 3G, which improved the data packets transmission speed, the network efficiency, handling more data volume of voice, picture, video media. This new class of services was initially launched in Japan in 2001, to come to Europe (UK) in 2003 with a minimum required speed of 384 Kbps (Amit & Yunfei, 2010). The fourth generation (4G) includes the framework for the group of mobile broadband technologies that will support a multiuser environment with its increasing needs of fast data mobility, affordable prices, anywhere, anytime. As of 2009, LTE (Long Term Evolution) was launched as the successful result to meet the 4G requierements, connecting an all-IP-based network, with downloading speeds up to 1Gbps.

According to the specialized agency of United Nations for information and communication technologies, ITU (International Telecommunication Union), the 2016 world report shows that 95% of the global population has connectivity to mobile network, 84% already has access to mobile internet of third generation while LTE network has been able to spread quickly in the last three years to reach about 4 billion people, with a high quality of Internet accessability (ITU, 2016).
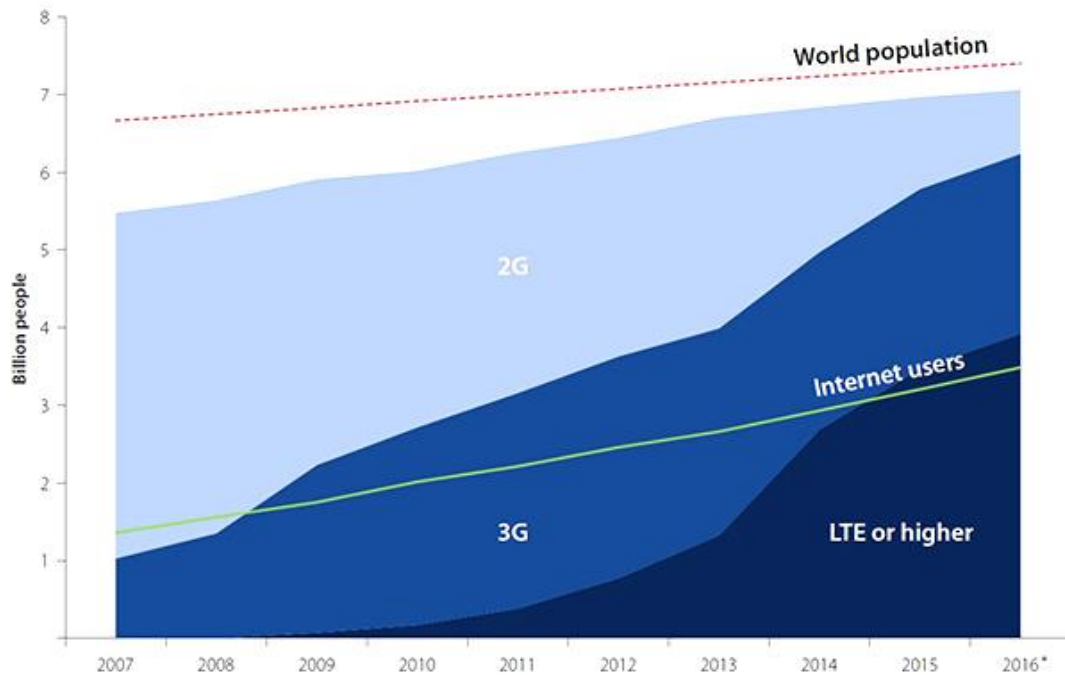
Figure 1 -Mobile network coverage and evolving technologies (source: ITU)

3.1.2. Service commercialization

The mobile services are almost uniform now because of international standardization requirements and the automatic configurations into billions of mobile devices being sold every year around the world. The differentiation, which also create the competitiveness for market supremacy between the mobile network operators, arises then from the commercialization. Market operators have their own unit pricing policies and marketing strategies for their virtual products - voice calls, text messages and mobile internet.

Home versus Roaming.

Mobile operators are limited to their network coverage of the geographical area within the legal borders of a country. Therefore, subscribers who are using mobile services within the country where the SIM card is offered by one of the country's licensed operators are charged with "home" prices.

Otherwise, when the subcriber is abroad, the SIM card will usually automatically connect to the mobile network of any of the operators in the other country and they will be charged with much

higher prices to be able to make/receive calls, messages or data because all requests will be routed to the home network through the transmission towers of the local network. *Roaming* is the term used to describe this phenomenon and is possible through international agreements between carriers (Smith, 2012). In some cases, it is necessary to have the roaming service activated by your home carrier in order to be able to use cellular services abroad. The charges can be unit based for each minute of incoming or outgoing call, each text message or megabyte (MB) of data sent or received on the internet. Alternatively, packages that include a fixed allowance of these units that can be used during your period of roaming, can be offered at discounted prices.

Towards recepients inside versus outside network.

As with many products, companies rely on their customers inviting others to use the same brand, also known as "word-of-mouth" marketing. It is among the most effective marketing strategies for customer acquisition. In the case of telecommunication companies, it gains a particular importance since the mobile services of voice calls, SMS and MMS are double-sided. So, mobile operators offer very low prices (or sometimes free of charge) service when both the sender and the recipient are subscribers of the same network. On the contrary, contacting a mobile number which is not part of the same national mobile operator, will cost the sender (or the caller) a higher price.

To emphasize the benefits of this strategy, mobile operators often create a division of subcribers in different categories/groups even within their own network, where users pay less while communicating inside their subgroup in comparison to a subscriber outside. Therefore, it encourages people to invite their closest friends, relatives or colleagues – everyone with whom they have the most intesive interaction – to be part of their mobile network to facilitate the financial costs of their communication.

The most expensive communication costs occur when the user needs to reach a contact who is a subscriber of an international carrier. In this case, the mobile operators charge based on international tariffs of calls, SMS and MMS. Based on the relative distance between the home country and the country being contacted, also whether both carriers are part of the same international carrier alliance, often different price per minute apply towards countries of the region, of the continent or overseas.

Mobile data.

The mobile connectivity represents a different type of service because it is one-sided meaning that the subscriber's request for data exchange is within its network. However, as with all services, companies have many possibilities to make economic profit out of it. Operators which can transmit both 3G and 4G mobile broadband in their network, will usually charge different prices of each of the technologies and customers can choose which of them to activate depending on the characteristics of their current handset.

Mobile data can be considered a "tricky" service for customers, since the mobile operators can precisely count the amount of data sent/received of a SIM card but the user is not so easily aware of the mobile internet expenditure since accessible multimedia is variable in size and quality, without mentioning the applications which often access data automatically to download updates or other content. For these reasons, the carriers offer mobile data bundles of limited amounts of a certain speed usable within a certain period. Some bundles come with the option of extending it when your data limit is finished before the time limit; in other cases, the mobile operator will allow the subscriber to have mobile internet access of slow speed and minimal quality until the time limit is reached.

All-in-one packages.

It is a common practice of mobile operators to sell all-in-one packages of their services that will adapt best to their customers' needs. Such packages include different limited quantities of call minutes towards same or different network, locally or internationally, SMS, MMS and mobile data, which the subscriber can use within a time limit. Special discounts on the price of these bundles usually are given on holidays during the year, when users are expected to intensify their communication with friends and relatives and surely appreciate special attention by their mobile service provider.

3.1.3. Types of subscribers

Given the penetration rate of mobile telephony is continuously increasing, it is understandable that there is a large variety of user characteristics and their respective needs. However, it is possible to differentiate between different types of subscribers based on certain criteria:

Individual versus organizations.

Mobile phones have certainly become a very close and personal part of our life: contacts, full conversations with SMS and MMS exchanged, pictures, videos and more. It is not unusual that the general idea of a mobile number is possessed by someone as an *individual*, choosing themselves the most appropriate services to consume and pay for it.

While this fact is true for many of the subscribers, there is also another category of users: *organizations*. It means that different organizations, be it private or public ones, within their scope of activities: business, art, politics or non-government, need to use mobile phones as a communication tool with all their employees. In this case, the entity signing a mobile communications contract with a carrier is the organization through a representative. Then, the company itself manages who to assign the SIM card, what available bundles can a certain employee use based on the responsibilities and cover these expenses as part of their operational costs. The mobile network provides usually allows access into a management online application to a representative. The benefits of this service include flexibility in connecting and disconnecting SIMs, transparency over unit of services used, location and device types and many other options, as in the case of Vodafone Corporate Online application (Vodafone UK, 2017).

Prepaid versus post-paid users.

Based on their preferred means of payment for the mobile communication services used, there are two types of subscribers on mobile network operators.

Prepaid subscribers are the users who prefer to pay and later consume. It works simply: the user buys credit in the mobile account which can be used later for types of services whose price can be covered by the current credit. Otherwise, the user is denied the service when the tariff is not affordable. In banking business, a prepaid card's version would be the debit card.

Post-paid mobile subscribers are those who prefer to pay after they consume. This category of clients of the mobile operators, usually has a long-time contract with the carrier, which settles that every month, the client will receive a bill calculated on the mobile services used in the previous month. Then, he/she is either charged automatically through a bank account or is obliged to pay until a certain date. Given the conditions, this type of service is exclusively offered to clients who show proof that they can afford to pay their mobile services bill at the end

of each month. In banking terms, a post-paid SIM card's equivalent would be the credit cards. Both clients use the services of their providers first, then pay later.

3.1.4. The role of government

Information and Communication Technologies (ICTs) and the internet connectivity plays an important role in the economic development of every country through boosting of the competition based on knowledge and innovation. These technologies contribute to sustain better life conditions for citizens, facilitates business processes and increases the efficiency and transformation of governments.

Mobile communication technologies are the group of technologies whose growth and evolution has been unstoppable, thus opening to governments a new powerful field to organize. Mobile operators offer communication services which have almost gained characteristics of necessity goods such as food, electricity, water and gas. In the cases of the latter industries, the market form is either a monopoly (one single supplier) or oligopoly (a limited number of suppliers). Mobile communication market in many countries is oligopoly too, thus competition is limited and the few companies dominating the market can artificially increase prices to unexpected levels or delay investments in network infrastructure or introduce innovative technologies. This is where the government of a country needs to interfere as a market regulator.

To assure a certain level of competition, the governments can control the entry or exit of a mobile network operator. A minimum recommended number of carriers operating within a national market is four. Hence, governments can either boost competition by providing new licenses and different policies to "welcome" the newcomer for the first few years. On the other hand, if a mobile operator decides to retreat its license, merge with one of the competitors or goes bankrupt, the government has the right to interfere and put the company's shares in public auction to find a substitute actor. In April 2016, the proposed sale of O2 to Hutchison, both mobile operators in United Kingdom, was strongly opposed, since it would have reduced the number of mobile network operators to three, thus threating the level of an effective competition (Paul Budde Communication, 2016).

Governments can also control the launching of new technologies by the mobile operators in the national market. While the first 3G network was implemented in 2001 in Japan, it was delayed few more years around the world. The predictions over 3G's exciting potential, caused the

license fees to be extremely high, supported by a limited number of licences and sealed bid auctions for some European countries. In Indonesia, the 3G license was only awarded in 2007 and in China it was launched in 2009 due to lengthy processes of approvals for investments in infrastructure upgrade (Amit & Yunfei, 2010).

An additional aspect where the government intervene in the mobile communication market is by the control on the service prices to protect mobile subscribers from fraud events that can happen in case the companies abuse with very high prices. Consumer protection public institutions are responsible to observe and report the market price changes. Simultaneously, other competent establishments publish recommendations or binding legal documents to influence the national level of telecommunication prices.

In the case of the European Union countries, the national agencies must fulfil policy requirements by the European Commission actions. The framework of this international institution aims to promote fair competition, innovation and protect consumer rights. One successful application is the abolishing of the roaming fee. After long discussions, the Members of European Parliament came with a common policy in order to enforce the benefits of a single market for all EU citizens who can now communicate on their holidays abroad without being shocked by the expensive mobile bills on their return home. Table 1 below shows the current fees and the complete removal of the fees as of June 2017 (EC, 2016). The current roaming fees are 92% cheaper compared to the roaming charges in 2007 (Reuters, 2016).

	From 30 April 2016	From 15 June 2017
Outgoing voice calls (per minute)	domestic price + up to €0.05	Roam like at home - no extra fee, same as domestic price
Incoming voice calls (per minute)	€0.0114	Roam like at home - no extra fee, same as domestic price
Outgoing texts (per SMS message)	domestic price + up to €0.02	Roam like at home - no extra fee, same as domestic price
Online (data download, per MB)	domestic price + up to €0.05	Roam like at home - no extra fee, same as domestic price

Table 1- The maximum EU tariffs for calls, texts, data (Source: EC 2016)

Similarly, the intervention of European policymakers in the telecommunication market of Eurozone through the Mobile Number Portability has had a particularly great impact on its present conditions. Mobile Number Portability (MNP) is an additional feature in the subscribers' contracts that allows them to keep their mobile number and change to another competitor network operator. The absence of this service increases the switching costs, especially for business people, who in case of dissatisfaction with their current provider would have to lose their number as well and then be forced to inform all the previous contacts of the new number provided by a new operator. Consequently, the competition has increased because users can easily switch operator. Another contributing factor is the time and fees for this service to be completed have decreased respectively up to few hours and free of charge. The policy framework of 2003 required all member states to implement it in their national legislation, and in countries where the process was delayed beyond 2005, the European commission launched legal proceedings since their MNP rules had not been put in practice (Sanchez & Asimakopoulos, 2012).

3.2. Mobile services market in Albania

3.2.1. . Country overview

Population characteristics

Albania is a relatively small country located in the Balkans, south-eastern of Europe. Its population numbers 2.876 million people living in the country (Instat, 2017). Whilst at the beginning of the millenia, the people boasted being the youngest in Europe with a median age of 27 years old (Statista, 2015); the situation has changed almost 20 years later. In 2016, only 26.9% of the population is teenage or younger (0 – 19 years old), while the median age has increased to 35 years old (United Nations, 2017). These are factors to illustrate the present trend of population aging, following similar patterns of developed countries, due to a significant decrease in the total number of births every year.

Nonetheless, more than 65% of the country are within a working age, occupying jobs in the fast-growing sector of services. Transition from a centralized marketplace ruled by the only governing party into a free-trade market was a challenging and chaotic period. However, nowadays the situation is more stable, with energetic, self-made entrepreneurs who have build their own businesses in a variety of service sector, which employ a large number of educated and hardworking young people. In the capital, Tirana, where about a third of the population is located, 31% of the people hold a university degree or a higher level of qualifications, according to the National Instutitute of Statistics. The closed environment of the past, has had a great influence into shaping the mentality in today's parents, who are encouraging and pushing the new generation to study more, to be open and eager to the world's information and cultural developments. Many have emigrated everywhere in Europe, and some are now returning to incorporate their knowlegde, experience, western lifestyle and culture back into the country.

