

T.C.  
ISTANBUL AYDIN UNIVERSITY  
INSTITUTE OF SOCIAL SCIENCES



**THE RELATIONSHIP BETWEEN PRICES AND CUSTOMER LOYALTY IN  
TELECOMMUNICATION SECTOR IN TURKEY**

**MSc. THESIS**

**Ahmed Fady MOHAMED FAWZY EL-HENDAWY**

**Department of Business Administration  
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**Thesis Advisor: Assoc. Prof. Dr. Erginbay UGURLU**

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T.C.  
İSTANBUL AYDIN ÜNİVERSİTESİ  
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## **DECLARATION**

I hereby declare that all information in this thesis document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results, which are not original to this thesis.

**Ahmed Fady MOHAMED FAWZY EL-HENDAWY**

## **FOREWORD**

It gives me great pleasure in acknowledging the support and help of Assoc. Prof. Dr. Erginbay Ugurlu. I consider it an honour to work with him as this thesis would not have been possible unless his dedicated, continuous & valuable support, helpful feedback and beneficial guidance provided during the preparation stage of this thesis which facilitates completion of this thesis in a professional manner.

This thesis is dedicated to my parents who have given me the opportunity of an education from one of the best institutions and provide necessary support throughout my life in order to achieve a high educational status which it benefits my professional life, accordingly I am very proud to share the credit of my Master certificate with my family

June, 2019

**Ahmed Fady MOHAMED FAWZY EL-HENDAWY**

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## **ABBREVIATIONS**

**IR** : Inflation Rate  
**NMC** : Number of Mobile Customers  
**REV** : Revenue  
**WOM** : Word of Mouth

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## **THE RELATIONSHIP BETWEEN PRICES AND CUSTOMER LOYALTY IN TELECOMMUNICATION SECTOR IN TURKEY**

### **ABSTRACT**

Customer Loyalty is very important aspect in telecommunication sector because customer loyalty measures the relationship between customer and organization. Customer loyalty defined as number of customer shares of specific brand and customers repurchasing frequently the same product without changing the brand to another competitor's product that provides same product with same service and quality. The aim of our research is to discuss about customer loyalty in telecommunication sector in Turkey. Nowadays Turkey has 79 million subscribers. There is currently three GSM firm in Turkey which are Turk Telekom, Vodafone, and Turkcell. In this research two of them are used which are Turk Telekom and Turkcell. The data period is 2012Q1-2018Q4 which is consisted of 56 observations. At first to measure the customer loyalty we use number of mobile customer of the companies, secondly we use inflation to use price of the tariffs. We estimate panel data regressions which are Ordinary Least Squares, fixed effect model and random effect model. The results show that inflation has no effect on number of mobile customer variable which is the proxy of customer loyalty. This result show that increasing price has no effect on number of customer thus shows the existence of customer loyalty.

**Keywords:** *Customer Loyalty, Telecommunication Sector, Panel Data Analysis*

## **TÜRKİYE'DEKİ TELEKOMÜNİKASYON ŞİRKETLERİİNDE MÜŞTERİ SADAKATI İLE FİYATLAR ARASINDAKİ İLİŞKİ**

### **ÖZET**

Telekomünikasyon sektöründe müşteri sadakati çok önemlidir, çünkü müşteri sadakati müşteri ile organizasyon arasındaki ilişkiyi ölçmektedir. Belirli bir markanın müşteri hisselerinin sayısı olarak tanımlanan müşteri sadakati ve markayı aynı hizmeti ve kalitesiyle aynı ürünü sağlayan başka bir rakip ürünyle değiştirmeden sık sık aynı ürünü geri satın alan müşteriler olarak tanımlanmıştır. Bu çalışmanın amacı Türkiye telekomünikasyon sektöründe müşteri sadakatini araştırmaktır. Günümüzde Türkiye'de telekomünikasyon sekktöründe 79 milyon aboneye bulunmaktadır. Türkiye'de halihazırda Türk Telekom, Vodafone ve Turkcell olmak üzere üç GSM firması vardır. Bu araştırmada bu firmalarda Türk Telekom ve Turkcell firmalarının verileri kullanılmıştır. Veri dönemi 2012'nin ilk çeyreği 2018'in dördüncü eçyreği olup gözlem sayısı 56'dır. Öncelikle ; müşteri sadakatini ölçmek için firmaların mobil müşteri sayısı, ikincisi olarak ise enflasyonu tarife fiyatlarının göstergesi olarak kullanıldı. Uygulama aşamasında panel Sıradan Enküçük Kareler, sabit etki modeli ve rassal etkiler modeli olmak üzere panel very modelleri tahmin edildi. Sonuçlar enflasyondaki artışım müşteri sadakatini ölçen müşteri sayısı üzerinde bir etkisi olmadığını göstermektedir, Bu sonuç fiyatların müşteri sayısını etkilemediğini yani müşteri sadakatının varlığını göstermektedir.

**Keywords:** *Müşteri Sadakati, Telekomunikasyon Sektörü, Panel Veri Analizi*

## **1. INTRODUCTION**

Customer loyalty is a very important aspect in business sector to measure organization performance because customer loyalty is described as the strong relationship between the customer and the organization. The research aim is to investigate factors affecting customer loyalty in the telecommunication sector in Turkey in terms of inflation, number of mobile customers, and revenue.

Customer loyalty is defined as the customer desire to repeat buying their preferred product instead of buying from other competitors that provide the same services and quality. There are factors that drive buyers to change to other competitors; for example: brand image, trust, and satisfaction in our research. There are only three factors going to concentrate on which are inflation, revenue and the number of mobile subscribers are selected these as factors because Turkey has the greatest number of telecommunication customers especially the mobile subscribers which approximately 73.87.321(Çavuş,2017) in Turkish telecommunication sector.

The three biggest telecommunication companies in Turkey are Vodafone, Turk Telekom, and Turkcell. In addition, these three companies have a big number of subscribers which differs annually. The importance of the research is to investigate if these factors, which are inflation, revenue, and mobile subscribers, will affect the loyalty of telecommunication customers. The data in the research is going to be collected from Turkish Statistical Institute to measure annually inflation rate to investigate if the gradually increasing in inflation will affect the loyalty of telecommunication buyers and this will let them think to switch to other company which provides good quality with cheap ways.

Moreover, to find if the price competition of the telecommunication services affect the loyalty of buyers which makes them change their usual companies to find suitable companies that offers same services with suitable prices.

The goal of the research is to find the number of mobile subscribers of three biggest telecommunication companies in Turkey which are Turk Telekom,

Vodafone, and Turkcell to investigate the reasons that let customer to move to other company and the relation of their loyalty towards the company.

The purpose of this thesis is to define customer loyalty and to study the relation between inflation, revenue, and number of mobile subscribers with customer loyalty in telecommunication companies in Turkey. In Turkey, there are three biggest telecommunication companies which are Turkcell, Vodafone, and Turk Telekom.

Every company in the market sector its target to satisfy their customer needs to increase their profit and their customer segmentation. If the buyers of that company did not satisfy and feel that company did not fulfils their needs, the buyers will move to other competitive company that provide same services with cheap prices. In addition, the history and popularity of the product is a very important factor in customer loyalty because, for example; “Apple product” mobile phones products, the buyers did not concern about the features and functions of the product rather than the mobile phone comes from Apple store that’s why customer are loyal to that company and did not move to other competitive markets.

Moreover, buyers who are usual customers of a certain product such as “dairy products”, it will be difficult for buyers to change to other companies and will be loyal to that company. In conclusion, the customer will be loyal to the company, the customer will trust in the function and features that the company will provide, for example, the fast food restaurants, the customer trusts in their fast food products that they are healthy food and did not harm buyers’ health, so they are lo loyal to these kind of products and did not change them, but if the buyers found that the restaurants did not apply the global quality of the food and caused to them diseases, they will think of moving to switch to other competitive food restaurants or organic food.

The two hypotheses that the research will discuss about is there a customer loyalty in the telecommunication sector and is there a positive relationship between revenue and number of customers. To investigate these hypotheses, we will use quarterly data of telecommunication sector of Turkey. There is currently three GSM firm in Turkey which are Turk Telekom, Vodafone, and Turkcell. In this article two of them are used which are Turk Telekom and

Turkcell. The data period is 2012Q1-2018Q4 which is consisted of 56 observations.

The table bellows shows name, definition and source of the variables. We use number of mobile customers of two biggest companies of three of Turkish GSM Company which are Tukcell and Turk Telekom. At first to measure the customer loyalty we use number of mobile customers of the companies. If the number decrease it will show there is no customer loyalty.

This thesis consists of five sections. The first section is introduction, the second section is literature review of previous studies and third chapter presents theoretical review about customer loyalty. Last chapter is chapter five and it concludes the thesis.

## **2. LITERATURE REVIEW**

Customer loyalty is a widely used topic in business research. customer loyalty is one of the objectives of customer relationship management. Also customer loyalty is related with a customer and companies. It has relation with persons, products or brands too. In these years in the business sector markets and firms have one of the same target that is to develop customer loyalty to have a constant growth or constant firm life.

Marketing literature customer loyalty is very important topic. Loyalty has been investigated over hundred years but customer loyalty is new topic for the business science. The emergence of the customer loyalty started after researches of customer behavior. It was started by brand loyalty then after this term loyalty was started to use.

Khadka and Mahrajan (2017) investigates the relation between two terms which are customer satisfaction and customer loyalty. The author uses buyers who are using travel services. In the research the survey developed based on qualitative and quantitative data by using questionnaire. The sample size of the survey was 50 questions, and the questionnaire is delivered by e-mail. The result shows that there is a positive relation between the terms which is mentioned in this paragraph.

Another research Tahmasby (2015) focuses on customer loyalty. The practical study analysed the estimation of the customer loyalty flows and process in Turkish language institutions. The author aims to estimate students studying in the Turkish language institute. In the research and the survey developed based on secondary and primary approaches. The survey questionnaire was close ended type. The sample size was 750 respondents. Finally, the results show that there is a relation between customer loyalty and customer satisfaction.

Also, research such as (Khoironi, Syah & Dongoran 2018) examined the relation of product quality, Brand Image and price partially about customer

loyalty and satisfaction. The author utilised buyers in UMKM customer of Emping Melinjo Industrial Sector in Banten Province. The research method was applied on 225 participants. The authors excluded the respondents who are not influenced by other variables. The outcome shows that there is a limited relationship between the customer satisfaction on the relation on product quality, Brand Image, and partially price that linked to customer loyalty.

Additional research such as Selvaraj and Krishnamurthi, (2018) aimed to investigate the influence of product, quality, and price on customer loyalty and customer satisfaction. The author engaged people who use after sale services of cars depending on three different kinds of economic car segments which are economic, premium, and super premium car segments. The survey method originated based on questionnaire, while the sample size of the survey includes 1085 participants. The results demonstrated that the affecting factors are product quality, and price fairly influences customer satisfaction and customer loyalty and, on the relation between customer loyalty and distinct car segments.

Other research like Usman and Rehman (2017) expressed that the major goal of study is to investigate the relation between customer satisfaction, price sensitivity and moderating impact of service quality in courier sector. The author applied the survey on employees and students and asked them about information related to economic and social customer satisfaction, price sensitivity and service quality. The applied survey method was based on questionnaire. The results showed that there is an opposite relation between the customer satisfaction and price sensitivity.

Additional research, Rasheed et al. (2015) investigated the relation of behaviour and goals on customer loyalty in banking sector. The author utilized buyers who are dealing with the banking services. In the research the survey depends on questionnaire method. The sample size is 496. The result showed that there is a strong relation between customer satisfaction and customer loyalty, as well as having a major consequence on customer loyalty.

In their (Virvilaite, Saladiene & Skindaras 2009) research, defined the relation between the price and loyalty in industry sector. The survey method used in the article was the questionnaire technique. The results showed that there is a relation between service prices and customer support. Also, the article

conclusions indicated that the factors affecting customer loyalty is price services, quality services, and customer services.

One research conducted by Selvi (2013) investigated the customer loyalty in Telecom industry. The analysis applied on people who are using mobile phones telecom services and internet services in India. The survey method used in the research was an online questionnaire. The results show that the buyers are loyal to the product of their company. Also, the telecom industry must concentrate more on their consumers.

Another research by Asfar (2014) examined the impacts of factors such as price, Brand Image, quality, and trust on consumer purchasing choices. The author engaged people who are using beauty products in Pakistan. The survey method used in the research was the questionnaire. The collected values were 450 respondents. The result shows that the recognized quality has a strong impact on the variety choices in Pakistan.

The research conducted by Yilmaz (2012) investigated the relation between customer loyalty and corporate social responsibility in Telecommunication sector in Turkey. The author utilised people who are using the telecommunication services. The method used in the research was the questionnaire techniques. The sample size was 300 telecom buyers. The results showed that there are strongly related to corporation social responsibility and customer loyalty.

A dapper research (Munari, Ielasi & Bajetta 2018) the research goal is to examine the case of the organization and evolution of the operations and its impact on customer satisfaction in Italian banks. The author used buyers who are dealing with the Italian banks. The survey method used in the article was the questionnaire. The illustration size was 92 banks responded. The author found that, the relation exists between the customer stratification and line manager activates and not with the staff activates.

Malley (1998) mentioned about another topic about customer loyalty in American Airlines. The author in his find relationship between customer loyalty programs and customer loyalty. The author uses four different categories of

loyalty. The author suggested that customer loyalty programs are very important to build customer loyalty.

Oliver (1999) discusses about customer loyalty in market firms. The author finds a link between customer loyalty and customer satisfaction. The author uses analyses method to confirm that customer satisfaction is related to customer loyalty. The conclusions of study showed that there is a strong connection between customer satisfaction and customer loyalty.

For another dimension in different business filed as the authors Bowen and Chen (2001) discussed about customer loyalty in hotels for USA. The authors in their paper develop and achieve features that will increase customer loyalty. The authors used 564 observations from hotels database using focused groups and mail surveys. The authors found there is a nonlinear relationship between customer loyalty and customer satisfaction.

### **3. CUSTOMER LOYALTY**

#### **3.1 Definition of customer Loyalty**

There are many different definitions to define customer loyalty. In generally it can be categorized it in three categories. These categories are “behavioural measurements”, “attitudinal measurements”, and “composite measurements” Bowen and Chen (2001).