Economic indicators

Nonetheless, the average Albanian is still struggling with finances on a daily basis. Prices of products and services are similar to those in the European Union, given that the country imports more than it produces and exports, except for the freshly grown seasonal fruits and vegetables produced in the local markets. Referring to data of 2015, on a monthly average, an Albanian's

expenses reached 36,876 Albanian Lek (approximately 273 Euros), while the monthly income is nearly at 16,885 ALL (or 122 Euros). This significant gap could be explained partially to high level of poverty with 14.3% of the people living below the national poverty line and also to an unemployment rate of 15.2% as measured in the third quarter of 2016 (Trading Economics , 2017).

ICT sector

Albania joined the free-market economy as a democratic country only in 1991, after the youth revolution against the half-century-long communist dictatorial system. Since then, the country has been aspiring to be part of the European Union. On June 2006, the Stabilisation and Association Agreement was officially signed, which represents the first important step on the path to complete membership. The European Commission has provided guidelines and requirements for the governments of Balkans to focus their investments in the ICT technologies through the Electronic South Eastern Europe Initiative, namely eSEE Agenda of 2002-2007 and renewed objectives on Agenda Plus of 2007-2015 (eSEE, 2007). Taking into consideration the global trends in Information Technologies and the regional political incentives, the development and the wide utilization of ICT has been one of the priorities of the Albanian governments, regardless of elected political party at these time periods, since it has a direct and indirect influence in the overall economic growth. Every year, the investments in IT have counted on average 6% of the Gross Domestic Product, which is higher than most of the neighbouring countries (Tyxhari, 2012).

On the other hand, the mobile communications technologies particularly have progressed with fast and increasing paces in terms of market penetration. The most recent data referring to the third quarter of 2016 released by the Authority of Electronic and Postal Communications (AKEP), reports that there is a total of 5.243 million SIM cards in Albania with a penetration rate of 185%. In comparison to the other countries in the Balkan region or even towards EU members, this indicator is the highest among them.

Regarding mobile internet penetration in the marketplace, numbers show that 1,833,231 subscribers have access to services of 3G or 4G, i.e. 51% more than the same period of the

previous year. Majority of the users access mobile internet through their smartphones and only 6.7% of them use the SIM card to provide internet to a tablet device or a portable USB wireless modem. The overall penetration rate of mobile broadband in the country has reached approximately 65%, and the trend is continuing towards a steady growth, as it is shown in the graph below with quarterly measurements over the past two years (A.K.E.P., 2016).
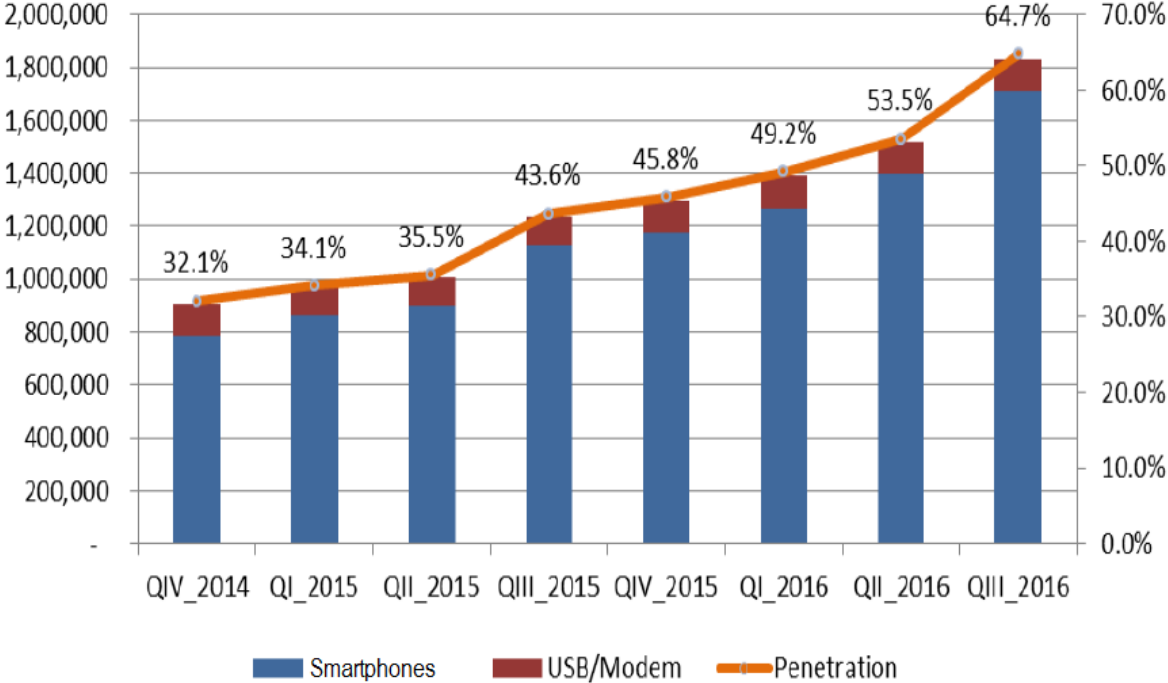
Figure 2 - Penetration rate of mobile broadband users (Source: AKEP, 2016)

3.2.2. Mobile operators

The main reforms in telecommunication sector started with the gradual liberalisation of the market by allowing private investors to operate. Currently in Albania there are four mobile network operators: Telekom Albania (former AMC), Vodafone Albania, Eagle Mobile and Plus Communication.

Telekom Albania

Figure 3- Telekom Logo

On July 2015, the first mobile network operator in Albania, namely AMC (Albanian Mobile Communications) was substituted by the new brand name Telekom Albania.

AMC was the first to provide the mobile signal in May 1996, but only in 2000 the company became privately owned when the international Cosmote Consortium bought 85% of the shares (Telekom AL, 2017). The company's investments account for more than hundreds of million Euros towards technology advancement, maintenance, construction of mobile towers etc. It was granted the license on offering 3G services to approximately 95% of the territory in 2011 and four years later this carrier could provide 4G technology to its customers too. In 2016, the 4G coverage provided by Telekom Albania was certified as the best performance in the market, with a maximum speed of 178 Mbps, in a testing research conducted by the German company P3 Group GmbH (NOA, 2016).

Figure 4 - Vodafone Logo

Vodafone Albania

One of the most well-known mobile network operators in the world, Vodafone Group, introduced GSM services in Albania on August 2001 through a fast process of network configuration based on its previous experience in more than 30 countries worldwide. The exclusivity of the 3G technology license in Albania was given to this carrier in 2011, which has managed to provide network coverage to 99% of the country's territory. It currently counts for 2 million subscribers in its communication network. The company is present with 139 shops throughout the country, operating 7 days a week, offering a wide range of services and mobile products. The contribution to the Albanian economy is not only directly through tax generated by revenues, but also by employing and training many

qualified Albanian people as part of their working environment (Vodafone AL, 2017). In the list of the top ten companies which reached the highest profits in Albania in 2015, Vodafone ranks the seventh with a profit level of 4.2 million Euros. Though being the only communications operator in this category, the profits of 2015 saw a decrease of 25% compared to the previous year, while the highest profits were scored in 2013 with a value of 25 million Euros (Panorama, 2016).

Eagle Mobile

Eagle Mobile is the third mobile operator which entered the Albanian market. It was founded in 2003 by the government at the time when the operator for fixed telephony, Albtelecom, was also owned by the state. By 2005, a Turkish group holding, Calik Group bought most of its shares. They officially launched the mobile operator under the brand name Eagle Mobile, part of their company, on March 2008 (Albtelecom, 2017). One strategic move of the investors was to merge both companies, so consumers can be more attracted to a whole integrated group of services: fixed telephony and broadband internet at home with mobile calls and data products on the move. Currently their network covers 98.5% of the country's population and 92.5% of territory. The arrival of the third mobile network operator was a very important step because it transformed the market from a duopoly to oligopoly. Soon enough, the overall level of the communication prices saw a considerable decrease of over 40%. Eagle Mobile subscribers were the first to navigate on mobile internet of the 2.5G technology until 2012, when the company was licensed to launch the 3G services.

Figure 5 - Eagle Mobile Logo

Plus Communication

Founded a year later after the third operator, Plus Communication started offering mobile services in 2010, a company proud to be the only of its competitors with a completely Albanian-owned capital and investors. The creation and the entry of the fourth mobile network operator were initiated and strongly supported by the governmental institutions, including the national regulatory authority AKEP, with the ultimate

Figure 6 - Plus Communication Logo

purpose of increasing the number of competitors in the telecommunications market, thus providing the consumers with a higher quality of services for more fair and lower prices. The initial investment of the organization was 90 million Euros and hiring a staff of 310 employees (Tema Online, 2016). Due to the late entry in the market, the EU directives recommend that the newcomer is treated differentially, with favouring and asymmetrical operative fees for a short period until it reaches an optimal market share of 15 -20%. However, such policies have not been fairly executed for the fourth carrier in Albania, given the fact that after six years operating in the marketplace, only 6% of the overall number of subscribers own a SIM card by Plus Communication.

The table below presents a summary of the main events and milestones in the evolution of the Albanian mobile communications market in the chronological order, alongside the mobile network operator (MNO) brands that the specific achievement is attributed to. It is worth noticing from the timeline of the events that even though the introduction of mobile services in Albania was much delayed compared to the rest of Europe, the most recent years have been dynamic and the country has managed to catch up with the latest of the technological advancements, navigating through mobile internet of the fourth generation with high speed and quality.

Table 2 - Albanian mobile service evolution

Date	Event Description	MNO brand
01 May 1996	**MNO entry #1**	Telekom
01 August 2001	**MNO entry #2**	Vodafone
01 December 2002	Roaming #1	Telekom
12 March 2008	**MNO entry #3**	Eagle Mobile
28 November 2010	**MNO entry #4**	Plus Communication
01 January 2011	3G license #1	Vodafone
01 January 2012	3G license #2	Telekom
17 December 2012	3G license #3	Eagle Mobile
01 March 2015	4G license #1	Telekom
01 March 2015	4G license #2	Eagle Mobile
09 April 2015	3G license #4	Plus Communication
01 May 2015	4G license #3	Vodafone

The picture of the market of the mobile services in Albania would not be comprehensive without having insights on the dynamics of the market shares. The latest official data published by the public institution responsible for observing this sector (A.K.E.P., 2016) belong to the period July – September 2016. It shows that Vodafone dominates the market, supplying 50% (or 1.933 million) of the overall active SIM cards in Albania and the three remaining operators share the other half of the market among them. Telekom Albania, which took over the legacy of the first operator in the market, controls another third of the market shares (or 1.288 million mobile users). The third and the fourth carriers who entered the market, Eagle Mobile and Plus Communications own 13% (494 thousand cards) and 4% (160 thousand), respectively.

In comparison to the same period of the previous year, there are not so many significant differences in the overall structure and market dominance. However, it could be emphasised on the fact that the Plus Communication has lost popularity among customers since in September 2015 it counted 280 thousand active users or 8%, meaning twice as many of the current market shares. Meanwhile, the largest market dominators have continued to enforce their positions while the overall subscribers base grew with approximately 300 thousand new SIM cards.

Even though there has been an overall market expansion, still one half of the operators has faced customer loss, and subsequently profit loss, whilst the other half has managed to do completely the opposite. Such situation demonstrates once again the importance of studying the factors behind customer behaviour and their preferences in mobile services. As a result, the mobile network operators would know what measures to take and what marketing strategies to develop to able to attract more customers successfully.
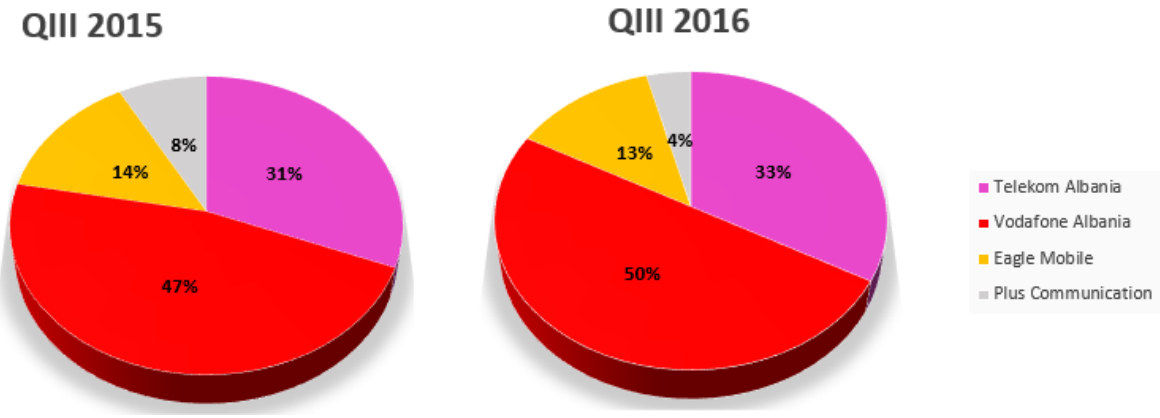
Figure 7 - Mobile Market Shares 2015 – 2016

3.3. Customer Loyalty

Customers are the most important asset of every organization aiming to maximize their profits, but this asset becomes extremely valuable in the businesses operating in the services sector. What differentiates service companies from production ones is the fact that the value they create is intangible and comes directly and mainly from interacting with their customers.

In this aspect, it is obvious that the better they are able to understand their customers' behaviour, needs and expectations, the more successful the company will be in their efforts to satisfy them. However, it is not always easy to understand and foresee the individuals' behaviour because there are many influencing factors around the decision-making process which often makes people themselves getting "surprised" at their own behaviour.

The studies and theories about people's behaviour have been numerous because it has continuously concerned researchers of psychology, social and political sciences, economics, healthcare for many years now.

The "Theory of Planned Behaviour" (Ajzen, 1991) is the theory which states that behavior can be deliberate and planned, therefore it is possible to be predicted. The behavior that an individual will perform is determined by the intention which in turn is affected by attitude and the subjective norm.

The recently-revised definition for *behavioral intention* is "a person's perceived likelihood or subjective probability that he or she will engage in a given behavior" (Committee on Communication for Behavior Change in 21st Century, 2002). The ability to measure the behavioural intention of customers regarding purchase decisions of specific services provides businesses with a strong competitive advantage.

The most frequently used method for this purpose is through surveys which display statements and the participants show their level of either agreement or disagreement with the statement in a *Likert-scale*. This symmetric ranking scale is named after the psychologist Rensis Likert, who suggested it as an efficient way for capturing the intensity of the feelings that an individual has towards an opinion or phenomenon (Likert, 1932).

In other words, Likert-scale represents a quantitative approach to describe opinions and feelings, which are normally of a qualitative nature. Thus, it transforms subjective emotions and reactions

by enabling their further study and analysis through standards scientific methods of statistics and applied mathematics.

The focus of this thesis is to analyse investigate the customer loyalty among mobile services users in Albania. In the next few pages, important definitions and a revision of most significant findings in this research area will be presented, which will be necessary in building the basis for our analysis and hypotheses testing in the practical part related to the market under study.

Customer loyalty has been formally explained as "a deeply held commitment to rebuy or re-patronise a preferred product or service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behaviour" (Oliver, 1997). A loyal customer is clearly highly valuable to any business since this loyalty is translated into continuous and higher profits not only by the direct contribution of the customer, but also indirectly by attracting new customers through positive recommendations in the social circles, and decreasing operational or marketing expenses by the management.

Among many other typical behaviours, two are the most distinguishing characteristics of loyal customers as found by Ladhari *et al.* (2011) and Giovanis *et al.* (2014). Firstly, they would strongly recommend their favourite service company to friends, family, colleagues and broader social groups, thus providing word-of-mouth marketing for the brand. Secondly, they are highly likely to retain the same company of services for a long time and show the intention to do so further in the future.

3.4.   Customer Satisfaction

The feeling of satisfaction is classified among the most positive human emotions and is achieved when the expectations created in one's mind about an unknown situation are completed or overpassed in the moment of the encounter with the real one.

In the services management and marketing, the term *customer satisfaction* has been defined by Gerpott (2001) as:

> "...an experience-based assessment made by the customer of how far his own expectations about the individual characteristics or the overall functionality of the services obtained from the provider have been fulfilled. Satisfaction is higher or lower with respect to the extent to which what was eventually provided exceeds or falls short of what was expected. „

The definition above describes all elements for the subjective nature of the customer satisfaction, meaning that its level is influenceable by a range of factors such as the customer's perceptions and different aspects of the service offered, including but not limited to its quality. Some of the factors are found to be significant in all services sectors whilst others are specific to one type of service within a particular marketplace. The rest of this section will present the most important components that have been proved in literature research to have a major effect in the customer satisfaction level among users of telecommunication services.

Service quality is considered the main factor that affects the purchase decisions of customers and it is tightly related with customer satisfaction. It is a main driver of competition between businesses offering similar services. The difficulty on the assessment of service quality comes with its definition and measurement. One of the most used techniques so far to measure the quality of services in many sectors is the SERVQUAL measurement instrument (Parasuraman, Zeithaml, & Berry, 1988). It was proposed as a basic model where customers express their perceptions on the quality of the service offered by companies through a point-scale rating. Upon revision of the original design of ten properties, five were the most stable dimensions to clearly define of how customers perceive the received service quality, as explained below (Kotler, 1999):

1. *Reliability* is the ability of the company to provide the services it promises accurately and such that the customers can depend on the services consistent performance.

2. *Empathy* means that the customers are provided with personalized, individual attention towards their needs, problems, suggestions or requests. Given that mobile users are closely attached to their devices, full of personal moments of their lives, it gives mobile network operators a challenging but amazing opportunity to connect with the customers on a personal level care and attention.

3. *Assurance* is that dimension of service quality that customers perceive through the knowledge, professionalism and manners of representatives of the provider they encounter. Their overall behaviour to customer care should transmit an overall sense of trust and confidence to perform their job.

4. *Responsiveness (Promptness)* is the feature that describes the willingness of the service company to put their customers' requests in top of their priorities by helping them as soon as possible with prompt and efficient service. Customers will clearly be more satisfied when readiness and promptness are shown to them every time they are provided with the needed services.

5. *Tangibles* include the appearance of the facilities of the company, the offices, the staff, the communication materials like leaflets, posters that create the "touchable" link between customers and the service company. Quality in these details that help to provide the service matters in the evaluation of the clients of the overall service quality.

There is one more additional factor that has been found important to describe the customer satisfaction in the mobile communication industries and it is the *network quality* (Seth, Momaya, & Gupta, 2008). Considering the fast advancements in technology, customers' perception of how fast and convenient the network connection on their devices needs to be, changes and increases very often. Therefore, their satisfaction level with the company will be influenced by the degree to which the network quality of their current provider matches their expectations of a good network.

Additional important factors that influence customer satisfaction is c*orporate image,* and it represented what is the general impression of the company in the eyes of each of its customers. Corporate image of an individual is often influenced by the social group dimension and it is also

relative to the image that other competitors have created in the market. It is related to the various physical and behavioural attributes of the firm, such as business name, architecture, variety of products/services, tradition, ideology, and to the impression of quality communicated by each person interacting with the firm's clients (Nguyen & Leblanc, 2001). To build a good image of the corporate, usually related with its representative symbols and values takes a long time but can be highly increased if the company brings some innovative technology or achieves an accomplishments unexpectedly. Similarly, the corporate image could be more easily destroyed when customers or other groups interacting with the company find that they are being neglected so their needs and expectations are not met (Kotler, 1999).

Service value is often defined as the ratio of what the users pay in time and money for the services they acquire in comparison to the value of what they perceive to have received. It also plays an important role in customer satisfaction as found in many studies.

Customer characteristics also play a role in defining their needs and expectations from the mobile provider. A paper from last year explored some of these factors in Albania market. Terezi et al. (2016) found that place of residence, gender, education, occupation and age are factors that differentiate the preferences of mobile subscribers in certain ways.

User's Place of residence - Taking in consideration that 3G service is very important for the users, especially the young ones, the quality of this services is listed among the most important qualities that influence the ranking of mobile operators. In the urban areas, the operators offer a much better 3G speed than in suburban ones. This phenomenon happens because mobile companies focus their attention more in the network quality, coverage and the other parameters in urban areas rather than in suburban.

User's Gender - Gender is a factor which effects the mobile services usage. There is a relation between the gender and the duration of using a mobile service. Usually there are more women than men who use the contractual agreements. Despite this fact, women use the mobile services for a shorter time than men around two or three years, meanwhile men on the other side use the same mobile service for seven years.

User's Education - There is a connection between the education and the type of mobile operator users chose. People who have 12 or less years of education perform simpler tasks. Users who have a masters or PhD degree demand for more complex task so they need more 3G and voice services, for this reason they will orientate themselves to a operator who can keep up with their needs.

User's Occupation- Employment of users has an important role in their duration in mobile operator. The occupation they have is closely related to the selection or abandoning the operator. According to this theory the employed customers use contractual agreement with their operator. The unemployed ones have the same number for a long time, meanwhile students are the ones who change it more often and they represent the majority of users in a short contractual period.

User's Age - Age should be considered as a significant factor that has huge impact in variables like: speed of 3G, price of service, signal coverage, webpage of mobile operator and the need that user has to use 3G service. The relationship that exists between the age and the satisfaction level the users get from their operator is like this: The higher the age is, the higher will the satisfaction be on the services that have a lower price. But the interest for 3G speed or webpage of operator will be lower. These are more appreciated by the young users who pay more attention to the data transmission speed, 3G, webpage as a source of information.

3.5. Switching intention

Customer switching behaviour can be defined as the behaviour of a customer who is not satisfied with the current services and therefore changing to the subscription of services from another provider (Calvo-Porral & Levy-Mangin, 2015). Switching a mobile carrier comes with its disadvantages too, such as monetary costs, psychological cost while being accustomed to the new company culture and services, time costs and many more aspects. While companies are increasing their efforts into designing strategies to create more switching barriers for the customers, it is not possible to control the factors that increase the switching intention.

According to Lu et al. (2011) one of these factors is the availability of *attractive alternatives* in the market. It can be defined as the estimate that each customer makes about the availability of other providers which will be able to give a likely satisfaction level or higher. To make more tangible the concept of alternative attractiveness, it can be the overall image, reputation, service quality of the companies which offer service that could replace the current ones and form which the customer estimates he/she could benefit more. The more alternatives there are in the market, the more attracted the customer will be, therefore the higher the intentions of switching the current provider.

In the previous section customer satisfaction was discussed. When the customers are satisfied, they believe their company to be the one giving maximum accomplishments or their needs, expectations and overall joy of using their services. Conversely, when the customers are dissatisfied with their service providers, they will seek to change this situation by either complaining to the company, or getting informed around other possibilities to decrease their dissatisfaction level and improve the outcome of the services they use. In this case, the customer is simply reconsidering the attractiveness of alternatives to the current mobile provider, so they have a higher switching intention. Therefore, it is logical to understand that the relationship between switching intention of customers is negatively related to the customer satisfaction level.

3.6.   Methodologies for data analysis

Contingency tables (m*n) or also known as crosstabs are frequently used in statistical analysis to represent the relationship between several variables. The term "Contingency tables" was used for the first time by Karl Pearson in his book "On the Theory of Contingency and Its Relation to Association and Normal Correlation" published on 1904. These two ways tables are a special form of frequency distribution tables and are used as a tabular mechanism to represent categorical data in terms of frequency counts. The way it represents data is in a matrix format and displays the frequency distribution of variables.

To be more precise, a contingency table with m*n parameters, shows the observed frequency of these variables which are arranged in m rows and n columns, and the intersections between them create a cell of the table. A problem that comes from the multivariable statistics is finding a direct depended structure that underlies the variables contains in high dimensional cross tables. In case some of the conditional independences are known, the storage can be done in an easier and smarter way. Information theory concepts that get the information from the distribution of probability, can be used to do this storage.

In contingency tables is used the **Chi-Square Test** in order to see whether there exists a relationship between the variables or not. This is a statistical hypothesis test where the sampling distribution of the test statistic is a chi squared distribution, in case the null hypothesis is true. Chi-Squared test is an abbreviation for Pearson's Chi-Squared Test.
While the Chi-Square Test proves if there is a relationship between variables, it does not say how significant and important it is. In order to determine the strengths of the association the variables have is used **Cramer's V**. Its name come from the Swedish mathematician and statistician Harald Cramer. This is calculated after Chi-Square has proven the existence of relationship. It varies between 0 and 1. The closer it is to 0 means that there is little association between variables. On the other hand, the closer it is the V value to 1. The stronger the association is.

Contingency tables (2*2) are two-way frequency tables and these are the smallest version on a contingency table because those as a tabular mechanism should have at least two rows and two columns to be used in statistics to summarize categorical data in terms of frequency. They create a simple picture of the interrelation between two variables and help finding the interactions between them. **Chi Test** in these kind of contingency tables is applied when there is a two - categorical variable from a single population and it determines if there is a significant association between them. **Cramers'V,** when the table is (2*2), is equal to the absolute value of phi coefficient.

 Odds and Relative Risk are measures that describe the comparative likelihood of an event happening, when two groups are under study. Even though they are closely related to each other, these are different statistical concepts from each other. **Relative Risk** is the risk of an event relative to exposure, is itself a risk of probabilities. It measures the risk of an event among those with a specific exposure with those who weren't exposed. **Odds Ratio** on the other side compares the events with nonevents, the absence of an exposure when we already know the specific outcome. It is the ratio of the odds of an event happening in a group to the odds of it happening in another group. These ratios are usually comparable, but OR can estimate and magnify the risk, but however it should be avoided in case RR is used.

"**Confirmatory factor analysis (CFA)** is a statistical technique used to verify the factor structure of a set of observed variables. CFA allows the researcher to test the hypothesis that a relationship between observed variables and their underlying latent constructs exists. A latent construct can be measured indirectly by determining its influence to responses on measured variables. A latent construct is also referred to as a factor, underlying construct, or unobserved variable. „ (Suhr, 2010). Among the measures to test the reliability and validity of the factors are CR (construct reliability) and AVE (average variance extracted). They are built on the following formulas:

Construct reliability = (sum of standardized loadings) ^{2} / [(sum of standardized loadings) ^{2} + sum of indicator measurement error].

The variance extracted measure "reflects the overall amount of variance in the indicators accounted for by the latent construct." It is calculated by the following equation (Hair et al. 1998):

Variance extracted = [sum of (standardized loadings) 2] / [sum of (standardized loadings) ^{2} + sum of indicator measurement error]

Linear Regression is among the most widely known and used techniques, to define relationships between dependent (Y) and independent variables (X) through an equation that represents a line. When the equation has more than 1 explanatory variable, then the regression is called multiple linear type. The method to obtain the best line that fits to a set of data is known as Least Square Method because its principle is in finding the coefficients that minimize the squared differences between the observed data and the calculated ones in the model. To evaluate the model is used the R-square metrics, whose values variate between 0 and 1.

When dealing with multiple independent variables, the procedures to estimate the best coefficients of the multiple linear regression can be forward selection, backward elimination, or stepwise approach (Christensen, 1996).

The terms and statistical methods explained above will be useful during the processing of the data sample in the next section of the practical part.

4. Practical Part

4.1. Survey design

The investigation on the factors influencing customer's loyalty in the market of mobile communication services in Albania is based on the collection on 452 opinion-based answers from current mobile subscribers. The survey was conducted online over a two-week period. This method of data collection was chosen since it enables a high reachability of users by sharing the online Google form through different means of virtual contact: e-mails in different workplaces and organizations, social networks and online forums. The questions were mostly multiple-choice, and the randomization option of the order of the questions in each section was implemented.

Majority of the respondents were contacted and instructed personally about the purpose and the completion of the form. However, the introduction part of the survey clearly states the motivation behind the survey and the fact that the information will only be used for academic study purposes and that information they provide is confidential and as such, will not be used in any way to affect the privacy of their personal information. The questions were clear and straightforward, and in the few questions with confusing terms, an additional explanation was provided below the question to cover for different levels of users' understanding and technology proficiency.

The survey was organized in four main sections of questions:

5. The first section includes questions to get a better insight on the usage characteristics of the user from his/her mobile service provider. Users provide information about their average consumption of outgoing calls, short text messages, mobile internet data and the average monthly expenditure on these services. Few more questions ask the user to specify whether the decision to be with the current operator was as a new customer or by the number portability service from another competitor together with the length of time as a subscriber to this company.