The first category focused on continuity and repetition of purchase behaviour Bowen and Chen (2001), but this category has a problem that if the purchase is repeated, we cannot say that the reason is common trust.

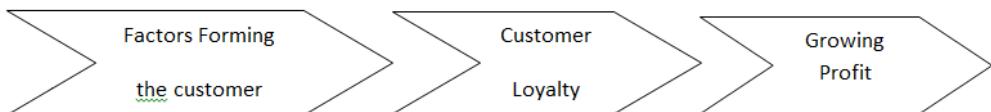
The second category is about attitudinal measurements. Attitudinal measurements utilize attitudinal data to revert emotional and psychological linked with loyalty Bowen and Chen (2001). In Addition attitudinal measurement focuses on feeling of loyalty , commitment , and allegiance Bowen and Chen (2001) , but this category has two problems in which that if customer has a positive attitude towards product or service but the product or service is expensive or customer did not use it this approach measure loyalty as unidimensional (Bowen & Chen, 2001) .

The third category is composite measurement of loyalty. Composite measurement of loyalty combines behavioural and attitudinal loyalty Bowen and Chen (2001). Composite measurements focus on customer product desires, tendency of brand switching, repetition of purchases, number of product purchases Bowen and Chen (2001), but this category has a problem which that when customer recruit for research list the research control over Bowen and Chen (2001)

Nowadays the big competition between companies in the market makes customer loyalty is a very important aspect to decide the success of the organization due to each organization want to competitive how to attract buyers and increase their customer segmentation. In the previous studies scientists were

concentrating on customer loyalty depends on the product or services quality, in other researches companies start to depend on customer loyalty to attract more buyers due to the competition in the market. According to Gonring (2008) in the middle of 1980s, the business researchers define loyalty by which is rooted product quality or service quality.

In addition, there are four factors that affect customer loyalty which are satisfaction, Brand loyalty, Resistance to change, and trust. Foremost, satisfaction is a key reason in customer loyalty because when customer is satisfied with the product and the product quality satisfy his needs it will be very difficult for the customer to think of switching to another product. Moreover, on hand a big relation between customer satisfaction and customer trust was that when customer gets satisfied with a product, he will always buy this product from that company without thinking of changing it, so the customer will be loyal to the company and starting to subscribe in loyalty.



**Figure 3.1:** Model of customer Loyalty

**Research Khadka and Maharjan (2017:7)**

Figure 3.1 describes each process in customer loyalty and how each step is related to each other. As stated in the “customer loyalty” model factors forming customer loyalty understand the customer’s demands, needs, and demands. The company must be alert to price, promotion, service, and products in order to achieve the customer loyalty. By the same time to build satisfaction situation between the customer and the company is very important. Investing in customer loyalty leads to profit to the business such as increasing effectiveness and growing profit of the business

Some researchers, added new definition to loyalty which is called as a resistance to change. Considering the above discussions, regardless of any types of resistance to change there is a theory that says loyalty is positively linked to commitment and resistance to commitment change. Last factor in customer loyalty is trust. For example, if customer trusts in food qualifications products

and price of a fast food restaurant like “Burger King” the firm will always think of buying from the customer and will not change the organization due to the customers’ getting fulfilled from the benefits of qualifications of that restaurant.

In addition, in the electronic products such as “Apple Product”, the customer always trusts in the product and history of the company, so the customer will be interested in their product and will never switch to another company which means the customer will be loyal to the company.

Gwinner et al., (1998) assert that in the concept of customer loyalty trust has meaning too. The meaning of the trust is an advantage received by consumers. Also the advantage which is stated in this research is to relate the customer loyalty with exchange with the organization in the long term. In addition to that there are lots of research which have suggested that trust acts as a mediating variable in the satisfaction-loyalty relation

### **3.1.1 Phases of customer loyalty**

McMullan and Gilmore (2003) discuss the phases of customer loyalty and they defined it based on Oliver’s model Oliver (1999). They stated that the phases starts in Level 0. In this level customer has no information about the product and has no attitude to product. In the second level which is called Level 1 the cognitive dimension starts. In this level customer has set of beliefs. These beliefs may include that product has features which makes the product superior to rival products.

Level 2 is the phase of affective dimension. In this level customer develops an unfavorable or favorable attitude towards the product or service. In the next level in Level 3 customer is in the conative dimension. In this phase, customer behaves and whether they will repurchase. At last Level 4 is the level of the last phase, which is the actual behaviour phase. In Oliver, model, the customer has to be in these four phases in the development of loyalty. These four phases are Cognitive, affective, Conative and, actual.

McMullan and Gilmore (2003) summarize these phases. Cognitive phase’s antecedents are accessibility, confidence, centrality, and clarity. Cognitive phase’s sustainers are cost, benefits, and quality. Cognitive phase’s vulnerabilities are cost, benefits, and quality. Affective phase’s antecedents are

emotions, moods, primary, and satisfaction. Affective phase's sustainers are satisfaction, involvement, affect, liking preference, and cognitive consistency. Affective phase's vulnerabilities are dissatisfaction, persuasion, and trial.

Conative phase's antecedents are switching costs and sunk costs. Cognitive phase's sustainers are Commitment and cognitive consistency. Conative phase's vulnerabilities are persuasion and trial. Action phase's antecedents are inertia and sunk cost. Action phase's sustainers and vulnerabilities are the same, which are persuasion and trial.

Another approach there is a phase of cognitive loyalty, or loyalty based on brand trust only Dick and Basu (1994). Affective phase defined as an attitude toward the brand was developed based on a number of post-purchase satisfying usage occasions. More over conative loyalty described as loyalty influenced by a frequent number of positive post-purchase affect toward the brand. Conation, by definition, implies a brand-specific commitment to repeating buying the same product. Furthermore, action loyalty is the study of the method by which internal personal desires are converted to actions Dick and Basu (1994).

Cognitive phase, affective phase, conative phase, and action phase have a relationship with some factors. There is a framework which is developed to show the relationship between some factors, which are situational factors, social norms. Additionally, authors developed measurements to investigate relation to customer related altitude and repeating purchasing their favoured brands. The author found that there is a relation between customers' related altitude, their repeated purchasing brands, and customer loyalty. Also, the author highlighted the importance of successful management in customer loyalty.

Oliver (1997) discusses customer loyalty in the marketing sector. In the paper, the author finds a relationship between customer satisfaction and customer loyalty. Also, the author in his paper describes the phases that customer will be loyal and study how each phase related to customer loyalty. Additionally, the author mentioned that these phases are Cognitive, Affective, Conative, and Action. In his paper author explores the aspect of customer satisfaction and its effect on customer loyalty. The results showed that customer satisfaction is more worthy of customer loyalty in the marketing sector.

Furthermore, these phases have some characteristics. Cognitive phases have “advantageous qualities” and “features perceived”. Affective phases’ characteristics are “attachment” and “attitude toward brand established”. Conative phases have “commitment” or “plan to repurchase,” and the last phases, which are action phases’ characteristics are “strong eagerness to act”.

Research states that there are phases affecting and related to customer loyalty. These measurements are behavioural and attitudinal, cognitive, affective, conative, and action. Foremost, according to author McMullan (2005) investigated the complicated relation between behavioural, attitudinal, of customer loyalty. The survey method was a quantitative method based on multi-scale dimensions of customer loyalty. Results showed that the dependability of loyalty scale affected and related to customer loyalty.

In Addition, authors Kuusik and Varblane (2009) explored the main factors impacting customer loyalty in the Estonian telecommunication sector. The survey method was the experimental data. The sample size was 1000. Results showed that the honesty of the product is the major relation to behavioural loyalty and image producing is an essential tool for buyers. Waal and Heijden aim was to study the actual behaviours that are necessary to make customer loyalty. The survey method was the questionnaire. The results showed that there is eight behavioural aspects about customer loyalty. These behavioural aspects are the value of service, the ability of workers to bring the best quality, understating of workers toward buyers’ needs, and wants. Understanding of workers what buyer’s needs, acceptance of workers approaching buyers wishes, the kindness of workers against buyers, duty appearance of workers, at the end customer faithfulness against workers.

Second Phase affecting customer loyalty is Cognitive loyalty, many types of research discussed attitudinal loyalty and how is a relation to customer loyalty. Author Hsieh (2017) explored the relation of customer loyalty in the online to offline sample. The survey method was an online questionnaire. The observation size was 514. Results showed that exciting factors affecting Cognitive factors which affect customer loyalty.

Also, authors Sampath et al. (2013) identified the relations between cognitive and customer loyalty. The survey method was an online survey questionnaire.

Results showed that cognitive has a consequence of customer loyalty. Moreover, authors (Gallarza, Molina & Saura 2016) suggested causal samples to explore values relation customer loyalty toward cognitive a relation satisfaction. The sample size 820. Results showed that there is a relation between cognitive loyalty and customer loyalty. (Lam, Burton & Lo 2009) analysed different characters forecast factors relation to customer loyalty. The survey method was a mail survey. They find a similar result with Gallarza et al.

Other research authors Jones and Taylor (2012) investigate the relation between cognitive and customer loyalty. (Razzaq, Yousaf & Hong 2016) explored important feelings with another common feeling leads to loyalty goals

Besides the authors mentioned above, Nagoc et al. (2016) analyzed between cognitive and customer loyalty. The sample size 167. Results showed that cognitive has many relations to customer loyalty. Also, authors Bejou & Ennew (1998) accepted relations about cognitive and customer loyalty.

Furthermore, research authors Rowley and Farquhar (1999) investigated the idea of customer loyalty. The research method based on literature depended on authors Dick and Basu (1994) which investigated that there is a relation between cognitive and customer loyalty. Pérez and Bosque (2015) suggested the relation between cognitive and customer loyalty. The sample size was 648 from saving banks and 476 commercial banks. Results showed that cognitive is highly relation to customer loyalty.

Additional research authors Sampath et al. (2013) recognized the relations between cognitive and customer loyalty. The survey method was an online survey. Results showed that cognitive affect customer loyalty. Punyatoya (2018) investigated the impact of cognition in customer loyalty. The survey method was the questionnaire. The sample size was 334. Results showed that there is a relation between cognitive and customer loyalty.

Other phases which affecting customer loyalty is affective, conative, and action. According to research author (Giovanis, Athanasopoulou & Tsoukatos 2015) there is a relation between affective and customer loyalty. The survey method was telephone questionnaire. The sample size was 408. Results showed that there is a relation between affective and customer loyalty. Further research

author Izogo (2016) investigated how organizations impact customer loyalty with customer engagement. The survey method was questionnaire. The sample size was 138. Results showed that there is a relation between affective and customer loyalty. Numerous enquiries discussed about the relation between Conative, action loyalty and customer loyalty. According to authors Yavas and Babkus (2009) examined if several factors of loyalty relation customer segments loyalty. The survey method was the questionnaire. The sample size was 17034. Results showed that customer loyalty is positively correlated with conative and action.

### **3.2 History of customer Loyalty**

It is stated in the introduction that loyalty is very old term which has been used in the business literature. However, customer loyalty is a new but very important term in business researches. Because customer loyalty is used to measure the performance of the business. That is much research to study factors affecting customer loyalty.

Jacoby and Chestnut (1978) studied on a different topic about customer loyalty. In the paper, the authors defined only brand loyalty, which is related to customer loyalty. Authors defined loyalty as customers who are repeating purchasing their same preferred brand without considering any other competitive brands, and this is related to the definition of customer loyalty. In their research, the authors used an experimental design method to test the empirical side of factors affect scaling of brand loyalty. The authors found that there are three factors that effect measuring of brand loyalty, which are customers behavior, psychological behavior, and preferred brand behavior.

Customer loyalty has a different meaning in different periods of the world economy. In the previous sections of the thesis, we discussed customer loyalty from different points and for different periods. In the 1980s, researches investigated different kind of measurements about customer loyalty. Raj (1980) investigated a relationship between customer loyalty and brand loyalty and used TGI data. The author used 1000 sample products from popular brands. The results showed that there is a strong relationship between customer loyalty and brand loyalty. Another study focus on customer loyalty in the banking

sector. ( Jain, Pinson & Malhtro 1987) the authors discuss if there is a relation between some of the factors and customer loyalty such as customer behavior, customer responses, customer motivation, customer satisfaction, and customer recommendations. The results show that customer loyalty has a relationship between these variables. To do this analysis, they use survey methods and the method use questionnaire. In the survey, they used 281 respondents and find that there is a strong relationship between banking services and customer loyalty.

Measuring customer loyalty is an important key to understand more about loyal customers; understanding this vital segment is crucial to driving customer retention and profits.

Foremost author Biong (1993) discussed about customer loyalty in Norwegian supermarkets. The author focused on developing an understanding of the way the suppliers use of four marketing mix compounds, which are sales force, product, profitability, and marketing support and effect on satisfaction and loyalty. Also, in this research, the method is developed to measure the customer loyalty by using multiple regression analysis by a sample of Norwegian supermarkets. The results showed that satisfaction and loyalty is strongly related to the four marketing mix compounds.

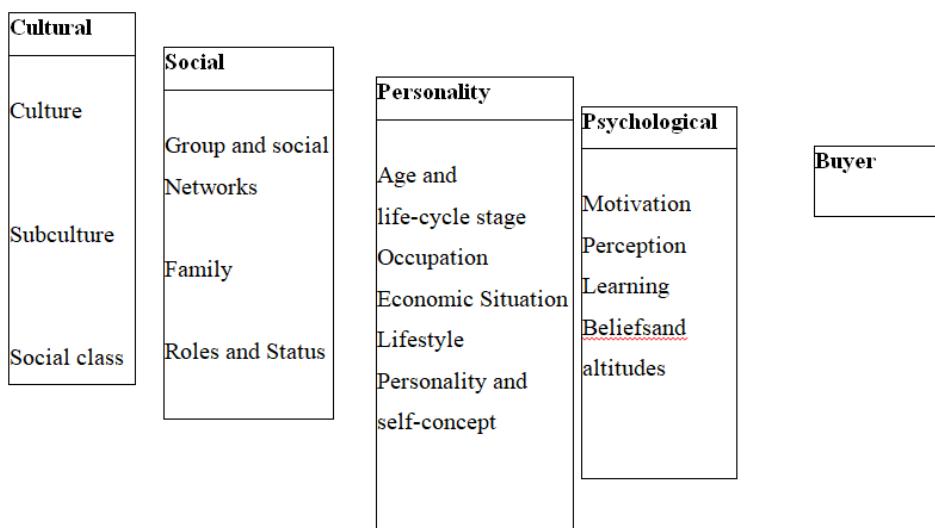
Dick and Basu (1994) discussed another topic about customer loyalty. In their paper, the authors stated that customer loyalty is related to customer's altitude and their repurchasing preferred brands. In Addition, the authors said that customer loyalty is affected by situational and social factors.. Authors developed measurements to measure the relationship between customer's related altitude and customer behaviour. The authors found that successful management strongly related to customer loyalty, including also the importance of situational and social factors are affecting customer loyalty.