6. The second section explores more about the respondents' level of satisfaction through different items measured by a 5-point Likert scale (with 1 – strongly agree to the statement and 5- strongly disagree to it).

7. The third section of questions deals with statements to understand better the relationship of the customer with their service provider. It includes items on the corporate image, switching intention and their perception of the service quality provided by the operator.

8. The fourth section finally contains only few elements to collect some demographic information about the respondent through variables such as gender, age, occupation, education. It also includes a question about their most probable attitude towards complaining in case they had any problems with the mobile company.

The full structure of the questions is presented below. The questions were translated in Albanian from English, which were consulted and reviewed by colleagues speaking both languages before publishing the survey and distributing it to respondents.

No.	Question Item	Multiple-choice possible answers				
		Section I: Mobile usage characteristics				
1	My current mobile number is provided by the company:	Telekom Albania	Vodafone Albania	Eagle Mobile	Plus Communications	
2	My tariff plan type is:	Prepaid	Post-paid			
3	I became a client to this company through:	Purchase of a new mobile number	Number portability from another company			
4	I have been using mobile services from the current company for:	Less than a year	1 – 3 years	3 – 5 years	More than 5 years	
5	I use my SIM card in a mobile device of type:	Smartphone (Android OS)	iPhone (iOS)	Other type of Smartphone	Simple mobile phone	
6	On a monthly average, I make outgoing phone calls for:	Less than 60 minutes (<2min/day)	60-120 min (2-4min/day)	120-180 min (4-6min/day)	More than 180 minutes (>6 min/day)	
7	On a monthly average, I send SMS in the number of:	Less than 60 SMS (<2 SMS/day)	60-120 SMS (2-4 SMS/day)	120-180 SMS (4-6 SMS/day)	More than 180 SMS (>6 SMS/day	

8	On a monthly average, I consume mobile internet data (3G/4G):	0 MB (My mobile doesn't support M.I)	Less than 500MB	500 – 1GB	More than 1GB	
9	I buy flat rate bundles of Min/SMS/GB either daily/weekly/monthly:	Always (1)	Often (2)	Occasion ally (3)	Rarely (4)	Never (5)
10	On a monthly average, I spend on mobile services:	Less than 500 ALL (<3.7 EUR)	500-1000 ALL (3.7 – 7.4 EUR)	1000-1500 ALL (7.5-12 EUR)	More than 1500 ALL (>12 EUR)	

Section II: Measuring customer loyalty on different factors						
Variable: Customer Loyalty						
1	I will certainly recommend my operator to friends and relatives:	Strongly Agree (1)	Agree (2)	Neither agree or disagree (3)	Disagree (4)	Strongly disagree (5)
Variable: Customer Satisfaction						
1	The decision to contract this company was wise.	Strongly Agree (1)	Agree (2)	Neither agree or disagree (3)	Disagree (4)	Strongly disagree (5)
2	So far my company has given me everything I expected.	Strongly Agree (1)	Agree (2)	Neither agree or disagree (3)	Disagree (4)	Strongly disagree (5)
3	I think my company successfully fulfils my needs.	Strongly Agree (1)	Agree (2)	Neither agree or disagree (3)	Disagree (4)	Strongly disagree (5)
Variable: Corporate Image						
1	The image I have for my mobile company is:	Very good (1)	Good (2)	Neutral (3)	Not good (4)	Very bad (5)
2	The image that my company has created in the minds of consumers is:	Very good (1)	Good (2)	Neutral (3)	Not good (4)	Very bad (5)
3	My company has a better image than its competitors.	Strongly Agree (1)	Agree (2)	Neither agree or disagree (3)	Disagree (4)	Strongly disagree (5)
Variable: Service Value						
1	The company has affordable prices for its services.	Strongly Agree (1)	Agree (2)	Neither agree or disagree (3)	Disagree (4)	Strongly disagree (5)
Section III: Measuring customer relationship with the service provider						
Variable: Service Quality						
1	My company provides its services and offers that they promise.	Always (1)	Often (2)	Occasion ally (3)	Rarely (4)	Never (5)

2	The customer care employees and my company give me the right attention.	Always (1)	Often (2)	Occasionally (3)	Rarely (4)	Never (5)
3	My company and its staff are willing to help me as fast as possible	Always (1)	Often (2)	Occasionally (3)	Rarely (4)	Never (5)
4	The staff of my company is professional and confident to address my problems.	Strongly Agree (1)	Agree (2)	Neither agree or disagree (3)	Disagree (4)	Strongly disagree (5)
5	The shops, offices and other facilities of my company look neat, professional, attractive and modern.	Strongly Agree (1)	Agree (2)	Neither agree or disagree (3)	Disagree (4)	Strongly disagree (5)
6	The network of my provider has wide coverage and good quality.	Strongly Agree (1)	Agree (2)	Neither agree or disagree (3)	Disagree (4)	Strongly disagree (5)
Variable: Attractiveness of Alternatives						
1	I think I would be equally satisfied with another company.	Strongly Agree (1)	Agree (2)	Neither agree or disagree (3)	Disagree (4)	Strongly disagree (5)
2	I think I can choose better mobile providers in the market.	Strongly Agree (1)	Agree (2)	Neither agree or disagree (3)	Disagree (4)	Strongly disagree (5)
Variable: Switching intention						
1	Would you switch your current company?	Yes, I would definitely switch it. (1)	Most probably, yes. (2)	Maybe yes, maybe no. (3)	Most probably, no. (4)	No, I would never switch it. (5)
2	I regret to have become a subscriber at my current company.	Strongly Agree (1)	Agree (2)	Neither agree or disagree (3)	Disagree (4)	Strongly disagree (5)
Section IV: Customer characteristics						
Variable: Complaint behaviour						
1	When I have some complaint for my company:	I contact directly the staff of the company.	Share my complaint with friends, colleagues or family.	I complain publicly by posting in social networks, or media, or other organizations.	None of the above.	
Variable: Demograhics						
1	Gender:	Male	Female			

2	Age:	(Enter Number)				
3	Education: (highest level completed or currently pursuing)	Elementary School	High School	Bachelor Degree	Master Degree	PhD
4	Occupation	Unemployed	Self-employed/ Own business	Employed (private or public company)	Student	

The collected data are *cross-sectional*, which is a property used to describe observations or measurements for multiple variables under study at a single point in time for all the observed individuals of the sample.

Furthermore, the sample size is sufficient to represent the population of all mobile users in Albania referring to sampling techniques for research purposes where a calculated table determines that for populations over one million individuals, the sample size should contain at the least 384 elements (Krejcie & Morgan, 1970).

The individuals in the study sample are *randomly chosen*, covering a wide range of ages and educational levels. Most importantly, it is worth mentioning that they are customers of all the mobile operators, which enables to measure the overall level of customer loyalty in the mobile telecommunication market, without leaving any subgroup unrepresented.

4.2. Descriptive analysis

4.2.1. Categorical variables

During the collected information from respondents, there were 33 variables in total. Out of these, 8 variables were qualitative categorical where users identified themselves to be part of one of the proposed categories in the answer options. For the categorical nominal variables, the statistical descriptive analysis consists in creating the frequency tables and their appropriate graphical representations. The following section will focus on showing such an insight in these variables in our study. The tables and the graphs were generated using the application SAS Enterprise Guide.

Variables: Mobile Network Operator (MNO) and Contract Type

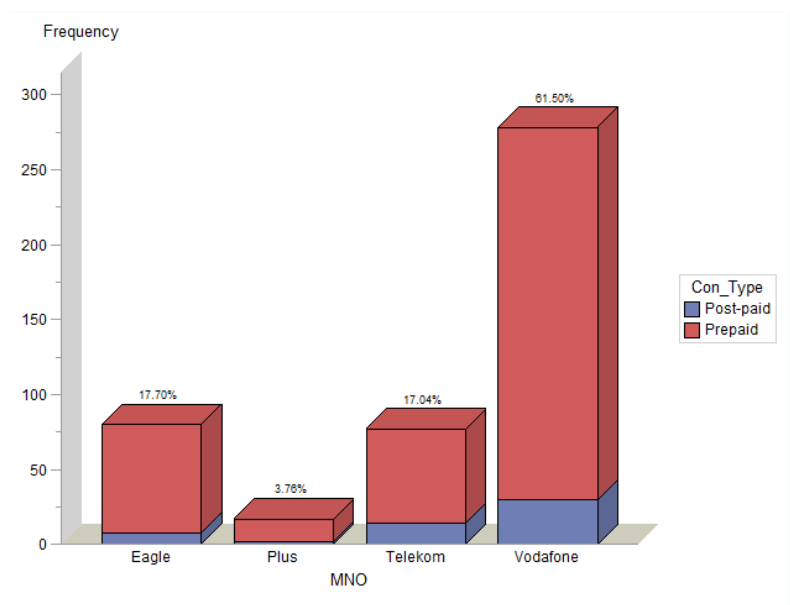**Figure 8 - Bar Chart: MNO and Contract [source: own]**

Table 3 - Frequencies of MNO and Contract Types [source:own]

Contract_Typ	MNO					Total
		Eagle	Plus	Telekom	Vodafone	
Post_paid	.	8.00	2.00	14.00	30.00	54.00
Pre_paid	.	72.00	15.00	63.00	248.00	398.00
Total	.	80.00	17.00	77.00	278.00	452.00

The combined variables of mobile network operators that the respondents are a customer of and under which type of contract their mobile service consumption is based show that the sample collected is an adequate representative of the Albanian market. The company with the majority of subscribers in the sample is Vodafone since 61.5% are currently its subscribers. The mobile provider with only 4% in the Albanian market is similarly represented by 3.76% of the respondents. Almost 80 participants are clients of Telekom Albania and Eagle Mobile, equally; which is the only difference from the real market picture where Telekom Albania has the most shares.

On the other hand, customers with a post-paid contract are a minority in Albania because of the economic conditions of the population. Most of the SIM cards in usage are used as a prepaid card where "pay-then-you-spend" seems to be the most convenient moto in public.

Table 4- Frequency of Contracts Types [source: own]

Contract Type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Post-paid	54	11.9	11.9	11.9
	Prepaid	398	88.1	88.1	100.0
	Total	452	100.0	100.0	

In the survey sample, 88.1% have a prepaid SIM card in comparison to only 11.9% of the respondents using a post-paid SIM card by their mobile network providers.

Variable: Mobile type

One question of the survey asked the users to identify the type of their mobile device they're currently using their SIM card because this will modify their needs for the types of mobile communication services. On the other hand, we can use this variable to make a statistical inference on the level of technology that Albanians are using as their daily communication tool.

Table 5- Frequencies of Mobile Types [source: own]

Mobile Type	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Android	243	53.76	243	53.76
SimplePhone	45	9.96	288	63.72
Smartphone	25	5.53	313	69.25
iOS	139	30.75	452	100.00
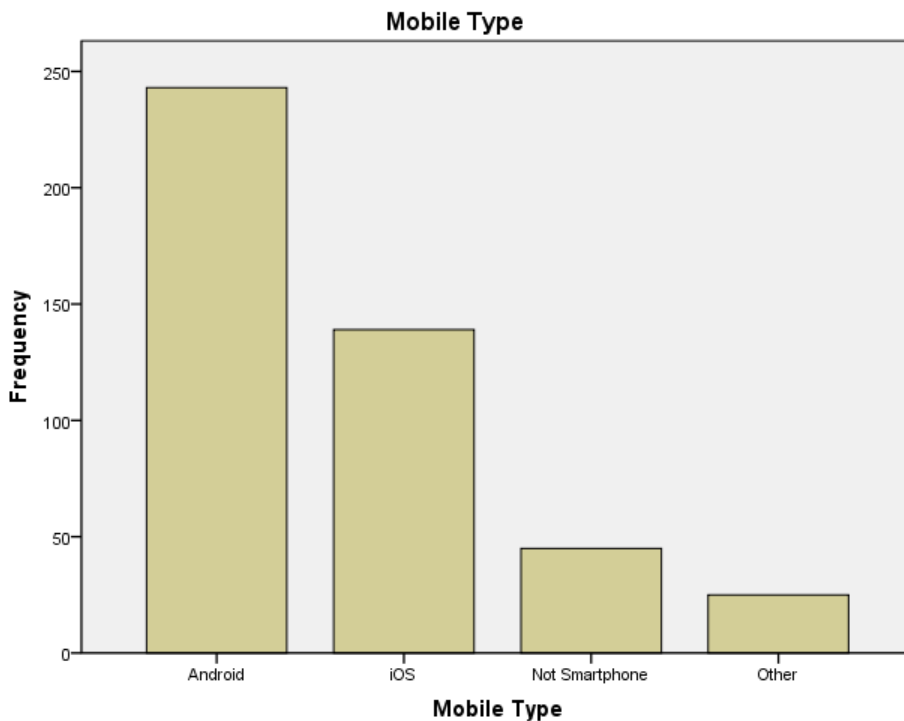
Figure 9- Bar Chart of Mobile Types [source: own]

When dealing with categories that classify individuals into a population, it is possible to make an inference on the proportion in each category from the sample. Approaches to this problem follows these steps:

1. Initially, it is necessary to estimate the frequency percentage of that category.

2. Test the hypothesis through one-sample tests of proportions with z-statistic or the p-value method to accept or reject the null hypothesis.

By performing the one-sample test of proportions, we define the null hypothesis:

H_0: The real proportion of people having an Android mobile in Albania *is not different* from 53.76% using an 95% level of confidence.

H_A: The real proportion *is different from* 53.76%.

Binomial Proportion		Test of H0: Proportion = 0.5376	
Mobile Type = Android			
		ASE under H0	0.0235
Proportion	0.5376	Z	0.0005
ASE	0.0235		
95% Lower Conf Limit	0.4916	One-sided Pr > Z	0.4998
95% Upper Conf Limit	0.5836	Two-sided Pr > |Z|	0.9996
Exact Conf Limits		Exact Test	
95% Lower Conf Limit	0.4904	One-sided Pr <= P	0.5185
95% Upper Conf Limit	0.5843	Two-sided = 2 * One-sided	1.0000

Table 6-Results from SAS [source: own]

After performing the test in the software, we compare the generated p-value=0.5185 with our alpha level of 0.05. Since p-value is greater than the alpha level, the null hypothesis can be accepted. Therefore, it is accurate to state that with 95% confidence, the proportion of people having an Android in Albania is not statistically different from 53.76%.

Variable: Occupation type

Another nominal categorical variable that gives an aspect into the lives of mobile users is their occupation type. This variable contained four major categories, without identifying their professional skills, as can be seen in the table below. Following it, these categories are illustrated in the bar chart:

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Table 7- Frequencies on occupation [source: own]

Occup

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed	208	46.0	46.0	46.0
	Self-employed	46	10.2	10.2	56.2
	Student	156	34.5	34.5	90.7
	Unemployed	42	9.3	9.3	100.0
	Total	452	100.0	100.0	
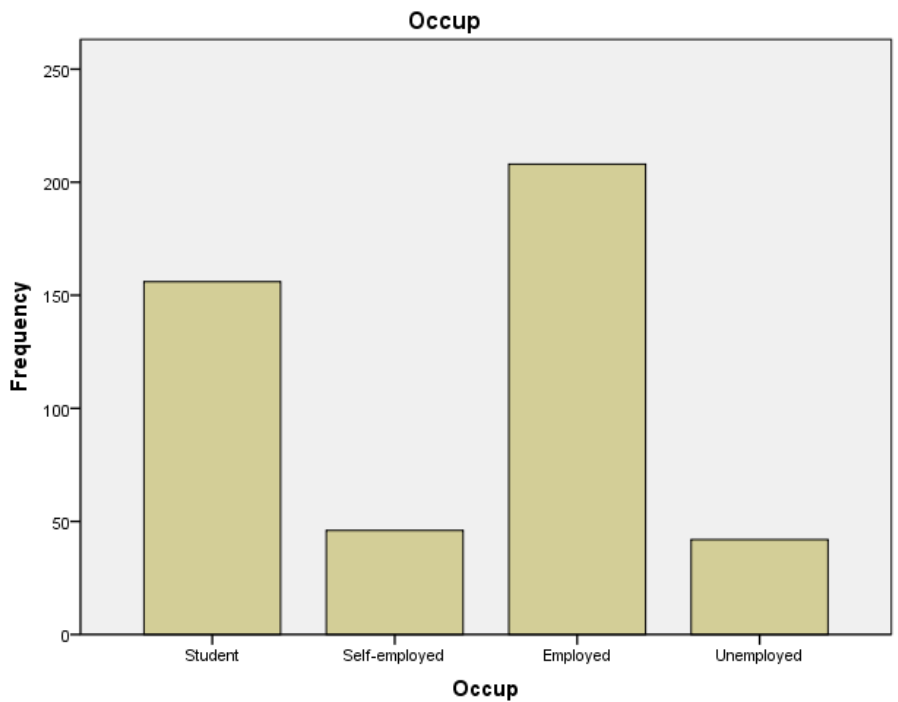
Figure 10 - Bar chart on Occupation [source: own]

It can be observed that the number of the employed people is almost the same as the number of people who are full-time students and not working anywhere. On the other hand, 9.3% of the respondents in the sample are unemployed and similarly a 10.2% of them are entrepreneurs and working in their own business or as freelancers on their set of skills.

Variable: Gender

The respondents' numbers were in a proportion of 63.9% female and 36.1% males when identifying themselves in this variable. The pie chart illustrates easily the sample gender proportions.
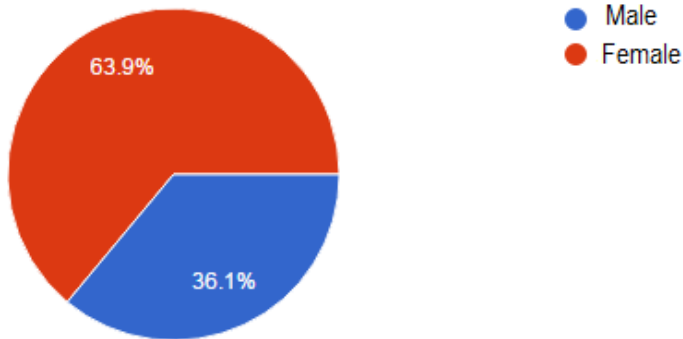
Figure 11-Pie chart on Gender [source: own]

Variable: Occupation and Monthly Expense Categories

Table of Occupation by Expenses				
		Expenses		
		<1000	**>1000**	**Total**
Occupation				
Unemp_Stud	**Frequency**	134	64	198
	Expected	110.83	87.173	
Empl_SelfEm	**Frequency**	119	135	254
	Expected	142.17	111.83	
Total	**Frequency**	253	199	452

Statistic	DF	Value	Prob
Chi-Square	1	19.5835	<.0001
Phi Coefficient		0.2081	

For further analysis by using 2x2 contingency table, we decided to merge some similar categories. We merged unemployed customers with students and self-employed customers with employed customers. At the other side, we made two new categories for amount of expenses/spending, where first category represents those customers who spend up to 1000 ALL

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in a month for mobile services, and second category represents those customers whose expenses are more than 1000 ALL.

We employed Chi-Square test and defined our hypothesis:

*   H0: There is no relationship between Expenses and occupation of customer.

*   There is relationship between Expenses and occupation of customer.

From the table, above we can see that p value is less than 0.001, $\alpha = 0.05$, $p < \alpha$, so our null hypothesis does not hold, and we accept our alternative hypothesis which means that there is relationship between Expenses and occupation of customer.

Phi coefficient is 0.2081 and shows that there is moderate dependency among variables.

Column 1 Risk Estimates						
	Risk	ASE	(Asymptotic) 95% Confidence Limits		(Exact) 95% Confidence Limits	
Row 1	0.6768	0.0332	0.6116	0.7419	0.6068	0.7413
Row 2	0.4685	0.0313	0.4071	0.5299	0.4059	0.5319
Total	0.5597	0.0233	0.5140	0.6055	0.5126	0.6061
Difference	0.2083	0.0457	0.1188	0.2978		
Difference is (Row 1 - Row 2)						

Column 2 Risk Estimates						
	Risk	ASE	(Asymptotic) 95% Confidence Limits		(Exact) 95% Confidence Limits	
Row 1	0.3232	0.0332	0.2581	0.3884	0.2587	0.3932
Row 2	0.5315	0.0313	0.4701	0.5929	0.4681	0.5941
Total	0.4403	0.0233	0.3945	0.4860	0.3939	0.4874
Difference	-0.2083	0.0457	-0.2978	-0.1188		
Difference is (Row 1 - Row 2)						

Odds Ratio and Relative Risks			
Statistic	Value	95% Confidence Limits	
Odds Ratio	2.3753	1.6137	3.4962
Relative Risk (Column 1)	1.4445	1.2278	1.6995
Relative Risk (Column 2)	0.6082	0.4821	0.7672

Now we can answer the question what is probability for customers who don't work (students and unemployed customer) to have their expenses only up to 1000 ALL.

We could divide number of these customers which belongs to these category, by their total number (134/198=0.6767) or simply read it from table above where we can see Colum 1 and Column 2 Risk Estimates. So further, we can see that there is 46,85% probability that people who work will spend up to 1000 ALL, or there is 32,32 % chance that people who don't work will spend more than 1000 ALL.

Also, if we are talking about **relative risks**, we can see that there is 1.4445 times probability that if the customer doesn't work that he will spend up to 1000 ALL.

4.2.2. Ordinal Variables

One other type of variable which is qualitative because is used to describe a quality that is not measurable by numbers, is also the ordinal variable. The main difference is that "if there are at least three levels, and if every reasonable person would place those levels in the same (or the exact reverse) order, then the variable is ordinal. „ (Seltman, 2015).

For ordinal variables, we can perform some addition analysis as illustrated in this section.

Variable: Education level

The categories of this variable are implicitly ordinal because each category represent some level of the common education system, where people can only qualify and participate in the next one, after having successfully finished the previous level in a certain educational institution. Education level of the respondents is important in our sample of mobile subscribers. A highly educated customer is assumed to have clear and better understanding of his rights as a consumer, is often more informed and generally makes better decisions while demanding more strongly the needs and requests by the service providers.

The complete education system in Albania can be categorized in five levels and their respective expected duration in years: elementary school (9 years), high school (3 years), bachelor (3 years), masters (1.5 -2 years) and doctoral studies, PhD (3 or more years). From the table of frequencies, it is important to notice that all categories are represented in our survey sample. The inclusion of people who have only completed (or are currently continuing) studying in elementary school can be attributed to the fact that 14-year-old children today own a SIM card purchased under the authorization of their parents, but they are the direct users of the mobile services provided by the network operators.

Table 8-Frequencies of education [source: own]

Education

	Frequency	Percent	Valid Percent	Cumulative Percent
Elementary	27	6.0	6.0	47.1
HighSchool	52	11.5	11.5	58.6
Bachelor	186	41.2	41.2	41.2
Master	176	38.9	38.9	97.6
PHD	11	2.4	2.4	100.0
Total	452	100.0	100.0	
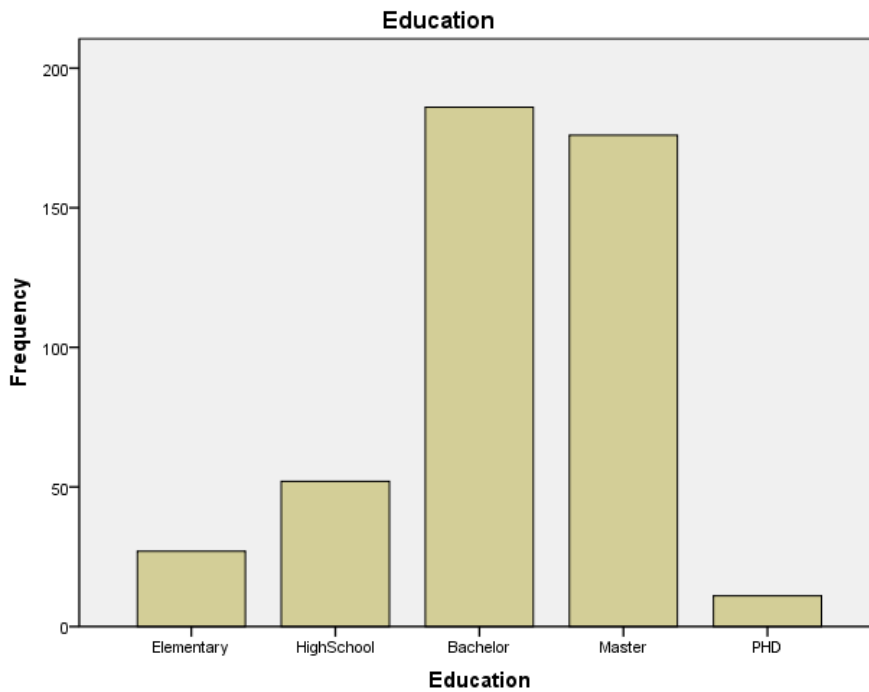
Figure 12- Bar chart of education [source: own]

On the other hand, more information can be easily obtained by the visualization of previous table through the bar charts. Most of the respondents (around 80%) are continuing their studies either in bachelor or master level, which provides us with a satisfying level of assurance in their accurate perception and thus validity of answers.

Variable: Monthly Calls and Gender

Table of Gender by Monthly_Calls						
		Monthly_Calls				
		<60	60-120	120-180	>180	Total
Gender						
Female	**Frequency**	56	54	57	122	289
	Expected	57.544	49.232	61.381	120.84	
Male	**Frequency**	34	23	39	67	163
	Expected	32.456	27.768	34.619	68.157	
Total	**Frequency**	90	77	96	189	452

Statistic	DF	Value	Prob
Chi-Square	3	2.2929	0.5139
Likelihood Ratio Chi-Square	3	2.3150	0.5097
Mantel-Haenszel Chi-Square	1	0.0019	0.9651
Phi Coefficient		0.0712	
Contingency Coefficient		0.0710	
Cramer's V		0.0712	

Dependent variable: Length of Monthly calls (4 categories)

- o 1st category: <60

- o 2nd category: 60-120

- o 3rd category: 120-180

- o 4th category: >180

Independent variable: Gender (2 categories):

- o 1st category: Female

- o 2nd category: Male

We want to check if there is relationship between the length of monthly calls and gender, or is there possibility to find causal relationship between the length of calls by knowing the gender of customer. Again, we employed **Chi-Square test**, and defined our null and alternative hypothesis as follows:

- H_0: There is no relationship between Length of Monthly calls and gender.

- H_1: There is relationship between Length of Monthly calls and gender.

As we can see from the table above, our **p** value is 0.5139, which is bigger than significance level α = 0.05, so our null hypothesis holds.

So, we made our conclusion, that there is **no statistically significant relationship** between Length of Monthly calls and gender.

Variable: Monthly Calls and Gender

Table of Occupation by Expenses						
			Expenses			
		<500	500-1000	1000-1500	>1500	Total
Occupation						
Unemployed	**Frequency**	18	18	6	0	42
	Expected	4.8319	18.677	14.681	3.8097	
Student	**Frequency**	14	84	51	7	156
	Expected	17.947	69.372	54.531	14.15	
SelEmp	**Frequency**	5	16	16	9	46
	Expected	5.292	20.456	16.08	4.1726	
Employed	**Frequency**	15	83	85	25	208
	Expected	23.929	92.496	72.708	18.867	
Total	**Frequency**	52	201	158	41	452

Statistic	DF	Value	Prob
Chi-Square	9	67.5995	<.0001
Likelihood Ratio Chi-Square	9	57.6690	<.0001
Mantel-Haenszel Chi-Square	1	32.5281	<.0001
Phi Coefficient		0.3867	
Contingency Coefficient		0.3607	
Cramer's V		0.2233	

Dependent variable: Expenses (4 categories)

- o   1st category: <500

- o   2nd category: 500-1000

o 3rd category: 1000-1500

o 4th category: >1500

Independent variable: Occupation (4 categories):

o 1st category: Unemployed

o 2nd category: Student

o 3rd category: Self employed

o 4th category: Employed

We employed **Chi-Square test**, and defined our hull and alternative hypothesis as follows:

- H_0: There is no relationship between Expenses and occupation of Customer.

- H_1: There is relationship between Expenses and occupation of Customer.

$p < 0.001$, $\alpha = 0.05$, $p < \alpha$ → H_0 does not hold.

We made conclusion that: **There is relationship between** Expenses and Occupation of Customer, so if the customer is student, unemployed, self-employed or employed it will have some influence on its expenses range)**.**

We can see from the table above that **Cramer's V** coefficient is **0.223** which shows us that there is **moderate dependency** among these two variables.

4.2.3. Numerical variables

Numerical variables can take as values all kinds of numerical values: integer, positive, negative, decimal etc., and they can be used to quantitatively describe a measurable dimension of an observed phenomenon.