As idiscussed earlier concerning customer loyalty from different points and for different periods, furthermore, Hallowell (1996) described customer loyalty in the banks sector in the USA. The author found a relationship between customer satisfaction and customer loyalty and customer loyalty in profitability. In his paper, authors use multiple measurements to measure loyalty, satisfaction, and

profitability. The author estimated that there is a strong relationship between loyalty, satisfaction, and profitability.

### **3.3 Factors Influence customer Loyalty**

The behaviour of the customers was related to selecting, repurchasing, and consuming of products and services that fulfill their daily demands, needs, and wants. There several factors that affect consumer behavior toward a product or service such as product quality, service, price, the emotion of the customer, customer personality and situational factors, and product characteristics are few of factors that affects customer satisfaction.



**Figure 3.2::** Factors Influencing Consumer Behaviour

**Research** Khadka and Maharjan (2017:10)

Figure 3.2 describes factors affecting consumer behaviours, which are cultural, social, personality, psychological, and buyer. Each factor of them consists of sub factors. Cultural factors include culture, social culture, and social class. Social factors include Group and social networks, family, roles and status. Personality factors include age and life-style stage, occupation, economic situation, lifestyle, personality and self-concept. The last factor is the buyer selection.

Cultural factors are about to understand the needs and behaviour of a customer. He needs, and behaviours are learned in early ages. It is learned from the social

environment of customer in other way we can define it as a cultural factor. These factors determine the learned values and perceptions of customers.

Social factors are about the buying behaviour of customers. Similar with cultural factors social factors are affected from social environment. Social environment comprises people such as family, friends and social networks. These social environments determine the shape of the people's personality therefore they have effect on customer behaviours.

Personal factors include age, occupation, economic situation, and lifestyle. Mainly low if the consumer has low income, he or she chooses to purchase inexpensive product or services. Also, lifestyle is one of the factors which are the subcategory of personal factors. The last factor is psychological factor and it is defined by motivation, perception, learning and some other factors related with them.

The factors that influence customer varied from some phenomenon. These phenomena are people and culture thus we say that people and culture have effect on customer behaviour. Nevertheless, if any market is perfectly customer oriented the service provider of the market treat a consumer like a psychologist to support them. It should not forget that if the factors are favourable the customer satisfaction aim of the firm can be achieved. To have achieved in the market in customer loyalty the main key is success in the market. Generally, in business literature we see that "brand image", "perceive value", "price", "health concern" and "quality influences" are the main important factors of customer satisfaction.

### **3.3.1 Customer Satisfaction**

Currently, customer satisfaction has become one of the most important aspects of the business sector because it is controlling the scale of trading and business. Customer satisfaction is defined as satisfying achievement, which occurs when customers feel that using preferred products satisfies their demands, wants, and daily needs.

Several authors defined the “customer satisfaction”, one of them, Oliver (1997), which defined customer satisfaction as the filling of pleasure and mentioned that satisfaction accordingly occurs when customers realize that their continuing use of selecting product meet their daily requirements, interests, and uses.

Customer Satisfaction has multiple definitions, and various descriptions, one of the well known declared is Hunt (1977), which described customer satisfaction as a type of customer consumption experience.

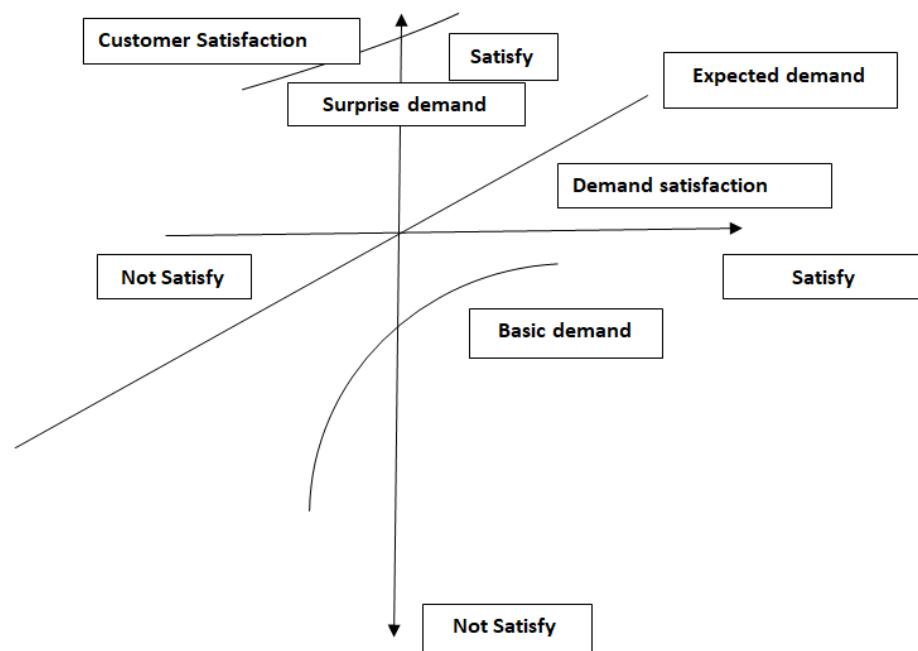
In this period, another contribution derived from another source which is the author Westbrokk (1980) introduced customer satisfaction as the customer experiences in consumption of the preferred product. In the same pathway, author (Swan, Trawick. & Carroll 1982) described the term customer satisfaction as the customer choices if the product is good or not and if it is suitable for the use.

Another author Oliver (1981), defined customer satisfaction as if the product is suitable for use or not depends on the psychology of customer and experiences.

Customer satisfaction can be defined in different aspects and different point of views, another pattern from Churchill and Surprenant (1982) as they explained the term customer satisfaction as a result of the consumer experience of using the product.

Another contribution derived from other foremost authors Westbrook and Oliver (1997) described the term customer satisfaction as the judgement of the

customer about selecting product after using it. In addition, author Oliver (1997) typically defined customer satisfaction as customer evaluation judgment after product selection regarding a specific purchase choice.



**Figure 3.3:** Describe customer Demand Level

**Research** Khadka and Maharjan (2017:20)

In Figure 3.3 customer demenad level is presented. In the figure relationship between customer satisfaction, basic demand, demand satisfaction, and surprise demand can be seen. The basic demand of any customer is considered service. If the demand is opposite satisfaction will be at a low level, on the contrary, if it is demand is in the same way satisfaction will be high and the customer will be very satisfied.

Khuong and Dai (2016) investigated the factors affecting customer satisfaction and customer loyalty. The survey method was the questionnaire. The example

size included 288 respondents. The results showed that there is a direct relationship between price, customer satisfaction, and customer loyalty.

Besides, authors (Shankar, Smith & Rangaswamy 2003) conducted research; the research found a relation between customer loyalty and customer satisfaction in an online and offline environment. The survey method was the questionnaire. The results showed that there is a relation between customer satisfaction and customer loyalty in the online and offline environment.

Although (Curtis, Abratt & Rhoades 2011)'s research investigated the relation between customer loyalty and satisfaction. The method used in the research was a quantitative method. The results showed that there is a strong positive relationship between customer loyalty and customer satisfaction.

Despite, there is a research (Odunlami, Mathew & A.O 2015) investigated the impact of customer satisfaction on customer loyalty. The survey method was the questionnaire. The results showed that the change between the satisfaction of customer and loyalty of the customer is highly related. Then the companies focus on customer satisfaction to make customers loyal.

Finally, researcher Bae (2012) examined the relation between customer satisfaction and customer loyalty. The survey method used in the research was the linear sample. The results showed that there is a relation between customer satisfaction and loyalty.

According to Sarfraz et al. (2018) who investigated the importance and relation of customer satisfaction between service quality and brand loyalty, corporate image and product loyalty, perceived value and product loyalty in four distinct service sectors of Pakistan. The survey method was questionnaire using 500 respondents. The results showed that the important role in customer satisfaction with service quality and brand loyalty, corporate image and brand loyalty, perceived value, and Brand loyalty.

Also, Wajeeha et al.(2018) investigated the factors that affect the customer satisfaction and customer loyalty in the telecommunication sector. The survey method was the questionnaire. The sample size was 406 respondents. The results showed that the trust and satisfaction have an important relation and positive relation with customer loyalty.

Despite, Amin and M (2016) investigated the internet banking service quality and its relation to electronic customer satisfaction and electronic customer loyalty. The survey method was the questionnaire. The sample size was 1000. The results show that there is a strong relation between internet banking service quality, electronic customer satisfaction, and electronic customer loyalty.

In Addition, Chiguvu and Guruwo (2015) conducted another research. The article investigated the relation of customer satisfaction on customer loyalty in the banking sector in Botswana. The survey method was the questionnaire. The results showed that there is a strong relation between customer satisfaction and customer loyalty.

However, Seines (1993) investigated the relationship between customer loyalty and satisfactionin marketing sector. The results showed that customer satisfaction is not forcing customer loyalty. Although, Canalejo.A & Río.J (2017) investigated the satisfaction and loyalty in tourism section. The survey method was the questionnaire. The sample size was 922. The results showed that there is a strong relation between customer satisfaction and customer loyalty.

There is a relation between the customer satisfaction and customer loyalty in business sector this was declared according to Blocker (2012), The survey method included analyses by structural sampling and data. The results showed that there is no relation between customer satisfaction and customer loyalty.

Thus, Ana et al.(2017) examined the influence of customer satisfaction on customer loyalty in retail sector. The survey method was based on European customer satisfaction index (ECSI). The results showed that there is a strong influence of customer satisfaction on customer loyalty.

Lyon's (2003) report found the influence of mass communication on customer satisfaction and customer loyalty. The survey method was questionnaire. The result shows that mass communication didn't influence the customer satisfaction on customer loyalty.

Many researches and studies addressed the relationship between customer satisfaction and customer loyalty, accordingly as one of these searchs as the author Silvestro (2002) found the relation between employee satisfaction and

loyalty. The survey method was an empirical study. The results showed that results showed there is a relation between employee satisfaction and loyalty for academics and managers.

In addition, Čater (2009) found a relationship between customer satisfaction and loyalty in the business-to-business market. The survey method was the questionnaire. The sample size was 477. The results showed that there is a strong relation between customer satisfaction and customer loyalty.

To define the strength of the relations between customer satisfaction and customer loyalty; therefore, according to Delcourt (2013) there is a relationship between customer satisfaction and loyalty. The survey method was the questionnaire. The sample size was 247. The results showed that the customer perception of employee emotional competences (EEC) has a positive relation on customer satisfaction and loyalty.

Although, (Chiou, Wu & Sung 2009), the factor impacts customer's satisfaction and loyalty regarding the online buying sites and online buying sellers. The survey method was an online survey. The sample size was 221. The results showed that there is a non-linear relationship between customer loyalty and customer satisfaction.

Moreover, Pantouvakis (2008) investigated the relation between customer satisfaction and loyalty in the transport sector. The survey method was questionnaire. The sample size was 388. The results showed that there is a strong relation between customer satisfaction and loyalty.

Indeed, Sharifi (2014) investigated the influence of relation of marketing that can less the mental conflict and how it relation the customer satisfaction and loyalty toward the roles of trust and mental conflict and trust. The results showed that there is a strong relation between satisfaction and customer loyalty.

The author, Martensen (2007) investigated the relationship between the customer satisfaction and loyalty in the mobile phone market for child's users whose ages are between 8-12. The survey method was an empirical study. The results showed that there is a weak relation between customer satisfaction and customer loyalty.

Celso Augusto de Matos (2009) investigated the relation between customer satisfaction and loyalty in balancing and settling the role of switching costs. The survey method was the questionnaire. The sample size was 7461 buyers. The results found that there is a strong relation between customer satisfaction and loyalty.

As resulted from various studies and researches that there is a direct relation between customer satisfaction and customer loyalty, one of these outcomes as acknowledged by the author Gobiraj (2011) that, there is a relationship between customer satisfaction and loyalty in supermarkets in UK. The survey method was questionnaire. The results found that the customer satisfaction has more relation on customer loyalty. Moreover, the author Aghdaie, Karimi & Abassaltin (2015) investigated the relation between customer satisfaction and loyalty. The survey method was the questionnaire. The sample size was, the respondent's size was only 224 respondents. The results showed that there is a strong relation between customer satisfaction and customer loyalty.

In Addition, the author (Moraga, Parraga & Gonzalez 2008) investigated the relation between customer satisfaction and customer loyalty by evaluating the products. The results show that there is a relationship between customer satisfaction and customer loyalty. Picón.A, Castro.Ignacio & Roldán.J (2013) investigated the relationship between customer satisfaction and customer loyalty. The survey method is a questionnaire by using 785 buyers of the products. They found similar results.

### **3.3.2 Brand image**

Brand image has an impact on customer perceptions of the communication thus it is an asset to any firm. It is also operation of the firm in many respects. In companies decision makers make so much effort to build the brand identity of their products. Also they use their sources to build their brand identity. They decide the shape of the brand, how should the customer feel when they contact with the brand, where should the brand be located in consumers' mind, and other associations

Brand image has significant importance on loyalty and has two effects on loyalty Kuusik (2007). First effect about the consumers' own identity. Identity

is related with brand preferences, both consciously and subconsciously. The second effect is related to social categories of the people. Customers can be evaluated the values and symbols of any good with other goods and also their own utility. After the process of this comparison, they can be prefer to be take an action with other customers who have similar image and values with them.