Variable: Age

In the data collected by the survey, the users could define their age by a number and not limited to pre-made groups of ages. Therefore, age is a numerical continuous variable. There are more

statistical measurements used to describe a quantitative data. Graphically, its values and the corresponding frequencies are illustrated in a histogram.
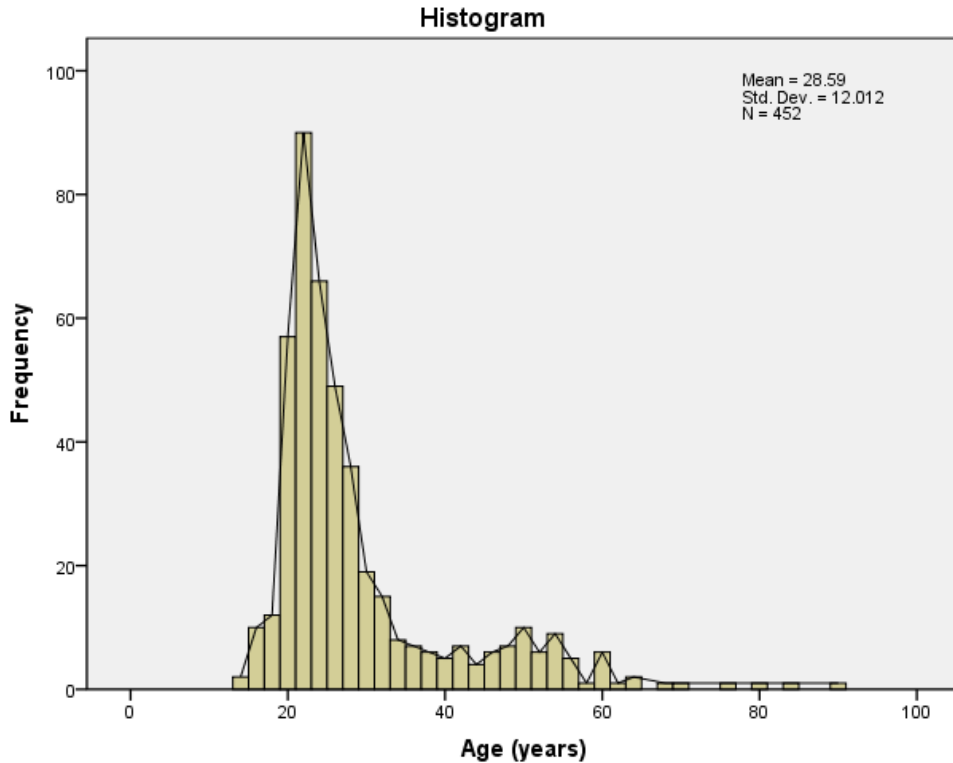
Figure 13- Histogram of Age [source: own]

A summary of the main statistics for this variable is given in the table below. Again, the survey covered a wide range of ages to ask for their opinion as a customer of mobile services by Albanian network operators, with minimum age of 14 years old, and the maximum value of 90 years old. As mentioned in the survey description section, the participants were contacted personally and were kindly asked to share the survey with everyone around them, relatives, friends, colleagues, which would explain how our online conducted questionnaire reached a 90-year-old mobile subscriber.

The mode is 22, meaning that the dominant age is the young generation. The average participant in our sample is almost 29 years old (mean = 28.59). Statistics of skewness and kurtosis are measures of relative symmetry. Since these values are different than zero, it means that this numerical variable is not normally distributed. A positive value on skewness (1.915) shows that the distribution of age in our sample is more shifted to the left, towards to smaller values. A

positive value on the kurtosis (3.882) means that the distribution has a relatively high peak compared to a normally distributed sample. Therefore, age in this sample is asymmetric.

Table 9 - Statistics for Age

N	Mean	Median	Mode	St.Dev	Variance	Skewness	Kurtosis	Range	Min	Max
452	28.59	24	22	12.012	144.283	1.915	3.882	76	14	90

Variable: Likert-scale variables

The rest of the variables in this study are numerical and vary on a range from 1 to 5. The variables they are assigned to describe, are not exactly measurable in a precise manner, rather than by their opinions or feelings. Thus, when choosing the level 1 on the variable, it should be interpreted that the respondent was in full accordance with the presented meaning of the item and on level 5 he/she was in complete disagreement. The values in between show the increasing level of disapproval with the stated variable.

The values assigned by each participant will be used to determine significant relationship between the variables and the construction of a statistical model. Here is a summary of their descriptive statistics:

Table 10 - Summary Descriptive Statistics [source: own]

Construct	No.	Variable	Question	Mean	Std. Dev
Customer Satisfaction	1	CS_Dec	Good decision my MNO.	2.19	0.936
	2	CS_Expect	Fulfils my expectations.	2.45	1.057
	3	CS_Need	Completes my needs.	2.29	0.966
Corporate image	4	Img_ind	Good image to me.	2.10	0.909
	5	Img_pub	Good image to public.	2.04	0.840
	6	Img_comp	Good image vs competitors.	2.19	0.950
Service Value	7	SerVal	Affordable services	2.61	1.147
Service Quality	8	SQ_Rel	Reliable services	2.06	0.939
	9	SQ_Emp	Personal attention to me.	2.01	0.912
	10	SQ_Resp	Fast and responsive.	1.99	0.860

	11	SQ_Asur	Professional and trustworthy	2.08	0.895
	12	SQ_Tang	Nice buildings and offices.	1.73	0.816
	13	SQ_Netw	Network is good and wide.	2.02	0.940
Attraction of Alternatives	14	Alt_Sat	Same satisfaction with other.	2.92	1.026
	15	Alt_Choi	Good alternative MNO.	2.94	1.004
Switching Intention	16	SI_Prob	Most likely I would switch.	3.15	1.028
	17	SI_Reg	Regret to be with my MNO.	3.83	1.105
Customer Loyalty	18	CL_Rec	Would totally recommend.	2.28	0.978

4.3. Exploratory factor analysis

To explore the appropriateness and the strength of the relationships between the values assigned by respondents and the targets constructs, two main statistical procedures will be performed and their results displayed: exploratory factors analysis (EFA) and confirmatory factor analysis (CFA). The software is SPSS by IBM and its other related statistical tool SPSS Amos. The main source followed upon for performing correctly the analysis was "Structural Equation Modelling with AMOS" (Byrne, 2001).

Exploratory factor analysis was done through the maximum likelihood estimation on the total sample size of 452. Out of 18 items and, customer loyalty was not analysed because it is a one-item construct. However, the remaining 17 items were grouped in 5 main constructs. The other one-item construct in our study was Service Value, but the exploratory factor analysis showed that it was grouped better with the Service Quality items. The summary below shows the factor loadings for each of the items and the Cronbach's alpha value to test for the reliability. After that, two additional measures for internal consistency and reliability of scale were added: CR (composite reliability) and AVE (average variance extracted).

Table 11-Factor loadings and consistency indicators [source: own]

Construct	Item	Cronbach's alpha	Lambda	CR	AVE
Customer Satisfaction	CS_Dec	0.841	0.844	0.91	0.79
	CS_Expect	0.836	0.914		
	CS_Need	0.834	0.911		
Corporate image	Img_ind	0.788	0825	0.716	0.565
	Img_pub	0.771	0.659		
	Img_comp	0.798	0.531		
Service Value	SerVal	0.754	0.823	0.882	0.525
Service Quality	SQ_Rel	0.849	0.657		
	SQ_Emp	0.820	0.866		
	SQ_Resp	0.816	0.858		

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	SQ_Asur	0.822	0.642		
	SQ_Tang	0.855	0.580		
	SQ_Netw	0.847	0.578		
Attraction of Alternatives	Alt_Sat	0.757	0.627	0.793	0.871
	Alt_Choi	0.646	0.898		
Switching Intention	SI_Prob	0.719	0.557	0.721	0.922
	SI_Reg	0.694	0.540		

The calculated composite reliability values were all above the recommended level of 0.50, thus meaning that all items had good reliability. The same is true for AVE that reaches values above 0.50 which measures and proves the convergence validity. Other measures can be by verifying that the values in the table of the communalities are all above an assigned threshold of 0.3 (generated table is found in the appendix).

4.4. Confirmatory Factor Analysis

The CFA for our model was performed through the SPSS AMOS software. The tests were run multiple times to ensure that the only the necessary best factors were left in the model.

The first step was to build a measurement model based on the pattern matrix from the exploratory factor analysis. The graphical model can be found in the appendix. It is important to notice that our survey contained no missing data because all the respondents were obliged to complete everything in order to reach the end of the survey. Complete dataset is the primary requirement on performing a model fit during the CFA.

During the tests, the standardized residuals covariance between all the items were being checked to ensure that none of the values were above 2.58 in an absolute scale. Modifications were done in the model, such as the variables "Service Quality – Empathy" and "Service Quality-Tangibles" were causing many covariance and was decided it was best to be omit from the model. Their effect was better represented through the other variables to which they showed high covariance. So, "service empathy" was associated with "service responsiveness" and this can be interpreted by the respondents as a similar factor. If the employees are dealing with my requests as fast as possible it shows that their services are designed to care about the customer as an individual with a personal value.

The matrix with the standardized residual covariance that resulted in the definitive model did not contain any values higher than 2.58 (it can be found in the appendix).

The five latent variables or the constructs were covaried together. When the relationships are defined, the fitness of the model needs to be examined through some standard measures as below:

Table 12- Model fit measures

	Absolute fit measures				
	Chi-Square	df	p	GFI	RMSEA
Total model	185.831	79	0.000	0.945	0.055

The GFI (goodness of fit index) was devised by Jöreskog and Sörbom (1984) for Ml and Uls estimation, and generalized to other estimation criteria. GFI is less than or equal to 1. A value of 1 indicates a perfect fit. In our case, its value of 0.945 shows a satisfactory goodness of fit for the proposed model.

RMSEA means root mean square error of approximation. Practical experience suggests that feel that a value of the RMSEA of about .05 or less would indicate a close fit of the model in relation to the degrees of freedom. This is where PCLOSE becomes meaningful since it can be used as a "p value" for testing the null hypothesis that the population RMSEA is no greater than 0.05. (Browne and Cudeck, 1993).

Ho: RMSEA <0.05.

In our model, PCLOSE = 0.212 thus we can accept the null hypothesis and conclude that the generated RMSEA is significantly a close fit of the tested model.

5. Results and Discussion

After verifying that the variables in the study were appropriate to the proposed model, the final step is assigning their values and interpretation of the coefficients.

Table 13- Standardized Regression Weights

			Estimate
CS_Need	<---	Satisfaction	1.0
CS_Expect	<---	Satisfaction	1.115**
CS_Dec	<---	Satisfaction	1.025**
SQ_Netw	<---	SQuality	1.0
SQ_Asur	<---	SQuality	0.940**
SQ_Resp	<---	SQuality	0.907**
SQ_Rel	<---	SQuality	1.160**
Img_comp	<---	CorporateImage	1.0
Img_pub	<---	CorporateImage	0.920**
Img_ind	<---	CorporateImage	1.131**
Alt_Choi	<---	Altern_Attraction	1.0
Alt_Sat	<---	Altern_Attraction	0.640**
SI_Reg	<---	Switchintention	1
SI_Prob	<---	Switchintention	0.922**
Ser_Val	<---	SQuality	1.491**

These estimates give an important insight to our analysis and understanding of the customer preferences. The factors where the weight is 1.000 means that it was fixed during the calculations but it was not estimated.

For the rest, we can interpret them by looking at the latent variable and predicting how the effect on it, would be distributed along the variables connected to it, in consumers' perception. Additional attention should be paid to what the units on the variables represent. With each increase, the respondent's disagreement increases to that item.

So, for example, if the service providers realize that the overall customer satisfaction has increased 1 unit in the scale, meaning the customers are generally less satisfied with the

company, this would reflect in the customers' expectations to decrease more, by 1.115 points that the company is able to fulfil their expectations.

In the case of the service quality construct, when the overall level of service quality is perceived to be lower by 1 point in the scale, the most significant effect will be noticed in the reliability aspect of the service quality. Customers will disagree by 1.16 points in the scale that the services they are using are reliable anymore.

As for the corporate image, if this construct increases by 1 unit, it will be transmitted in the individual perceptions of the company image by 1.131 in the disapproval scale. This effect is higher than the image in overall consumers or the relative image among competitors.

Another interesting conclusion can be draw for the competitiveness in the mobile service sector. If the general attraction to alternative operators increases by 1 unit, meaning that the costumers disagree more about finding themselves attracted to competitor operator, the perceived satisfaction by these alternatives only decreases by 0.64. Thus, even though they do not feel attracted at that moment, does not imply that in the same level they do not think about being as satisfied with another company.

When the switching intention of the customer decreases by 1 unit, almost in the same level of 0.922 points will decrease the probability that they think about switching operator.

Finally, when service quality is in total perceived to have not improved, so with a 1 unit increase in this latent variable, then it has a very high influence in the way customers perceive service value, because they disagree more strongly by a shift of 1.491 in the scale. This means they will be less satisfied with the prices they are paying for the services because they believe the quality is not so much worth it.

5.2. Regression model

Since the most influential variables were identified, it is possible to construct a multiple linear regression model to put these variables to explain now the Customer Loyalty.

This variable was measured by one item in our survey which asked whether they would recommend their mobile service provider to their friends, relatives or colleagues. Positive worth-of-mouth marketing is what increases more the value of a loyal customer to the companies. On the other hand, even though it is not common, it is still possible to use one-item scale measurement for a variable. This happens when obtaining a general view of the construct, therefore a single-item global rating method is often adequate for the purpose (Diamantopolous & Fuchs, 2009). So, the linear regression equation proposed is:

Customer Loyalty = β_1 CS_Expectations + β_2 Image_Individ + β_3 Service_Value + β_4 Switching_Probability

After estimating the equation with the data set in the SPSS software, the coefficients are displayed and they are all statistically significant with a p-value < 0.000. The model has a R-Square of 0.64 meaning that the variability in predictor variables can explain 64% of the variability of the dependent variable Customer Loyalty.

The coefficients show each the effect they have on the dependent variable. We could interpret the meaning of the negative sign in front of the coefficient in Switching Probability. It is correct because the relationship between these variables is negative. It means that 1 point increase in the scale, that is the less probable customers see their switching operators, will contribute to 0.167-point decrease in scale, so customers are more loyal and more likely to recommend their operator to companies.