There are a lot of definitions to define brand image. Brand Image can be defined as group of relations customers hold in memory towards a brand Gwinner et al.(1998). Additionally brand image toward a product or brand focus on experiences, product, attributes prices, promotions packaging, user image, and user occasion Keller (1993) but brand image has a problem in which that image transfer of a target in sponsorship decision, sponsoring brand can help in the effect of transfer image process ( Martin and Stewart, 2001) .

From another dimension, Brand can be defined as a name, term, design, or symbol to deffrentiate and recognize similar products from competititors Kotler (2000). In Adition, image described as a process that the public distinguishes the company or its product Kotler (2000).

Customer's opinion regarding quality and benefits impact brand image. When customers perceive the quality or benefits of a product or service as high, it strengthens brand image. According to Ogba and Tan (2009), there is a relationship between Brand Image and customer satisfaction. The survey method was questionnaire and the author collects data from 250 custmer. The results showed that Brand Image has positive effect on customer loyalty.

In addition, the authors (Jin, Lee & Huffman 2012) investigated the influence of brand image on customer loyalty in restaurants and they find that brand image influences customer loyalty.

Several studies aimed to investigate the influences of brand image benefit on some factors. Factors are customer satisfaction and loyalty intention which is directly and indirectly rooted customer-made model.

However, authors Minar and Safitri (2017) examined the relationship between Brand Image and customer loyalty. The result shows the relationship between Brand Image and customer loyalty is very weak. The authors, Kambiz Hanzaee and Farsani (2011) found the relation between Brand Image and customer

loyalty. The survey method was questionnaire. The results show there is a positive relation between brand image and customer loyalty.

Another research author Hussain (2018) investigated the relation between brand image and customer loyalty. The survey method was the questionnaire. The sample size was 300 people. The results showed that there is a strong relation between Brand Image and customer loyalty. Rahi (2016) considers there is a relation between Brand Image and customer loyalty. The survey method was the questionnaire. The sample size was 367. The result shows that there is a strong relation between Brand Image and customer loyalty.

### **3.3.3 Brand loyalty**

At present Brand loyalty has become an important feature in the marketing sector due to the fact that it supports the relationship between the customer and any organization. Also, the name of the Brand is very important for loyal customers regarding the quality or services. For example; some customers are loyal, as an example, to specific phone mobile products because of its name and popularity which also make them resistance to change to any competitive products.

Brand loyalty can be defined as customers who frequently rebuy their preferred brand because this brand satisfying their daily demands needs and wants (Jacoby 1971). customer loyalty is the main part of this topic because the relation is when customers frequently repurchasing buying product or brat that satisfies their daily needs, demands, and wants will be loyal to that brand

The purpose of these studies is to investigate the effects of brand personality in building brand prestige and the brand extension relationship on perceived loyalty. Jacoby (1971) is one of the oldest studies and definitions about brand loyalty. The author in his paper developed measurement approaches to study the definition of Brand Loyalty. The author defined brand loyalty in terms of six conditions which are biased; behavioural response expressed over time by some decision-making unit and psychological process. Correspondingly in the period 1990's in different economic environment, whereas the author Raj (1980) deliberately worked on brand loyalty. In his paper, authors found a relationship between customers' favoured brand or customer loyalty and price elasticity in

buying behaviour. In their framework, authors used dairy product data that customers buy frequently and IRI scanner data. The results showed that loyal customers are less price sensitive toward their preferred products but more price sensitive regarding the quantity choice.

Dick and Basu (1994) discussed about Brand loyalty. In his paper authors mentioned that there is a relation between brand loyalty and customer loyalty through the phases of loyalty which are cognitive, affective, and conative. Additionally, authors added that Brand loyalty influenced by the attitude of customers in which repeating of brands advertisement with different brand and logo lead customer to buy their frequent brand with less effort.

Moreover, authors added that Brand loyalty affected by the emotional of customers for self-expensive products such as fashion, perfumes, and advertising in the market. In addition, the authors added that there are social norms influence brand loyalty such as demographic and lifestyle attitudes that effect customer choice of their preferred brands. Authors developed measurement for attitude and number of buying. The results showed that there is a relation between brand loyalty and customer loyalty.

Oliver (1999) discussed another topic about Brand loyalty. In his paper author described relation between customer loyalty and Brand loyalty. The author developed the definition of loyalty and suggested that the customers will be loyal to a product or brand and will continue buying it in the future if the product valuable with low price, improved features, and more generally personalised products such as competitors' products announced in the market or if the brand does not have these features will customers be loyal or not. In addition, the author added that customer human nature plays an important role in Brand loyalty such that customers trust in a product or band, customers will be loyal to it and repurchasing it in the future.

Loyalty can be split into three categories, which are one-dimensional loyalty, two-dimensional category, and three-dimensional loyalty.

Researches defined one-dimensional loyalty as behavioural loyalty and defined loyalty as the frequency and share of total purchasing patterns. Researchers measured one-dimensional loyalty in terms of customer behaviour, customer

decision making, customers purchasing preferences. Other research defined one-dimensional loyalty in terms of price, quality, distribution channels which identified as functional loyalty. In Addition, researchers found that phases of customer loyalty related to one-dimensional loyalty that researches considered as behavioural loyalty and explained these phases as cognitive, conative, and affective. Also, researches considering two-dimension loyalty as behavioural and attitudinal loyalty. In Addition, customer loyalty related to brand loyalty. Many studies found a relationship between brand loyalty and customer loyalty.

Sheth and J. N. (1996) mentioned about one of the oldest topics discussed about brand loyalty. The author found a relationship between brand loyalty and behavioural loyalty. The authors also defined loyalty as customers which are frequency purchasing and loyal to one brand. The author in his paper used empirical method to measure brand loyalty. The results strongly support relation between brand loyalty and behavioural loyalty.

Jacoby (1971) is first topic about Brand loyalty. The author finds a relation between brand loyalty and behavioural loyalty. The author suggested that behavioural loyalty as functional loyalty. The author defined brand loyalty in 6 terms as biased, behavioural response of customer, expression of customer, customer decisions, customer preferences, and customer psychological of customers in decision making. In his paper, the author shaped the measurements to measure brand loyalty. The outcomes strongly support the relation between brand loyalty and behavioural loyalty.

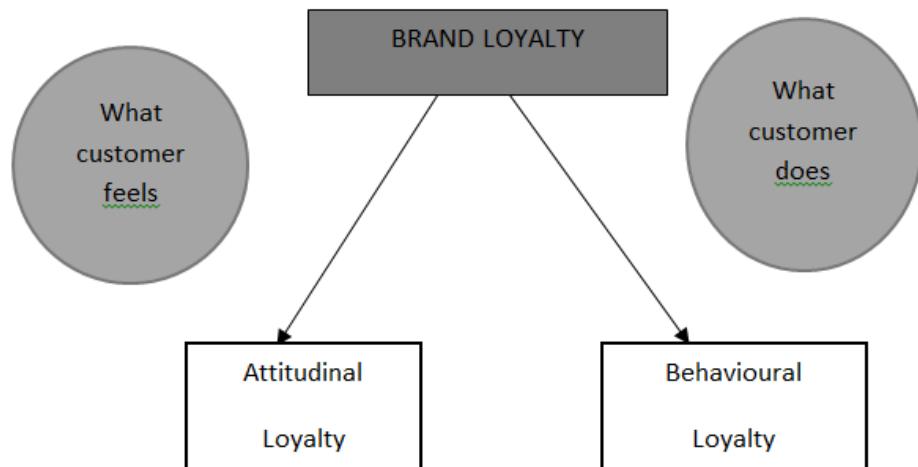
Oliver (1999) discussed another topic about Brand loyalty. The author found a relationship between brand loyalty and customer loyalty. The author described brand loyalty as cognitive loyalty which defines customers as loyal because of information, price and product features. The author developed measures to customer loyalty. The outcomes strongly support the relation between customer loyalty and brand loyalty.

Researches described two-dimensional loyalty as attitudinal and behavioral loyalty. Researches defined behavioural loyalty as behaviours of consumer toward a frequency of purchasing patterns. Also, research defined altitudinal loyalty as an attitude of loyal customers toward a brand or a product which

customers frequency prefer to purchase, and their total share of purchasing patterns.

Day (1976) mentioned about one of oldest topics about brand loyalty. The author discussed about two-dimensional loyalty. The author defined two-dimensional loyalty as behavioural and attitudinal loyalty. The author found a strong relationship between brand loyalty and two-dimensional loyalty. Research discussed and found a relationship between customer loyalty and two-dimension loyalty. Additionally, researches described customer loyalty as the strong connection between customer attitude and number of customer frequency purchasing patterns.

Dick and Basu (1994) discussed about customer loyalty. The authors found a relation between customer loyalty and two-dimensional loyalty. The author explained that they defined customer loyalty as the strong connection between attitude of customers toward purchasing brand and customers frequency reprinted buying their preferred purchases. The authors' hypothesis method was a literature review. The authors developed measures in their literature review to measure customer loyalty in the future. The author suggested that in their literature review they found that customer loyalty is strongly related to two-dimensional loyalty and explained that the term two-dimensional loyalty as the attitude of customers toward a product or a brand and consumer behaviour that leads customer to be loyal and repeating buying their preferred brand.

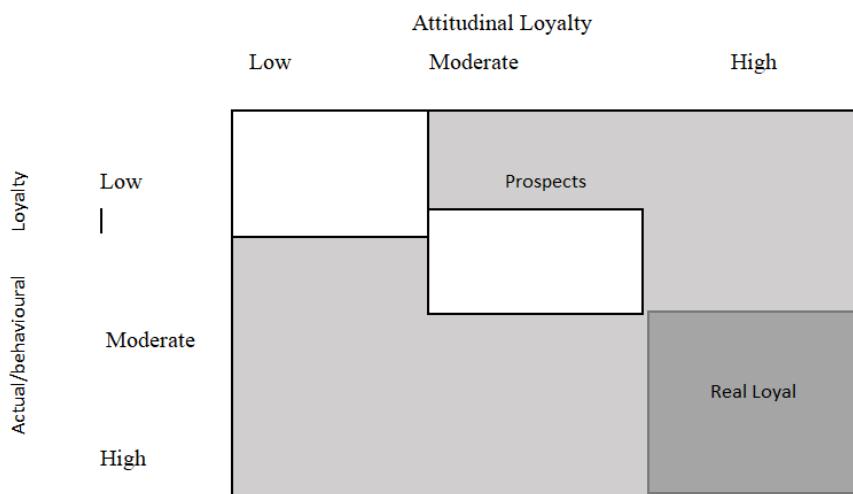


**Figure 3.4:** Elements of two -dimensional Definition of Loyalty

**Research** (Dahlgren, 2011, 19)

Figure 3.4 describes the definition of two-dimensional loyalty. The author defined two-dimensional loyalty as attitudinal and behavioural loyalty. In two dimensional definitions the categories are categorized based on customers feels and its actions. “customer feels” defines the attitudinal loyalty and according to the behavioural approach, customer loyalty is defined as behaviour and “what customer does” define behavioural loyalty. Behavioural loyalty is the degree of the repeated purchasing of customer Dahlgren (2011). To measure behavioural loyalty shares of purchase and purchasing frequency can be used.

Dahlgren (2011) uses the behaviour/attitude matrix to explain the two-dimensional aspect. In this matrix, there is a presentation of a relationship between attitudinal loyalty & actual/behavioural loyalty by using dimensions of prospects real loyal vulnerable. The matrix shows the importance of considering attitudinal loyalty actual/behavioural loyalty to examine a consumer’s loyalty to a brand.

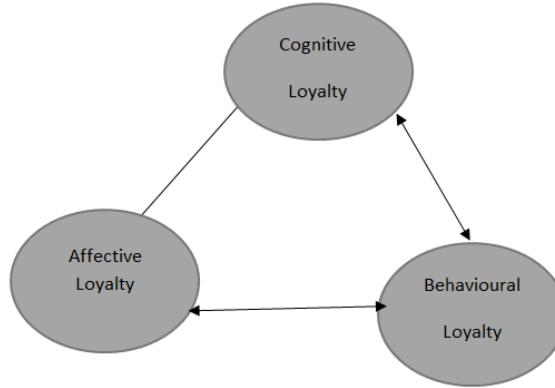


**Figure 3.5:** The behaviour / attitude matrix

**Research** (Dahlgren, 2011, 21)

Figure 3.5 shows the tri-dimensional approach to brand loyalty. In traditional two-dimensional approach, there are some inconsistencies and debates. Then three-dimensional approaches were taken in an account by researchers. Worthington et al. (2009) behavioural loyalty to these dimensions, and it is named as a tri-dimensional view of brand loyalty. In this approach, behavioural

loyalty defined as “the consumer’s tendency to repurchase a brand, revealed through behaviour that can be measured and which impacts directly on brand sales”. The researches which work on three-dimensional aspect state that behavioural loyalty can be explained as a consumer’s buying preference of a particular brand. This particular brand must be in the same category if it is compared to other brands.



**Figure 3.6:** Tri-dimensional approach to brand loyalty

Research (Dahlgren, 2011, 22)

### 3.3.4 Trust of Brand

Trust relationships are vital to the conduct of business. The level of trust in business relationships is a greater determinant of success than anything else, including content excellence.

Trust has a lot of definitions. Trust defined as motivation to depend on an exchange partner in whom one has self-confidence (Moorman, Zaltman, & Desphane 1992). Trust focuses on capital investments, sales of high value of investments goods, relationship, communication, cooperation, transaction between governance and costs Gambetta (1998), but trust has a problem in which if the sales person are not reliable , the customer will not trust the sales person (Swan, Trwaick & Silva 1985) .

The objective of the conducted studies is to investigate the cause and effect relationship between customer Trust, customer Loyalty. According to Leninkumar (2017) found the relationship between trust and customer loyalty. The results showed that there is a strong relationship between trust and customer loyalty.

In Addition, authors (Ngyen, Leclerc & Leblanc 2013) analyse the relation between trust and customer loyalty. The survey method was questionnaire. The sample size was 1296 buyers. The results show there is a relation between trust and customer loyalty. Moreover, authors Chen and Quester (2015) examined relation between trust and customer loyalty. The survey method was the questionnaire. The sample size was 293 consumers. The result shows that there is a relation between trust and customer loyalty.

Furthermore, according to authors Wen-Hai et al. (2009) prove the relation between trust and customer loyalty. The results showed that there is a strong relation between trust and customer loyalty. The survey method was questionnaire. The results showed a relationship between trust and customer loyalty.

Many studies investigated the robustness of the relations between trust and customer loyalty. The results of the studies show significant impact on customer royalty. The impact is resourced by some factors such as customer satisfaction and brand trust. However, customer satisfaction is the most important aspects of customer loyalty. According to research, authors (Kulet) found a relationship between trust and customer loyalty. The survey method was questionnaire. The sample size was 381 respondents. The result shows that there is a strong relation between trust and customer loyalty. Furthermore Asakdiyah (2017) found the relation between trust and customer loyalty. The survey method was questionnaire. The results show that there is a strong relation between trust and customer loyalty.

Also, Gul (2014) investigated the relation between trust and customer loyalty. The survey method was questionnaire. The sample size was 150. The result shows that there is positive relation between trust and customer loyalty. Additional authors, Hossain and Ullah (2011) studied the relationship between trust and customer loyalty. The survey method was questionnaire. The sample size was 200. The results showed that there is a strong relation between trust and customer loyalty.

(Mann, Singh& Sahni 2013) investigated the relationship between trust and customer loyalty. The result shows that there is a strong relation between trust and customer loyalty. Moreover, authors Lin and Wang (2006) investigated the

relationship between trust and customer loyalty. The survey method was questionnaire. The sample size was 255. The result showed that there is a relation between trust and customer loyalty.

Besides authors (Carranza, Diaz & Consegura 2018) found the relation between trust and customer loyalty. The survey method was questionnaire. The sample size was 456. The results show that there is a strong relation between trust and customer loyalty. Beyond the other authors, Dina et al. (2004) found the relationship between trust and customer loyalty. The result showed that there is a strong relation between trust and customer loyalty.

More research authors Choi and La (2013) investigate the relation between trust and customer loyalty. The results show that there is a strong relation between trust and customer loyalty.

Another research authors Fauzi and Suryani (2019) investigated the relation between trust and customer loyalty. The results show that there is a strong relation between trust and customer loyalty.

However, Kassim and Abdullah (2010) explored the relation between trust and customer loyalty. The survey method approach, as the result shows that there is not related trust and customer loyalty.

### **3.4 Word of Mouth (WOM)**

Word of Mouth is a very critical expression which can be defined as a Volitional post-purchase communication by consumers (i.e., word-of-mouth behaviour) is believed to follow from consumption satisfaction/dissatisfaction (Oliver, R. L. 1980).

Additionally, Word-of-Mouth (WOM) communication is one of the ways of informal communications. This communication technique is directed at other consumers about some ways. These ways are ownership, usage, or characteristics of particular goods and services and/or their sellers Westbrook (1980).

Many researchers found that word of mouth is more effective than other types of marketing. Whether compared to traditional advertising, media mentions, or

promotional events, word of mouth is more useful to improve the customer loyalty

In Addition, authors Chio and La (2013) analysed the relation between customer loyalty and word of mouth. The survey method was analysing factors and structural sampling. The results show that there is relation between customer loyalty and word of mouth. Other research authors Yadav and Rahman (2018) found a relation between word of mouth and customer loyalty. The survey method was questionnaire. The sample size was 371. The result found that there is a strong relation between word of mouth and customer loyalty.

Furthermore, author Prince (1992) found the relation between word of mouth and customer loyalty. The survey method was telephone interview. The sample size was 325. The results show that there is a strong relation between word of mouth and customer loyalty. As it discovered that there is a solid relationship between word of mouth and customer loyalty. The same was declared by the authors (Cantaloops, Cardona & Salvi 2017). The survey method was questionnaire. The sample size was 878. The results show there a strong relation between loyalty and word of mouth.

Along, author Dick (1994) analyse the relation between word of mouth and customer loyalty. The result shows that there is a strong relation between word of mouth and customer loyalty.

(Akbari, kazemi & Haddadi 2016) found the relation between word of mouth and customer loyalty. The survey data was questionnaire. The sample size was 420. The results show that, there is a strong relation between word of mouth and customer loyalty.

### **3.4.1 Service quality**

Service quality is a great expression and can be defined as a service quality revolves around the proposal that it is the result of the comparison that customers make between their expectations towards a service and their perception of the way the service has been performed Lewis and Booms (1983).

Another view was given by Lehtinen and Lehtinen (1982) as he provided a three-dimensional view of service quality. They realize it as consisting of what they term “interaction”, “physical” and “corporate” quality.

Service quality has some categories. One of the categories is perceived service quality. This category can be defined as the customer's judgement about the superiority. Also, it can be defined with another definition which is excellence of a product. Excellence of product is important factor when perceived value is the customer's overall assessment of the utility of a product. This utility is based on perceptions of the features of the product by means of what customer has Zeithaml (1988). The dimensions underlying quality are specific while satisfaction judgements have a broader range of dimensions that also include quality aspects Oliver (1993).

The quality of the service is one of the most important factors to evaluate the customer loyalty as various studies were aimed to determine the quality of services from certain service provider and to study the relationship between the service quality, satisfaction and loyalty.

In Addition, author Wong and Sohal (2003) analysed the relation between service quality and customer loyalty. The survey method was questionnaire. The sample size was 1261. The results showed that there is a strong relation between service quality and customer loyalty.

Moreover, author Sum and Hui (2009) found the relationship between service quality and customer loyalty. The survey method was Servqual. The results showed that service quality has relation with customer loyalty. Furthermore, author Prentice (2013) investigated the relation between service quality and customer loyalty. The survey method was by interviewing groups. The results showed that there is a relation between service quality and customer loyalty. Lee (2012) found relationship between service quality and customer loyalty. The survey method was questionnaire. The sample size was 500 but only 427 people answered. The results showed that there is a strong relation between service quality and customer loyalty.

Izogo (2016) analysed the relationship between service quality and customer loyalty. The survey method was questionnaire. The sample size was 138. The

results showed that there is a relation between service quality and customer loyalty. Furthermore, research authors (Kaura, Prasad & Sharma 2015) found the relation between service quality and customer loyalty. The survey method was questionnaire. The sample sizes were 445 respondents. The results showed that there is a relation between service quality and customer loyalty.

Further studies were initiated in order to assess the relationship between word of mouth and customer loyalty and conclude the main factors to be considered by the service providers. According to research by authors (L. Ostrowski, Peter & V. O'Brien, Terrence & L. Gordon, Geoffrey 1993) investigated relation between service quality and customer loyalty. The survey method was empirical study.

However, authors (Mandug, Modding, Hasan & Ella 2017) examined relation between service quality and customer loyalty. The survey method was questionnaire. The sample size was 215. The results showed that there is no relation between service quality and customer loyalty. The authors Matelong and Nassiuma (2018) analysed the relation between service quality and customer loyalty. The survey method was the questionnaire. The sample size was 230.

In addition, author Singla (2012) found the relation between service quality and customer loyalty. The survey method was variance. The results showed that there is a strong relationship between service quality and customer loyalty. Also, research authors (Lee, Chu & Chao 2011) analysed the relation between service quality and customer loyalty. The survey method via specifying tasks to the buyers. The results showed that there is a strong relation between service quality and customer loyalty.

### **3.4.2 Marketing**

Marketing refers to activities commenced by a business unit to upgrade the purchasing or trading of a product or service. Marketing has many fields, including the advertising, selling, and delivering of products to consumers or other businesses.

Most of the business units considering the marketing are one of the key components which can measure the performance of any business development

In today's perspective, marketing is one of the powerful tools to guarantee customer loyalty and expanding the growth of new customers i.e., the attention to his satisfaction and seeing the quality from his perspective. According to Ndubisi and O.N. (2007), there is a relation between marketing strategy and customer loyalty. The survey method was the questionnaire. The sample size was 220. The results showed that there is a relation between marketing strategy and customer loyalty. In addition, author Velnampy, Thirunavukkarasu & Sivanandamoorthy, Sivesan (2012) found a relation between marketing and customer loyalty. The survey method was the correlation value. The results showed that there is a direct relation between marketing and customer loyalty. Furthermore, authors (Rzan, Warokka & Listyawati 2014) analysed the relationship between marketing and customer loyalty. The survey method was the questionnaire. The sample size was 150. The results showed that there is a relation between marketing and customer loyalty.

For the same objective, authors Muhammad et al. (2016) evaluated the relation between marketing and customer loyalty. The survey method was the questionnaire. The results showed that there is a relation between marketing and customer loyalty.

Currently, demand is growing for products than in the past, and no service provider or company will be able to survive without customer satisfaction. In addition, there is the fact that customers' expectations have risen sharply, and companies must not think only about the basic needs of its customers, but they must act beyond it, and they focus on mutual interest and long-term relationships. customer loyalty in one of the concepts that will lead to success in today's competitive world. A loyal customer is willing to buy and spend more time and money, and that is why they strive to keep closely the customer to themselves to form loyalty programs.

Other authors such as (Udegbe, Idris & Olumaka 2010) analysed the relation between marketing and customer loyalty. The survey method was the questionnaire. The sample size was 2400. The results show that there is a relation between marketing and customer loyalty.

For the same subject, author N.A et al. (2016) investigated the relation between marketing and customer loyalty. The survey method was the questionnaire. The

sample size was 234. Results showed that there is a relation between marketing and customer loyalty.

Also, the authors Eisingerich and Bell (2006) explored the relation between marketing and customer loyalty. The survey method was the questionnaire. The sample size was 1268. The results showed that there is a relation between marketing and customer loyalty.

Other research authors (Lee, Hsiao & Yang 2010) explained the relation between marketing and customer loyalty. The survey method was questionnaires. The sample size was 600. The results showed that there is a relation between marketing and customer loyalty.

### **3.4.3 Price**

A value which is equivalent to procure a finite quantity or another measure of a product or service as the price forms the essential basis of commercial transactions. In any business unit, price is controlled by many factors such as: what a buyer is willing to pay, a seller is willing to accept, and the competition is allowing to be charged. With product, promotion, and place of the marketing mix, it is one of the business variables over which organizations can exercise some degree of control.

There is a relationship between a product's price and customer loyalty. Thus, this objective is supported by other researches, which have shown that one of the vital product attributes that affect customer loyalty and repurchase behaviour is the product's price. The authors (Kaura, Prasad & Sharma 2015) investigated the influence of price and customer loyalty. The survey method was the questionnaire. The sample size was 445. Results showed that there is a strong relation between price and customer loyalty.

Other research authors, such as Santouridis and Trivellas (2010) analyzed the relationship between price and customer loyalty. Results showed that there is a relation between price and customer loyalty. Moreover, another research to determine the relation between price and customer loyalty was carried out by the authors Kandampully and Suhartanto (2000) whereas the results showed that there is a strong relation between price and customer loyalty.

In addition to exploring the relationship between price and customer loyalty, additional research composed by authors Osman and Bowie (2009) while the results showed that there is a relation between price and customer loyalty. Besides as a method to analyse the relationship between price and customer loyalty which was made by the authors Jin and Merkebu (2015) as the results showed that there is a strong relation between price and customer loyalty.

Another issue in the market is pricing. Pricing is a critical strategy; also, the strategy influences product/service demand and company profitability. On conclusion, customers are highly affected from the price of the product. Price influences the decision of the customer. The decisions have great role in having choosing loyalty or having loyalty. After this process, which is between price and loyalty, consumers are getting more value conscious. Also, customers focus on price and value of the product, and this focus is the primary reason when purchasing product and service.

According to the author, Anuwichanont (2011) examines the relation of price on customer loyalty. Results showed that there is a relation between price and customer loyalty.

Other research authors Mohammad and Subagio (2016) analysed the relation between price and customer loyalty. The survey method was the questionnaire. The sample size was 133. Results showed there is a relation between price and customer loyalty. More and more research authors like Briliana (2018) found a relationship between price and customer loyalty. The survey method was the questionnaire. The sample size was 110. Results showed that there is a relation between price and customer loyalty.

#### **3.4.4 Perceived Value**

There are no certain definitions for Perceived value. Perceived value can be defined in many terms. Firstly, Perceived value can be defined as the consumer's overall assessment of the utility of a product or service based on perceptions of what is received and what is given. Zeithaml (1988). Also, the term Perceived value can be defined as customer's overall assessment of the utility of a product based on perceptions of what is received and what is given (Cronin ,Brady & Hult 2000).

Today's competitive environment in the business sector adds extra barriers to achieve customer loyalty. Customer loyalty is crucial to improve overall performance and build better relationship with potential customers.

The focus of this research by the authors Wang and Wu (2012) is to examine the impact of customer satisfaction and customer perceived value on customer loyalty. The survey method questionnaire. The sample size was 279. Results showed that there is a relation between perceived value and customer loyalty . In Addition, authors Hasliza et al. (2017) analyzed the relationship between perceived value and customer loyalty. The survey method was questionnaire. The sample size was 489. Results showed that there is a strong relation between perceived value and customer loyalty.

Although, authors (Hapsari, Clemes,& Dean 2016) examined relation between perceived value and customer loyalty. The survey method was questionnaire. The sample size was 250. Results showed that there is no relation between perceived value and customer loyalty. However, authors Gabriel et al. (2017) found relations between perceived value and customer loyalty. The survey method was questionnaire. The sample size was 505. Results showed that there is a relation between perceived value and customer loyalty.

Additionally research authors (Keshvari, Farashbandi & Geraei 2015) considered relations between perceived value and customer loyalty. The survey method was questionnaire. The sample size was 467. Results showed that there is a relation between perceived value and customer loyalty.

The existence of high levels of customer satisfaction, customer perceived value and customer relationship management enhance the relationship of customer with the firm which strongly boost up the overall performance of the firm. (Yaya, Marimon & Casadesus 2013) examined relationships between perceived value and customer loyalty. The survey method was online questionnaire. The sample size was 123. Results showed there is a strong relation between perceived value and customer loyalty.