Table 14- Regression coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
4	(Constant)	0.961	.172		5.580	.000
	CS_Expect	0.293	.039	0.317	7.471	.000
	Img_ind	0.317	.042	0.272	7.613	.000
	Ser_Val	0.184	.035	0.216	5.234	.000
	SI_Prob	-0.167	.032	-0.175	-5.145	.000

a. Dependent Variable: CL_Rec

6. Conclusions

Customer relationship management has always been the core of business conduct, especially in the services sector. Nowadays, with the fast development of technologies, mobile communication companies are on the spot of customer service and satisfaction because communication has become one of the basic needs in our lives.

Given the high demand and competitiveness, it is important to understand the customers' needs and behaviour to be able to increase their loyalty. Efforts to satisfying and attaining a loyal customer are much more rewarded than the efforts in attracting new ones. A research into the current trends in the mobile industry was presented initially. Another part of the literature review included findings into customer loyalty incentives. In the second part, this thesis focused to explore the market of telecommunication in Albania, through a customer survey over all the mobile network operators. A wide range of questions related to customer characteristics, services consumption as well as their opinions on services of their current provider were included.

Later, descriptive analysis on the sample were conducted, showing that the average mobile subscriber in Albania is 29 years old, uses a prepaid card on an Android device, and if employed, has a higher chance of spending more than 1000 Albanian lek monthly in the mobile services. The most used services are calls and internet data exceeding 180 minutes and 1G per month, but they are not so interested in short text messaging.

Among the factors that drive most their satisfaction level with their mobile company is when the company meets their expectations, provides service reliability, good value and affordability, and its more important that the company has a good image to themselves. Tangibility of the services such as the buildings and offices appearance did not show to be a differentiating factor so companies should not spend more in their facilities but invest in customer care, because when customers perceived to have been served as fast as possible correlated with the factor of empathy and personal attention.

This factor is crucial because at the chance that a customer believes he will be equally or even more satisfied with another company, than the alternatives start to be more attractive. It is a positive indicator that majority of people consider direct complaints to the company when they have some issues or concerns. Mobile Number Portability has been a means to search for a new operator, but the majority have entered the company as new subscribers. It is worth mentioning that the category of people who are clients of the same company for more than 5 years is the one with the highest frequency, which shows for a tendency into market stability and saturation.

Loyalty in Albanian subscribers is influenced by both satisfaction factors and their switching intention. However, in general, Albanian mobile customers are moderately loyal to their companies and would recommend to their social groups. This is also confirmed by the question if they regret being in their current company, because on average they would tend to disagree with this fact.

As a recommendation to mobile operators, it could be suggested that they pay more attention to customer's needs by training the staff to be approachable and at their top performance when dealing with their requests and complaints. By rewarding loyal customers and exceeding their expectations with "surprise" promotions, they would gain significantly and increase their loyalty level, which in the other hand would be translated into positive influence among peers and an improved corporate image.

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8. Appendix

Table 15- Communalities for EFA

Communalities

	Initial	Extraction
CS_Dec	.715	.757
CS_Expect	.686	.709
CS_Need	.652	.691
Img_ind	.698	.720
Img_pub	.584	.546
Img_comp	.550	.511
Ser_Val	.603	.617
SQ_Rel	.533	.543
SQ_Emp	.627	.721
SQ_Resp	.654	.759
SQ_Asur	.560	.592
SQ_Tang	.322	.325
SQ_Netw	.442	.432
Alt_Sat	.277	.323
Alt_Choi	.479	.743
SI_Prob	.465	.489
SI_Reg	.474	.520

Extraction Method: Maximum
Likelihood.
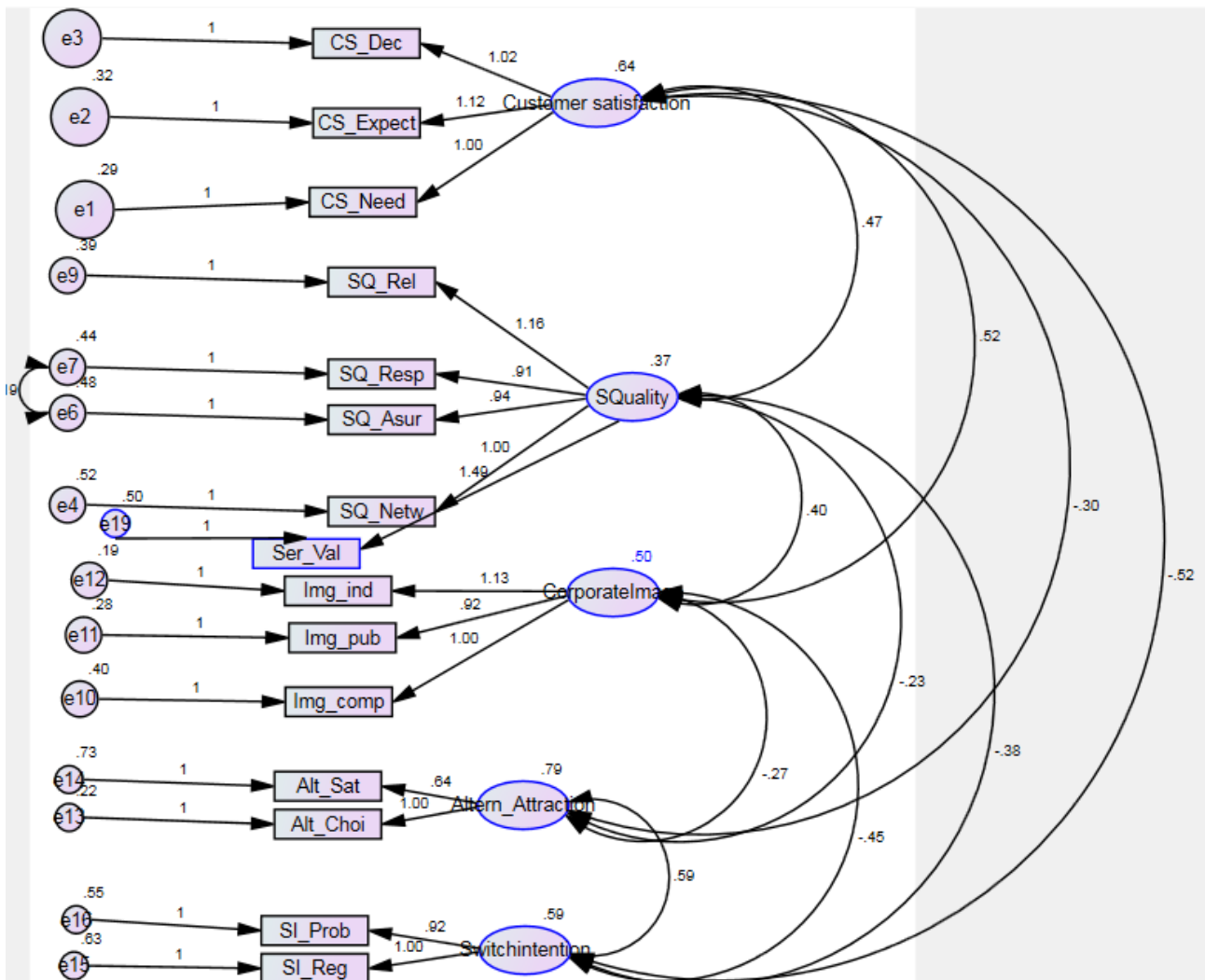
Figure 14 - Model fit generated AMOS

	Ser_Val	SI_Prob	SI_Reg	Alt_Sat	Alt_Choi	Img_ind	Img_pub	Img_comp	SQ_Rel	SQ_Resp	SQ_Asur	SQ_Netw	CS_Dec	CS_Expect	CS_Net
Ser_Val	.000														
SI_Prob	-.754	.000													
SI_Reg	.798	.000	.000												
Alt_Sat	1.110	.090	-.224	.000											
Alt_Choi	-.142	-.974	.971	.000	.000										
Img_ind	.316	-.853	-.311	.649	-.467	.000									
Img_pub	-.421	.308	1.497	1.511	1.106	-.231	.000								
Img_comp	-.563	-.341	.970	.615	-.924	-.445	1.489	.000							
SQ_Rel	.366	-.721	.273	.553	-.101	-.209	-.407	-.950	.000						
SQ_Resp	-.718	-.724	-.103	.388	-.844	-.157	1.314	1.264	.613	.000					
SQ_Asur	-.789	-.974	-.167	.998	-.523	-.285	.246	1.349	.161	.000	.000				
SQ_Netw	-.971	.687	1.205	1.335	.364	-.503	1.097	1.227	-.193	1.213	2.035	.000			
CS_Dec	-.086	-1.309	.120	.779	-.982	.612	-.192	-.021	-.005	-.137	-.079	-.138	.000		
CS_Expect	.807	-.448	1.300	.267	.436	-.204	-.806	-.465	.447	-.720	-.064	.059	-.290	.000	
CS_Need	.178	-.366	1.048	1.605	.345	.312	.101	-.558	-.412	-.569	-.813	-.114	-.099	.549	.0(

Figure 15- Standardized Residual Covariances

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Table 16 - Frequencies of Complain Types

Complaints

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Direct	305	67.5	67.5	67.5
	Group	76	16.8	16.8	84.3
	Media	6	1.3	1.3	85.6
	None	65	14.4	14.4	100.0
	Total	452	100.0	100.0	
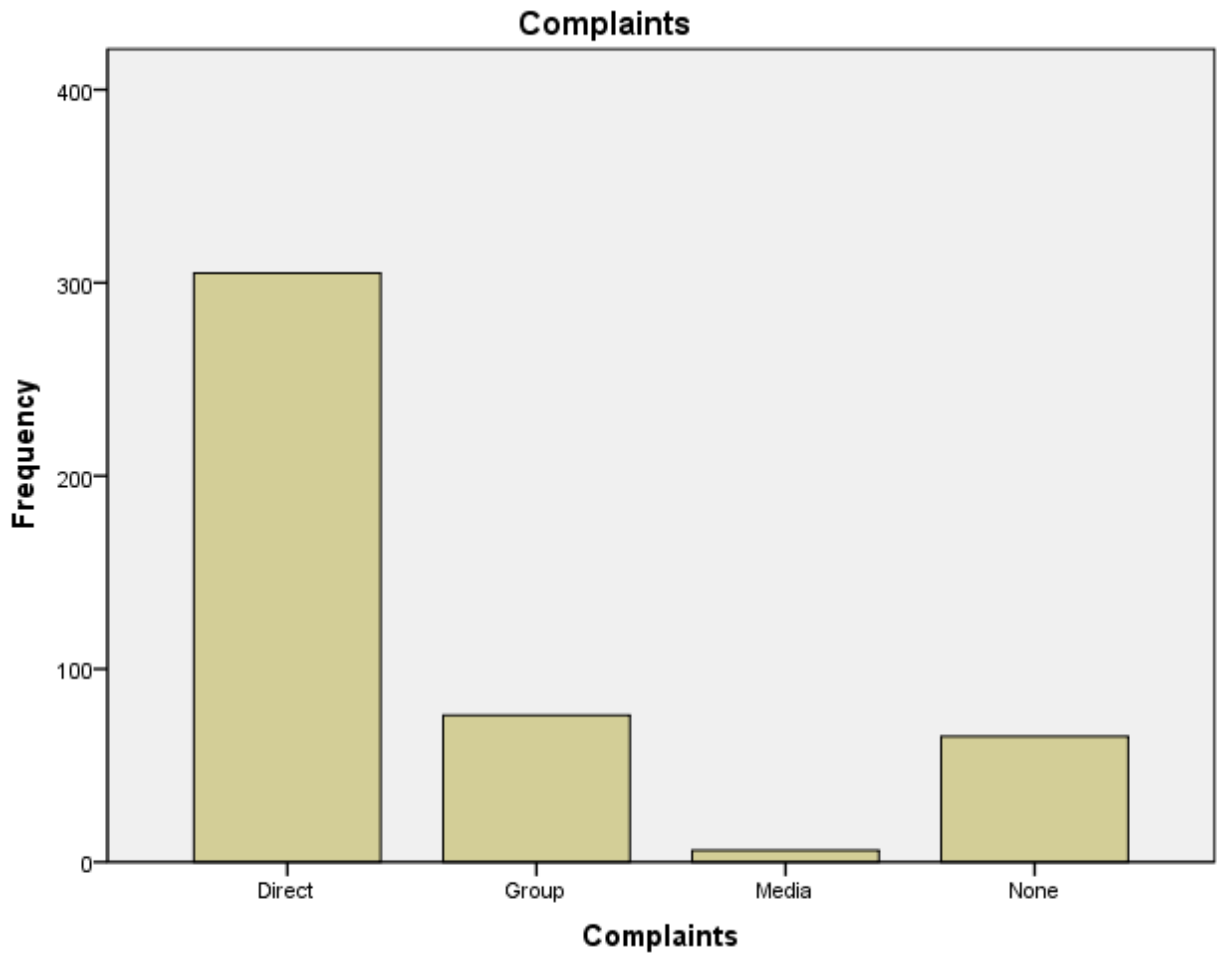
Figure 16- Bar Charts of Complaints