An Extra Research authors Juan et al. (2013) inspected the relations between perceived value and customer loyalty. The survey method was questionnaire. The sample size was 200. Results showed there is a relation between perceived

value and customer loyalty. As well, the authors (Krishna Moorthy, Loh Chun T'ing, Seow Ai Na, Chew Tze Ching, Lee Yuin Loong, Lim Sze Xian & Teoh Wei Ling 2018) determined relations between perceived value and customer loyalty. The survey method was quantitatively method based on questionnaire. Results showed that there is a relation between perceived value and customer loyalty.

Also research, author El-Manstrly (2016) studied relationships between perceived value and customer loyalty. The survey method was questionnaire. The sample size was 360. Results showed there is a relation between perceived value and customer loyalty. Another research author Yen (2010) figured out relationships between perceived value and customer loyalty. The survey method was online questionnaire. The sample size was 425. Results showed there is a relation between perceived value and customer loyalty. Furthermore author Molina (2018) reviewed relationships between perceived value and customer loyalty. The survey method was interviewing. The sample size was 460. Results showed there is a relation between perceived value and customer loyalty.

Also authors Ya et al. (2018) inquired relationship between perceived value and customer loyalty. The survey method was online questionnaire. The sample size was 403. Results showed there is a relation between perceived value and customer loyalty.

### **3.4.5 Corporate Image**

Corporte Image it's an important facor in customer Loyalty. Corporate image refers to the perception of an organization that customers' hold. They hold this perception in their memories because it works as a filter through which a company's whole operation is perceived, a corporate image reflects a company's overall reputation and prestige.

customer loyalty is considered to be a key ingredient in enhancing the survival of businesses especially in the situations faced by highly competitive industries. This study assessed the relationship between corporate image and customer loyalty. While the antecedents of customer loyalty connected with the marketing mix factors have been well investigated, much still remains to be studied

regarding some of the intermediate conditions created by the marketing mix factors and customer loyalty.

Foremost authors Wang and Wu (2012) examined relationships between corporate image and customer loyalty. The survey method was questionnaire. The sample size was 279. Results showed that there is a relation between corporate image and customer loyalty. In Addition authors Daniel Kipkirong Tarus & Nicholas Rabach (2013) investigate relation between corporate image and customer loyalty. The survey method was questionnaire. The sample size was 140. Results showed that there is relation between corporate image and customer loyalty.

Furthermore research authors Andreassen and Lindestad (1998) consider relation between corporate image and customer loyalty. The survey method was questionnaire. The sample size was 600. Results showed that there is a relation between corporate image and customer loyalty.

Moreover research authors Makanyeza and Chikazhe (2017) explained relationships between corporate image and customer loyalty. The survey method was questionnaire. The sample size was 310. Results showed that there is a strong relation between corporate image and customer loyalty.

Additional research authors Kandampully and Hu (2007) analyzed the relationship between corporate image and customer loyalty. The survey method was randomly selected. Results showed that there is a relation between corporate image and customer loyalty.

Extra research authors (Clemes, Shu & Gan 2014) evaluated relations between corporate image and customer loyalty . The survey method was questionnaire. The sample size was 516. Research showed that there is a relation between corporate image and customer loyalty.An extra research authors Askariazad and Babakhani (2015) questioned relations between corporate image and customer loyalty. The survey method was questionnaire. The sample size was 90. Results showed that there is a relation between corporate image and customer loyalty. Various studies were conducted to examines the relationships between corporate

image and customer loyalty, and investigates the key drivers that establish and maintain customer loyalty

According to, research authors Kaur and Soch (2013) figured out the relationship between corporate image and customer loyalty. The survey method was questionnaire. The sample size was 855. Results showed there is a strong relation between corporate image and customer loyalty. Additional researches use a questionnaire to investigate the relations between corporate image and customer loyalty.

As well as many researchers applied the questionnaire technique to investigated relationships between corporate image and customer loyalty, such studies made by the authors

Nguyen and LeBlanc (1998) as the survey sample size was 1224. Result showed that there is a relation between corporate image and customer loyalty.

However, author (Ball,Coleho & Vilares 2006) found relationship between corporate image and customer loyalty. The survey method was questionnaire. The sample size was very large sample size. Results showed that there is no direct relation between corporate image and customer loyalty.

Authors Rahman and Bhattacharyya (2003) explored the relations between corporate image and customer satisfaction. Results showed that there is a strong relation between corporate image and customer loyalty.

### **3.4.6 Switching Costs**

It's a buyer switch from seller products to another the buyer focuses on switching costs Burnham, Fatsels, and Mahyen (2003 & Porter (1980). Switching costs are not always related with money cost they can be monetary or nonmonetary and real or perceived.

Klemperer (2003) derives three type of switching costs. They are transaction switching costs, learning switching costs, and contractual costs. Transaction costs can be defined as costs that arise when starting relation with provider and sometimes can contain costs that are needed to dismiss relationship with provider Caruana (2003). Learning costs meant that effort by customers to acquire knowledge about using of product but not moved to the same product

with same brand caruana (2003). Contractual costs are cost which focus on repetition of purchasing discounts and number of customer loyalty programmes (Caruana, 2003).

Switching costs are known to influence customer loyalty. Various studies primarily investigate which dimensions of switching costs affect which dimensions of customer loyalty. These studies depend on data collection and canonical correlation analysis is undertaken to investigate these relationships. Foremost author Yen (2010) investigated the relationship between switching costs and customer loyalty. The survey method was online questionnaire. The sample size was 425. Results showed that there is strong relation between switching costs and customer loyalty. In Addition research authors Wang and Wu (2011) analyzed relationships between switching costs and customer loyalty. The survey method was questionnaire. The sample size was 279. Results showed that there is a strong relation between switching costs and customer loyalty.

Moreover, research author Yen (2011) found the relationship between switching costs and customer loyalty. The survey method was online survey. The sample size was 382. Results showed that there is a relation between switching costs and customer loyalty. Furthermore, research authors (Shi, Ma & Ji 2015) examine relation between switching costs and customer loyalty. Results showed that there is a relation between switching costs and customer loyalty.

Other authors Lee and Neale (2012) examined relations between switching costs and customer loyalty. The survey method was questionnaire. The sample size was 518. Results showed that there is a relation between switching costs and customer loyalty. Authors (Beerli, Martín & Quintana 2004) questioned relation between switching costs and customer loyalty. Results showed that there is a relation between switching costs and customer loyalty.

Other research authors Gabriel et al.(2018) examined relation between switching costs and customer loyalty. The survey method was structural equation. The sample size was 505. Results showed that there is a relation between switching costs and customer loyalty.

Research authors ( Qayyum, Khang & Krairit 2013) explained relationships between switching costs and customer loyalty. The survey method was questionnaire. Results showed that there is a strong relation between switching costs and customer loyalty.

In Addition, authors Olsen & Jacoby (1971) utilized instrument studies to define productloyalty and investigated tat productloyalty is linked to total number of buying preferred products regarding to any other products. Moreover, authors Olsen and Jacoby (1971) stated that manner of customer behaving is indicating in the frequent purchasing.

Authors Zahriah, Ishak & Ghani (2013) mentioned that (Oliver, R., 1999) customer loyalty is intensely believed of repeating of purchasing a favouredproduct in the long time, despite, specific affects, and market achievements which lead in changing behaviour. In addition, (Oliver, R., 1999) suggested four types of customer loyalty depended on expectation that buyers at the beginning utilize their knowledge to make assumptions, and make these assumptions depends on their characters and behaving decisions depend on strong related characters.

#### **4. TURKISH TELECOMMUNICATIONS SECTOR**

In this research we use telecommunication sector as a mobile segment telecommunication companies. In Turkey's telecommunications sector there are three biggest firms which are Turkcell, Turk Telekom and Vodafone. Except Turkcell the other two firms had different name when they appear in the sector. In the mid-1990s Vodafone was Telsim . Telsim and Turkcell are the only two operators and had revenue agreements with Türk Telekom. In this years Türk Telekom was state-owned vertically integrated statutory monopoly thus these operators' prices was controlled by Türk Telekom (Atiyas & I., 2005) .

Telsim started its operation in 1994 and its market share was 31.5% in 1998. In 2004 Telsim was transferred to the Savings Deposit Insurance Fund then Telsim joined to Vodafone Group as Vodafone Telekomünikasyon A.Ş. TT & TİM İletişim Hizmetleri A.Ş. started its operation in 2004 then merger between Aycell. After this merge, new brand "Avea" then "TT & TİM İletişim Hizmetleri A.Ş" was replaced with "Avea İletişim Hizmetleri A.Ş."

Total number of broadband subscribers in mobile operators sector are nearly 75 million which was 13.4 million in 2005. Turkey. xDSL has 9.5 million subscribers as of Q4'18 and fiber has 2.8 million subscribers and the penetration rate is 16.3% (tatyatirimciiliskileri, 2018) .

The history of the mobile operators start in 1994 by privatization of post and telegraph and Türk Telekom A.S. (TTAS). This privatization leads to authorization of two private companies to provide mobile services over the GSM 900 standard. In this year only two firm have right to give mobile service to customers which are Turkcell and Telsim.

There were important developments in the mobile communication sectors. These are summarized below (Atiyas, İ., 2005)

“January 2000 – Law no. 4502 . “Monopoly rights of Turk Telekom will be terminated on December 31, 2003. The Telecommunications Authority is established as an independent regulator”

May 2001 – Law no. 46 73. “The law transfers licensing authority from the Ministry of Transport to the TA.”

August 2001 –“Tariff Ordinance (Official Gazette, August 28, 2001 no. 24507)”

January 2002 - “Communiqué on Principles and Procedures to Apply Price Cap Regulation to Turk Telekom Tariffs (Official Gazette, 11.01.2002, No. 24637) (Price Cap Communiqué I)”

March 2002 – “Ordinance on Principles and Procedures for Making Roaming Agreements”

May 2003 - “Ordinance on Access and Interconnection (Official Gazette, 23.05.03)”

June 2003 – “Communiqué on Principles and Procedures Regarding the Determination of Operators with Significant Market Power” (Official Gazette June 3, 2003, No. 25127)

June 2003 - “Communiqué on Principles Regarding the Determination of Operators with Dominant Position” (Official Gazette June 3, 2003, No. 25127)

December 2003 - “Communiqué On Principles And Procedures Regarding Co-Location And Facility Sharing” (Official Gazette, December 31, 2003 No. 25333)

December 2003 –“Price Cap Communiqué II”

February 2004 - “Regulation for Numbering”

February 2004 – “Ordinance on the Processing of Personal Information and Protection of Privacy (Official Gazette, 26.02.2004)”

February 2004 – “TA Board Decision on Principles and Procedures for Accounting Separation and Cost Accounting Obligations on Turk Telekom and Operators with SMP in Mobile Call Termination Markets”

April 2004 – “TA issues Annex 8 to the Authorization Ordinance on the authorization of Long Distance Telephone Services” (“Ordinance on Making

Changes to the Ordinance on Telecommunications Services, Official Gazette April 13 2004, no. 25432”).

May 2004 - “TA issues the first set of licenses for long distance operators”

July 2004 - “Communiqué on Principles and Procedures on Unbundled Access to the Local Loop”

August 2004 – “Ordinance on the Authorization of Telecommunications Services and Infrastructure(Official Gazette, August 26, 2004)”.

September 2004 – “TA issued Standard Interconnection Reference Tariffs”

October 2004 - “The TA adopts a decision on ADSL resale and bitstream access (Board Decision No. 2004/535 of October 6, 2004, not published in the official gazette)”

December 2004 – “TA issues Ordinance on Consumer Rights in the Telecommunications Sector (Official Gazette, 22.12. 2004, No. 25678)”

February 2005. “TA adopts its decision no. 2005/21 dated 10.01.2005, which mandates Turk Telekom to rent leased lines and other media to holders of long distance telecommunications licenses to carry telephone traffic, including for access to users”

February 2005 – “TA issues Ordinance Amending the Ordinance on the Authorization of Telecommunications Services and Infrastructure (Official Gazette No 25718, 05-02-2005). This ordinance adds Annex 10 to the to the Authorization Ordinance (Official Gazette, August 26 2004) on the licensing of “cable platform services”.

February 2005. “Authorization of Broadband Fixed Wireless Acces (amendment to the Authorization Ordinance) Official Gazette dated 17.02.2005”

Boynudelik U. (2011) split Development of Turkish mobile market in three phases. These phases are duopoly period, new entry and quadropoly period and current state of the industry as a phase 1, phase 2 and phase 3 respectively.

Boynudelik U. (2011) states that in duopoly period there are only two mobile operators which are Turkcell and Telsim and they have an agreement with Türk Telekom to share their revenue. The rate of the revenue shared is 67%. This

revenue share agreement is replaced for next 25 years in 1998 for both two operators.

In the second phases because of the fast growing nature of the market more companies want to enter the market then government decided to give new licences one of the firm which took a licence is Turk Telekom. In April 2000 the consortium of İşbank and Telecom Italia Mobile got licences by 2.5 billion US dollars. Then the last consortium was İş-TIM. İş-TIM gave Aria brand name to their service and after Aria Turk Telekom's service which is named Aycell started operations. Unfortunately when Aria and Aycell entered the market there was a financial crisis in Turkey in 2001. Because of the crises Aria and Aycell could not grow fastly they reached the 7.25% fro 3.8% from 2001 to 2004. At last they merged and has been woring as a single firm. In the last phases in 2006 Turk Telekom acquired İş-Tim's share in Avea and Turk Telekom's share in Avea has increased to 81.2%.

Moreover nowadays some Mobile Virtual Network Operator (MVNO) companies are working in the sector. MVNOs are operators which provides mobile services without having their own infrastructure , they used licensed MNOs infrastructure and try to leverage its existing assets to grow their own mobile customer base. MVNO's in Turkey are Fenercell, GSMobile, Kartalcell, Trabzoncell, Basicell, Uğurcell, İstanbulcell, VIPCell and TTNET Mobil.

Atiyas, İ. and Doğan P. (2007) present timeline of Turkish Mobile Industry:

1994: PTT breaks: establishment of Turk Telecom (TT) Two IMNOs enter with GSM 900: Turkcell and Telsim

1998: IMNOs sign concession agreements 1994 (25 years)

2000: GSM licenses are awarded to Is-Tim and TT Telecommunications

2003: EMNOs merge and launch Avea Monopoly rights of TT

In mobile industry there are so many factors to choose operator company. In Turkey fierce competition in Turkish mobile market and the market consist of very youg customers which have average age of 29. Also penetration rate, disposable income of customers, internet and computer technologies of the companies are important factor to choose mobile telecommunication company.

Because in this research we aim to investigate prices and customer loyalty relationship we don't argue about these factors.

## **5. RESEARCH METHODOLOGY AND ANALYSIS**

### **5.1 Methodology**

#### **5.1.1 Correlation**

Foremost, distinct enquiries discussed about correlation between service, quality, loyalty and satisfaction and how they are related in different business sectors. According to authors Gordon H.G. McDougall & Terrence Levesque (2000) there is a correlation between service quality and customer satisfaction. The survey method was questionnaire. Results showed that there is a strong correlation between service quality and customer satisfaction. Moreover, authors Michel Rod, Nicholas J. Ashill, Jinyi Shao & Janet Carruthers, (2009) investigated the correlation between service quality and customer satisfaction. The survey method was questionnaire. Results showed that there is a correlation between service quality and customer satisfaction

Saha, and Theingi (2009) explored correlations between service quality and customer satisfaction. The survey method was questionnaire. The sample size was very huge, and it is about 1212. Results showed that there is correlation between service quality and customer satisfaction. Also, research authors (Jiang, Wang) found the correlation between service quality and customer satisfaction. The survey method was questionnaire. Results showed that there is a strong correlation between service quality and customer satisfaction. Other authors (Yaya, Marimon & Casadesus 2013) explored correlation between service quality and customer satisfaction. The survey method was online questionnaire. The sample size was 428. Results showed that there is a strong correlation between service quality, customer loyalty and customer satisfaction. Dapper Research authors Yoo and Park (2007) investigated the correlation between service quality and customer satisfaction. The sample size was 129. Results showed that there is a correlation between service quality and customer satisfaction. A major research author Ting (2004) concentrated on correlation

between service quality and customersatisfaction. Results showed there is a correlation between service quality and customer satisfaction.

### **5.1.2 Regression Analysis and Panel Data**

For most correlation & regression analysis is very important aspect in econometrics topics. Correlation and regression analysis are used to find a relationship and connection between two variables. There are differences between correlation & regression models. Also, correlation & regression models used to interpret statistical data in firms, organizations, and governments. Firms and organizations used correlation and regression models to measure their performance and financial situations during financial years.

Gujarati (2004) discussed about correlation and regression model. The author defined correlation as measurement and observations about the connection or strength of linear relationship between two variables. In Addition, the author mentioned coefficient correlation and discussed that coefficient correlations used to measure the strength of linear relationship.

There are some differences between regression and correlation model. The main point important in regression mode is measure the relationship between two variables that don't have symmetry to each other. For example, the relationship between age, level and height. While co the main aspect on correlation model is to find the relationship and measure two variables that are related and have symmetry between each other. For example, the relationship between students grades and GPA. Also, the relation of scores between two subjects

Gujarati (2004) debated about the differences between regression and correlation model. The author mentioned the regression analysis used to measure variables that do not have symmetry which are one dependent variable and another independent variable. While the correlation analysis used to measure the relations ship between two variable that are symmetry to each other. For example, height and weight.

There are three types of correlation analysis as discussed in econometric topic, which are positive correlation, negative correlation, and zero correlation or autocorrelation. Gujarati mentioned the difference between types of correlation. The author suggested that values of one-x variables and two-y variables did not

follow each other described as zero correlation or auto correlation. In Addition, the author described the positive correlation as positive value followed by positive value. While the negative correlation described as the negative value followed by negative value.

Coefficient of correlation is a measurement tool used to find the relationship between two variables. According to econometric topic, there are seven properties of coefficient correlations. Gujarati (2004) discussed about coefficient of correlation. The author defined and mentioned coefficient of correlation as measurement to find the relationship between two variables. In addition, the author discussed that there are seven types of correlation coefficient which are coefficient can be positive or negative depend on the value, There are two limits can coefficient lies between them which are -1 and 1, The value x and y of coefficient correlation are symmetry and related to each other , the value of coefficient correlation which is r lies between values x and y related to the values between original values , when the coefficient correlation is zero and two variables are constant which are x and y it will be considered as zero correlation , confident correlation used as measurement tool to measure the relationship between dependent variables, and coefficient doesn't indicate cause and effect relationship between variables .

#### **5.1.2.1 Pooled and Panel Data**

Pooled data occur when we have a “time series of cross sections,” but the observations in each cross section do not necessarily refer to the same unit. Panel data refers to samples of the same cross-sectional units observed at multiple points in time.

According to Hiestand (2005), Guajarat (2003) & Greene (2012) Panel data can be defined with a lot of names such as pooled data, pooled time series and cross-sectional data micro panel data, longitudinal data, and event history analysis. Also, authors mentioned that panel data models used in social sciences data that use time series and cross-sectional data. In Addition, authors discussed that panel data groups show the same cross-sectional unit of study surveyed over time. Moreover, authors suggested there are many statistical computer programs that figure panel data model.

Histeand and Gujarati (2004) defined panel data as type of pooled data by the same cross section unit is observes by time. This time units can be described by in terms of years, months, weeks, days or any other time.

Histeand (2005) discussed about pooled ordinary least squares. The authors defined pooled ordinary least squares as measuring time series for each case or cross sectional over time. This measurement neglects the effects over individual and time. Also, this estimation finds the relationship of variables being studied across cases and over time. The author mentioned the formals of pooled OLS model as following:

$$Y_i = \alpha + \beta_1 X_{1t} + \dots + \beta_n X_{nt} + e_t$$

$$t = 1 \dots T$$

$$i = 1 \dots I$$

Histeand (2005) mentioned that results of pooled regression from these two formulas calculated statistically with significant coefficients, the slope coefficient may indicate expected signs. Also, the author mentioned that R-square value may be approximately high. In addition, author suggested that the relationship between two Variables which are  $Y_{it}$  and  $Y_i t$  may be strong, positive or negative.

### **5.1.2.2 Fixed Effect Model**

Another model in panel data is fixed effect model (FEM) . In this model variables are constant across individuals. We can give age, sex, or ethnicity variables as an example of these variables. These variables don't change or change over time and they are constant over time. They have fixed effects; in other words, any change they cause to an individual is the same. In fixed effect model we think that we don't choose sample randomly our sampling method to choose observation from the population is not random.

According to Histeand and Gujarati (2005) discussed about fixed effects. The authors defined fixed effects as accept the intercept and slope coefficient to be fixed across time but contrasts on people and cases. In Addition, authors mentioned that fixed effect models examine that slope of coefficient are fixed but the intercept differs across sectional units. This kind of model allows the

intercept to be changes across individuals, but the slope coefficient is examined to be fixed across firms.

Histeand and Gujarati (2004) discussed about fixed effects models applications. The author mentioned that fixed effect model defined as least square dummy variable and this kind of model took name from practice of including dummy variables. The authors added that the easy square dummy variable model can be useful to time effects in which that dummy variables are functions of time units, not cases or characteristics. Also, authors mentioned that this model shows moves over time such as variance in performance, technology, and other contextual factors useful to same cases. Besides that, more complex difficult application of least square variables dummies will be considered dummies for both individual's effects and time effects.

The same researchers also mentioned about fixed effect model. The authors specify that this type of model examines that the intercept and the slope coefficient may variance in across individuals. By using this equation, the specification also introduces changes in slope dummies and can be calculated by multiplying each dummy by each X variables. The Y shows that the number of these interaction. This equation can be as following:

$$Y_{it} = \alpha + \alpha_1 D_{1it} + \dots + \alpha_n D_{nit} + \beta_1 X_{1it} + \dots + \beta_m X_{mit} + \mu_{it}$$

$t = 1, \dots, T$                      $n = 1, \dots, \text{number of dummy variables}$

$i = 1, \dots, I$                      $m = 1, \dots, \text{number of dummy variables}$

These characteristics as  $n$ ,  $m$ , and  $w$  can be described as  $n=1, \dots, \text{number of dummy variable}$ ,  $m=1, \dots, \text{dummy variable}$ , and  $w=1, \dots, \text{number of interactions}$ . (Histeand, 2005), (Gujarati, 2004).

### 5.1.2.3 Random Effect Model

The opposite of fixed effects are “random effect”s. These variables are—like the name suggests—random and unpredictable; they are literally “random effect”s.

According to authors Histeand and Gujarati (2004) discussed about “random effect” model. The author mentioned that “random effect” model depends on the intercept ( $\alpha_{1i}$ ) is a random variable with a mean value of  $\alpha_1$  (with value of  $i$ )

and the error term ( $\varepsilon_i$ ) which defines value of zero and variance of  $\sigma_\varepsilon^2$  which can be defined in following:

$$\alpha_{1i} = \alpha_1 + \varepsilon_i \quad i = 1 \dots i$$

According to Histeand (2005) mentioned that results come from this equation that all individuals came from large sample and they have in common a grand mean value for the intercept ( $\alpha_1$ ). Individual changes are replicated in the terms of the error ( $\varepsilon_i$ ). The authors also added this equation can be expressed by following:

$$Y_{it} = \alpha_1 + \beta_1 X_{1it} \dots \beta_n X_{nit} + \varepsilon_i + \mu_{it}$$

$$= \alpha_1 + \beta_1 X_{1it} \dots \beta_n X_{nit} + \varepsilon_i + \omega_{it}$$

$$t = 1 \dots t \quad n = 1 \dots \text{number of dummy variables}$$

$$i = 1 \dots i \quad m = 1 \dots \text{number of dummy variables}$$

Where

$$\omega_{it} = \varepsilon_i + \mu_{it}$$

According to Histeand (2005) suggested that these two variables of the composite term are  $\varepsilon_i$  that follow to individual specific error (cross-section), and the variable  $\omega_{it}$  which following to the combined time series and cross-section error. The author added that the hypothesis of the composite term which  $\omega_{it}$  can be expressed as following:

$$\varepsilon_i \sim N(0, \sigma_\varepsilon^2)$$

$$\mu_{it} \sim N(0, \sigma_\mu^2)$$

$$E(\varepsilon_i \mu_{it}) = 0 \quad E(\varepsilon_i \varepsilon_j) = 0 \quad (i \neq j)$$

$$E(\mu_{it} \mu_{is}) = E(\mu_{it} \mu_{jt}) = E(\mu_{it} \mu_{js}) = 0 \quad (i \neq j; t \neq s)$$

Therefore

$$\text{If } E(\varepsilon_i) = 0, \text{ then the var}(\omega_{it}) = \sigma_\varepsilon^2 + \sigma_\mu^2$$

## 5.2 Empirical Application

There is currently three GSM firm in Turkey which are Turk Telekom, Vodafone, and Turkcell. In this article two of them are used which are Turk Telekom and Turkcell. The data period is 2012Q1-2018Q4 which is consisted of 56 observations.

The table bellows shows name, definition and source of the variables. We use number of mobile customers of two biggest companies of three of Turkish GSM company which are Tukcell and Turk Telekom. At first to measure the customer loyalty we use number of mobile customer of the companies. If the number decrease it will show there is no customer loyalty.

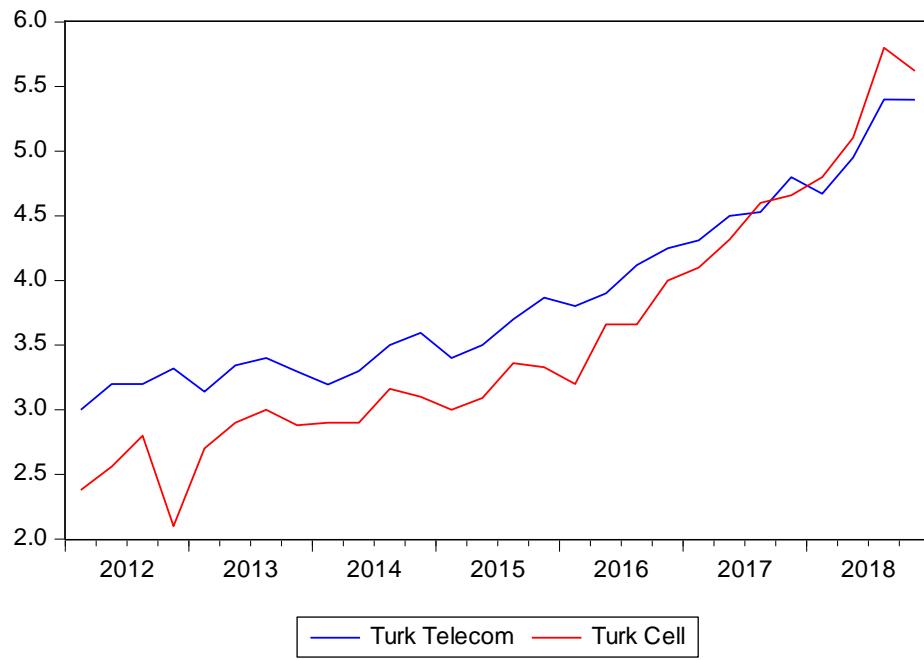
Our expectation is to have insignificant coefficient of inflation rate. Because inflation rate is the proxy of the prices of mobile phone invoice. If the customer has customer loyalty for the firm there will be no effect from inflation to number of mobile customer. We may use price of the packages and tariffs but if there are many packages and tariffs and some discounts based on age and profession. That's why we use inflation rate.

Inflation has two effect on number of mobile customer one is the price effect and other is the disposable income effect. If the inflation increase it leads to decrease disposable income then the customer want to change his/her telecom company. If customer has customer loyalty decrease of disposable income has no effect on customer loyalty. We need control variable to make meaningful regression therefore we take revenue of the firms as a control variable.