Table 17 - Frequencies of Subcription Time

Subscription

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<1 yr	60	13.3	13.3	13.3
	>5yrs	234	51.8	51.8	65.0
	1-3yr	89	19.7	19.7	84.7
	3-5yr	69	15.3	15.3	100.0
	Total	452	100.0	100.0	
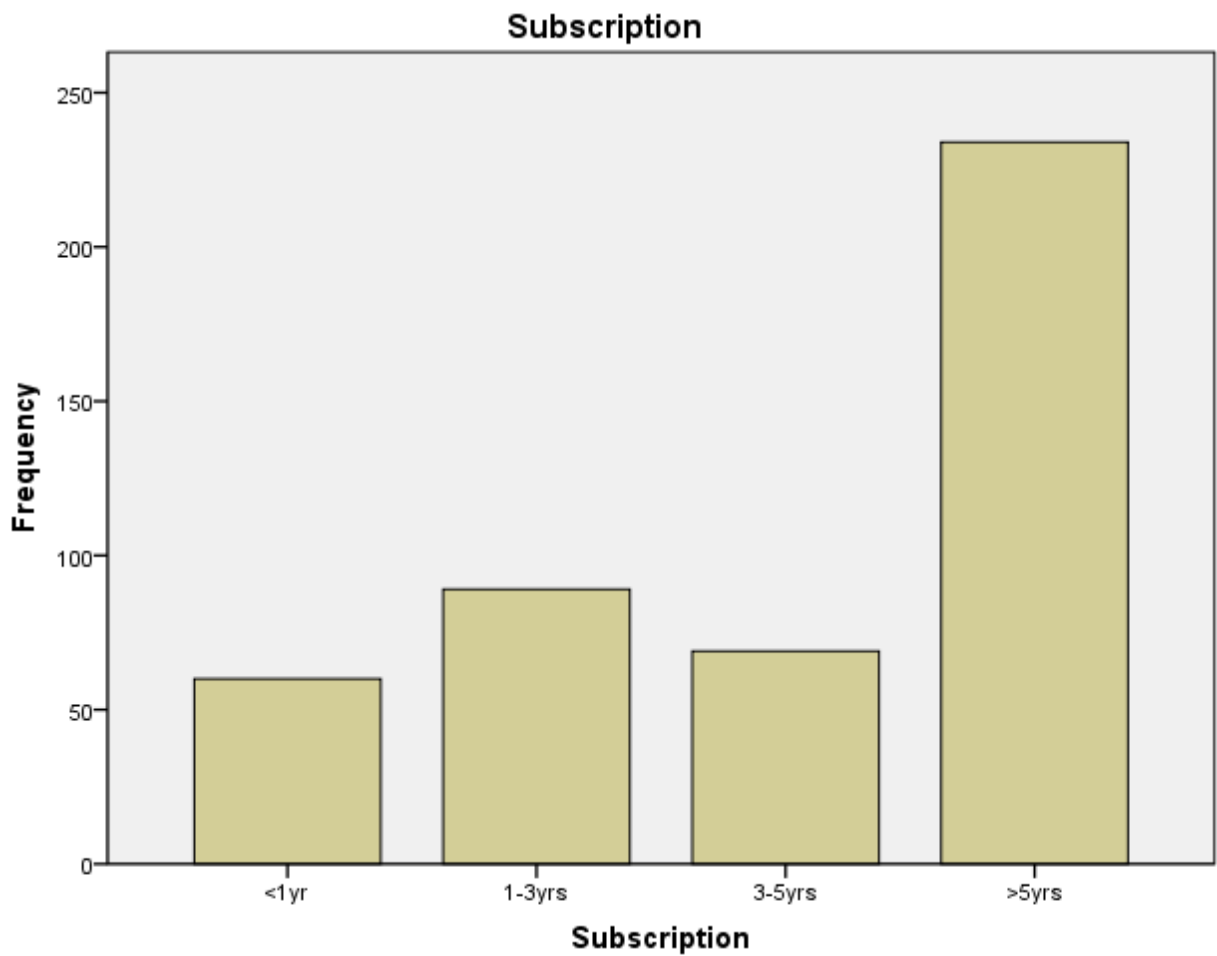
Figure 17 - Bar chart of Subcription time

Table 18 - Frequencies for Monthly Calls

AM_Call

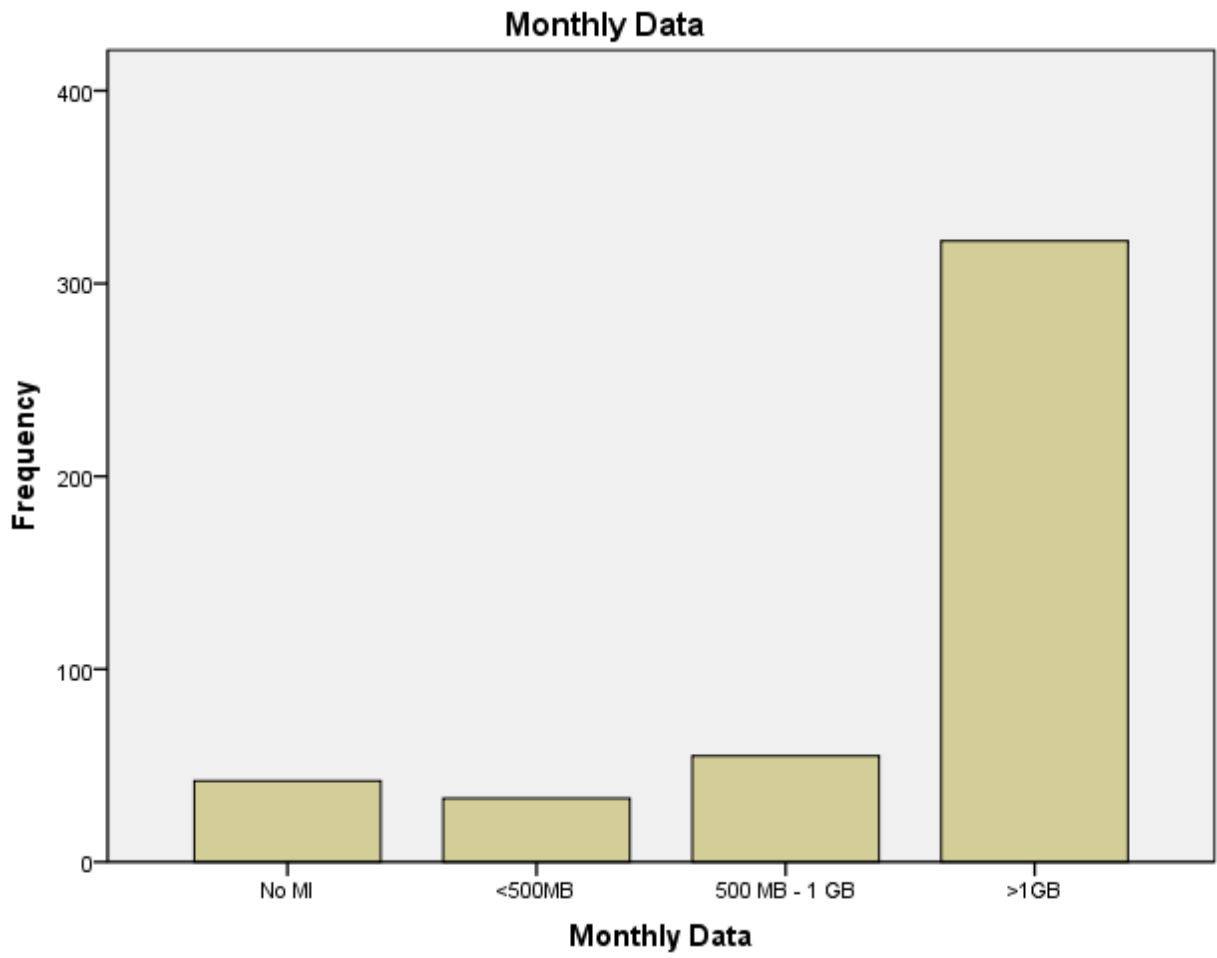|		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<60min	90	19.9	19.9	19.9
	>180min	189	41.8	41.8	61.7
	120-180mi	96	21.2	21.2	83.0
	60-120min	77	17.0	17.0	100.0
	Total	452	100.0	100.0	
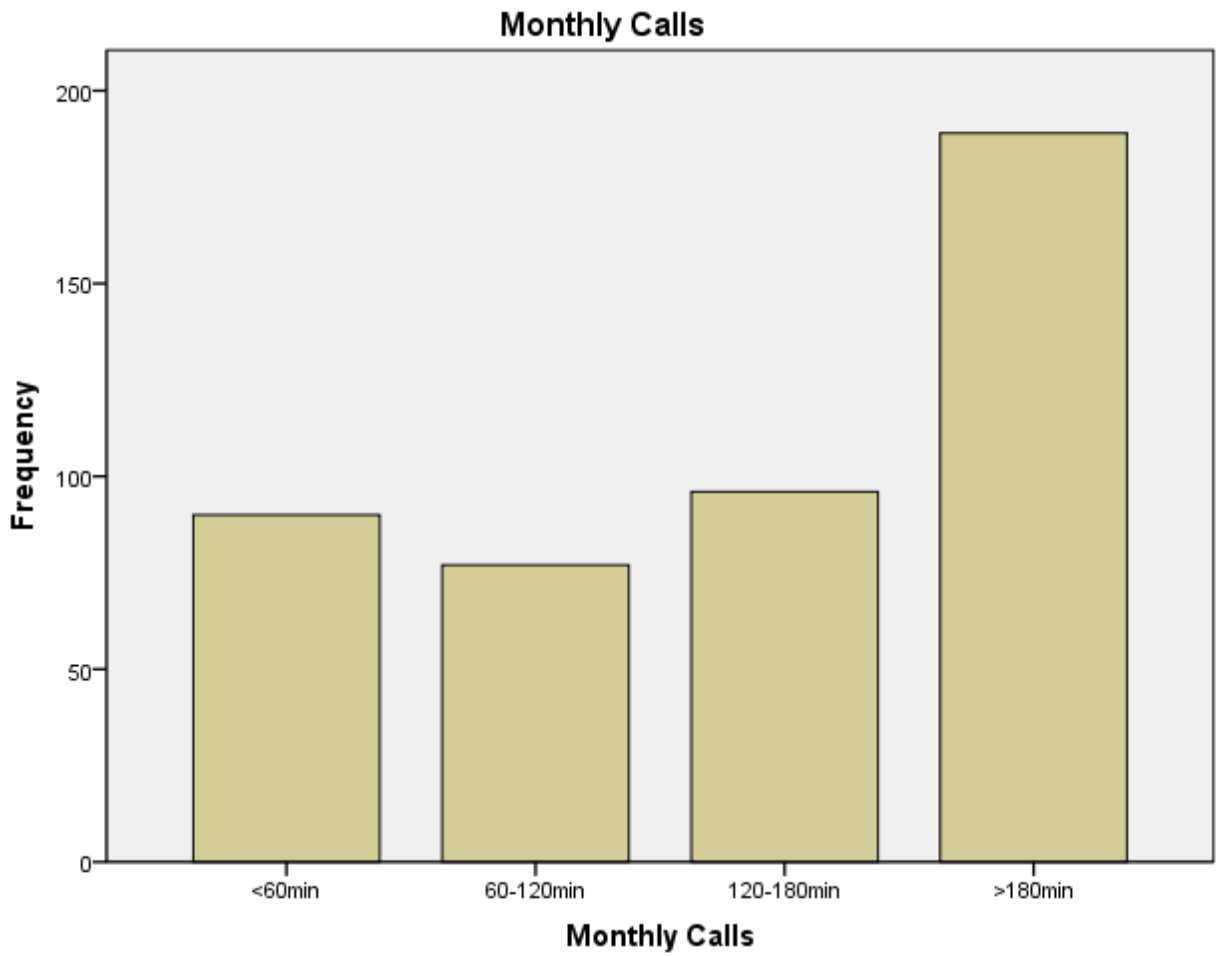
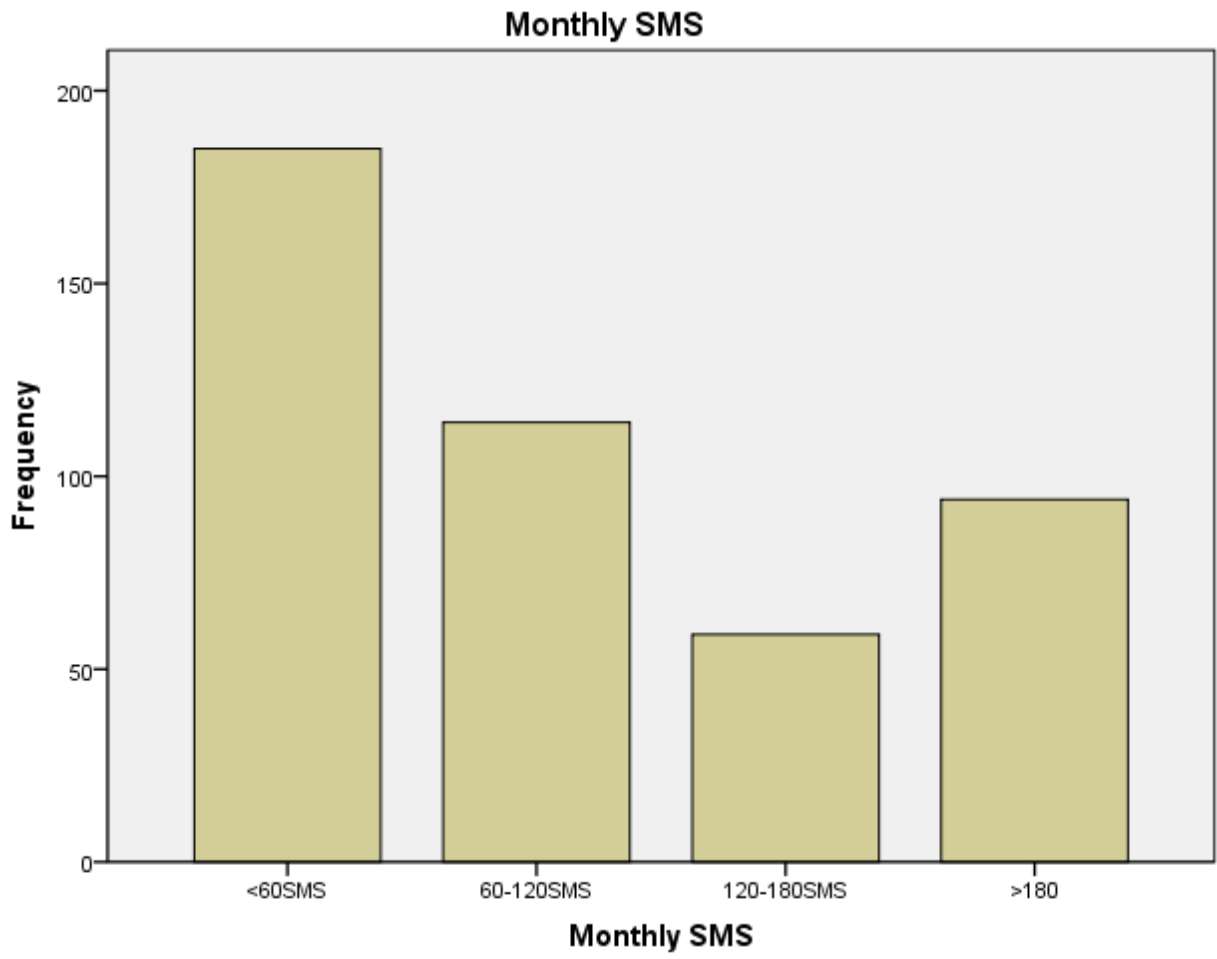**Figure 18- Bar Chart for Monthly Calls**

Figure 19 - Bar chart for Monthly Data

Figure 20- Bar chart for monthly SMS