**Table 5.1:** Definition of the Variables

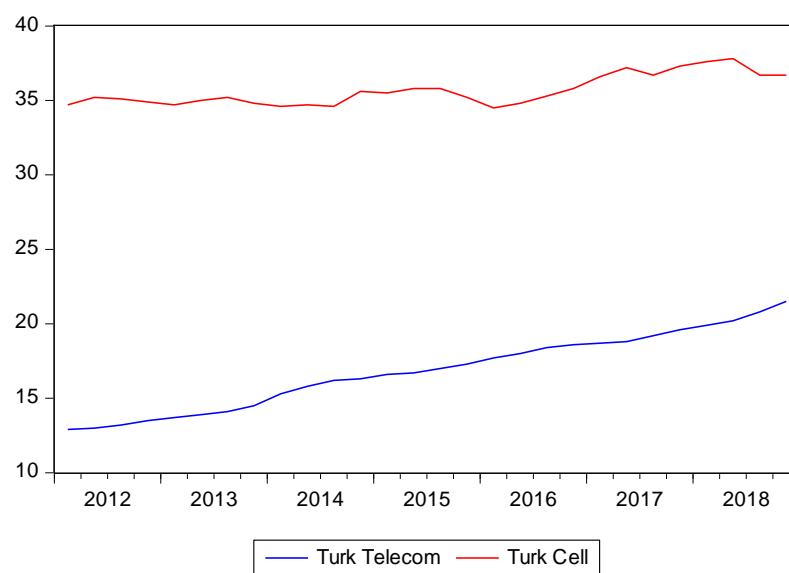
Definition	Name	Source
Number of Mobile Customers	NMC	<a href="https://www.turkcell.com.tr/en/aboutus/investor-relations/quarterly-results">https://www.turkcell.com.tr/en/aboutus/investor-relations/quarterly-results</a>
Inflation Rate	IR	<a href="http://evds.tcmb.gov.tr">evds.tcmb.gov.tr</a>
Revenue (TL)	REV	<a href="https://www.turkcell.com.tr/en/aboutus/investor-relations/quarterly-results">https://www.turkcell.com.tr/en/aboutus/investor-relations/quarterly-results</a>

The graph of the variables can be seen below. The graphs represent the trend of the variables by time. The graphs are drawn for the companies separately to see the difference between companies.



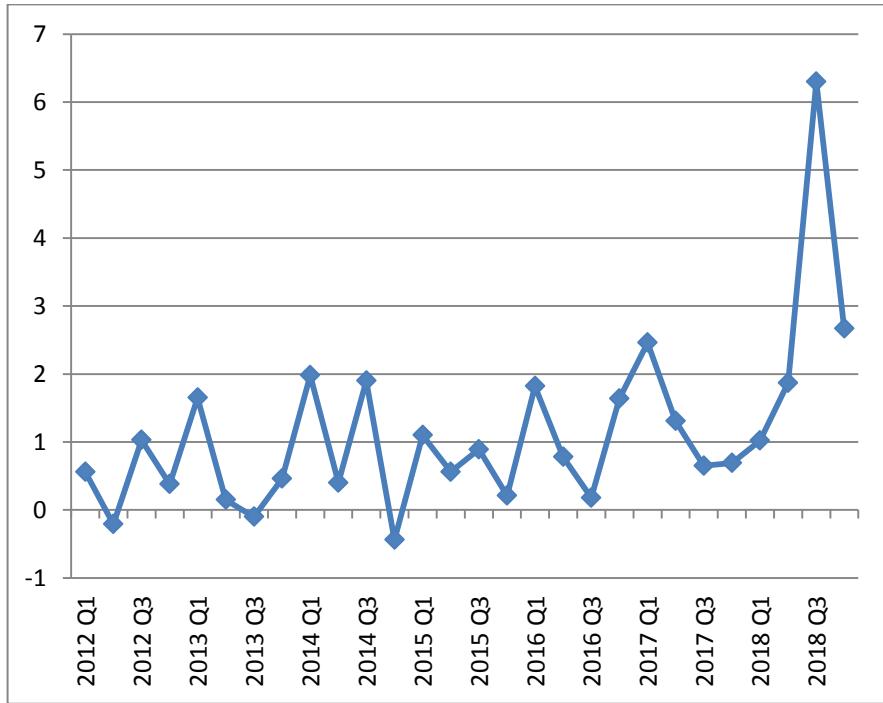
**Figure 5.1:** Graph of REV

Figure 5.1 shows the trend of revenue of the firms. There is a big decrease in 2012 in Turkcell, there is also decrease in Turk Telekom but it is lower than Turkcell decrease. We can see some decreased quarters but mainly the trend of the revenue is increasing. If the revenue increase the marketing expenses of the companies will increase than company will earn more customers than it increases number of customer. But this relationship is not direct relationship it is indirect relationship. Our expectation for the coefficient of revenue is significant and positive because of this relationship.



**Figure 5.2:** Graph of NMC

Figure 5.2 presents number of mobile customers of Turkcell and Turk Telekom . The graph shows the big difference between Turkcell and Turk Telekom. However, the gap between the companies is decreasing but the difference is still significantly big. We can say that the number of mobile customers of Turk Telekom is increasing but there is no significant decrease in Turkcell. Therefore it is one of the signs of customer loyalty.



**Figure 5.3:** Graph of Inflation

Figure 5.3, the graph shows the inflation rate of Turkey. Because inflation rate is the macroeconomic variable of the country we don't have to draw it for the companies then the graphs shows the inflation rate for both two companies. There are some seasonal increases and decreases but generally we can say there is an increase of inflation rate after 2017Q3.

**Table 5.2:** Descriptive Statistics for Inflation Rate

FIRM	Mean	Max	Min	Std Dev	Obs
All	1.139643	6.30000	-0.40000	1.282037	56

Table 5.2 shows descriptive statistics for inflation rate mean of inflation rate in the period is %1.13 and maximum value is %6.3 and minimum value is -0.4. Standard deviation shows that there is a big variation in inflation rate.

**Table 5.3:** Descriptive Statistics for NMC

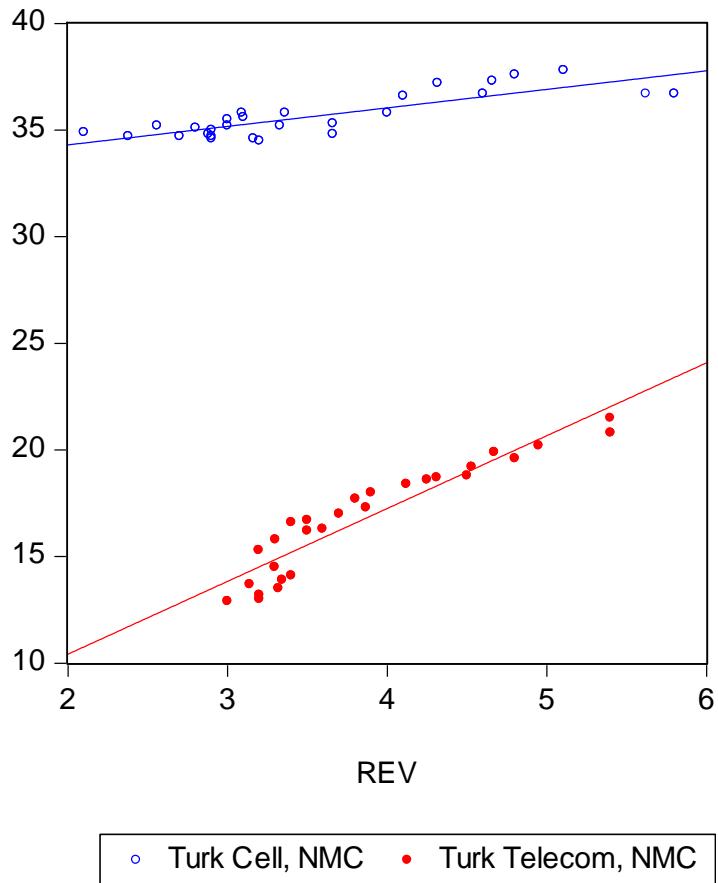
<b>FIRM</b>	<b>Mean</b>	<b>Max</b>	<b>Min</b>	<b>Std Dev</b>	<b>Obs</b>
Turkcell	35.6517	37.80000	34.50000	1.010108	28
Turk Telekom	16.83571	21.50000	12.9000	2.58821	28
All	26,2424	37.8000	12.90000	9.689525	56

Table 5.3 shows descriptive statistics for number of mobile customer for all companies and two companies separately. Mean of number of mobile customer in the period is nearly 26 millions and 35 millions of it from Turkcell and 16 million of it from Turk Telekom. Turkcell has a great value considering number of mobile customer.

**Table 5.4:** Descriptive Statistics for REV

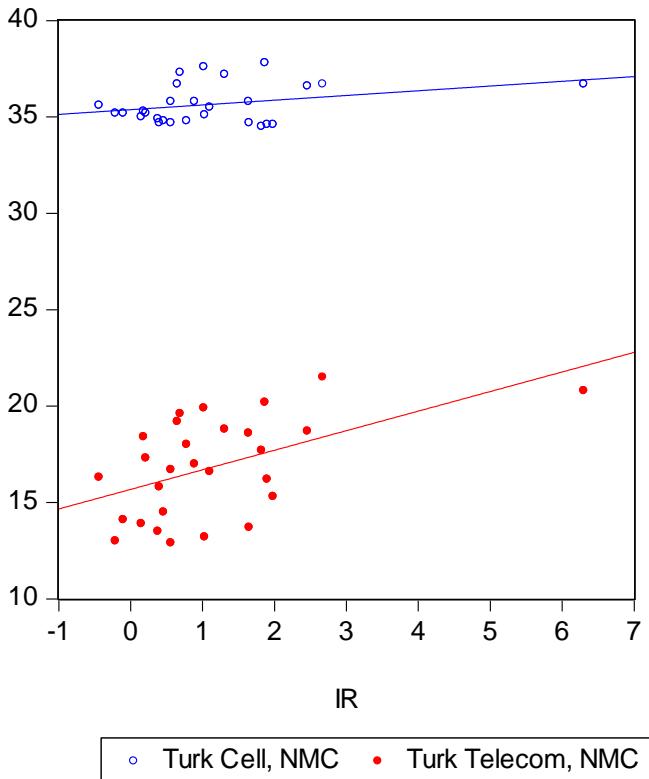
<b>FIRM</b>	<b>Mean</b>	<b>Max</b>	<b>Min</b>	<b>Std Dev</b>	<b>Obs</b>
Turkcell	3.560107	5.80000	2.100000	0.973827	28
Turk Telekom	3.878036	5.40000	3.000000	0.701369	28
All	3.719071	5.80000	2.100000	0.856017	56

Table 5.4 represents the revenue of the companies and the results show that the mean value of the revenue of Turk Telekom is higher than Turkcell. Although mean value of Turk Telekom is higher than Turkcell, highest maximum value of revenue is Turkcell revenue and minimum is Turk Telekom. This result shows that mean of Turk Telekom revenue is highest but Turk Telekom cannot reach the maximum revenue of Turkcell also Turkcell revenue has not reached minimum value of Turk Telekom.



**Figure 5.4:** Scatter diagram of NMC and REV

Figure 5.4 shows scatter diagram for number of mobile customer and revenue for Turkcell and Turk Telekom and the increasing trend can be seen for both companies. In the diagram on the vertical axis number of customer of the firms are presented and the revenue is on the horizontal axis. The relationship between variables show that: If the revebeue increase NMC is increase. Thus we say that there is a positive correlation between these two variables. However it is better to measure correlation coefficints to see relationship.



**Figure 5.5:** Scatter diagram of NMC and Inflation

Figure 5.5. shows scatter diagram for number of mobile customer and inflation rate for Turkcell and Turk Telekom. The diagram points out that there is a increasing trend between the variables for both companies. It looks like a positive correlation between the variables. To investigate the relationship we calculate the correlation coefficient for the variables. Table 5 shows the result of correlation coefficient.

**Table 5.5:** Correlation Coefficient

	IR	NMC	REV
IR	1.000000		
t-Statistic	-----		
Probability	-----		
NMC	0.083254	1.000000	
t-Statistic	0.613924	-----	
Probability	0.5418	-----	
REV	0.579996	-0.035486	1.000000
t-Statistic	5.231997	-0.260930	-----
Probability	0.0000	0.7951	-----

The results show that there is a positive and significant relation between revenue and inflation. It is expected result based on the theory of economics. If the price increase the revenue of the firm will increase under the ceterus paribus condition. If there is no customer loyalty after the increase in prices customers leave from the company and revenue will be decreased. There is no significant relationship between independent variables and dependent variables.

At last we estimate panel data regression model. First OLS model is estimated for pooled data then fixed effect model and “random effect” model are estimated.

Table 5.6 shows the pooled data model for the variables and the F statistics of the model show that model is not significant then we don't interpret this model. We present this result to show pooled model is not convenient for this data. It means that we cannot treat this data like a cross sectional data

**Table 5.6:** OLS Model

<b>Variable</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-statistic</b>	<b>Prob.</b>
C	30.21112	6.444147	4.688150	0.0000
REV	-1.428943	1.891875	-0.755305	0.4534
IR	1.184271	1.264982	0.936196	0.3534
Effects Specification				
R-Squared	0.017507	Mean dependent Var		26.24643
Adjusted R-Square	-0.019568	S.D dependent Var		9.689525
S.E of Regression	9.783870	Akaike info criterion		7.541430
Sum squared resid	5073.378	Schwarz criterion		7.559931
Long Likelihood	-205.6401	Hanan-Quinn criter		7.493496
F-Statistic	0.472195	Durbin-Walson Stat		0.40182
Prob.F-Statistic	0.626230			

**Table 5.7:** Fixed Effect Model

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	19.63412	0.8716893	22.52412	0.0000
REV	1.798598	0.256417	7.014346	0.0000
IR	-0.067397	0.16841	-0.400185	0.6907
Effects Specification				
Cross-section Fixed (dummy variables)				
R-Squared	0.983229	Mean dependent Var	26.24643	
Adjusted R-Squared	0.982262	S.D dependent Var	9.689525	
S.E of Regression	1.290507	Akaike info	3.416697	
Sum squared resid	86.60126	Schwarz criterion	3.561365	
Long Likelihood	-91.66751	Hanan-Quinn criter	3.472784	
F-Statistic	1016.203	Durbin-Walson Stat	0.180549	
Prob. F-Statistic	0.000000			

Table 5.7 present “fixed effect” results. In this model F staitstics is statisally significant in 1% level. Also revenue variable is statistically significant in 1% level too also it is positive. This result show that revenue has a positive effect on number of customers. It means that relationship between revenue and number of mobile customer is positive. It is compatible with our expectations. If the revenue increase the marketing expensive and customer relationship expenses are increase therefore number of customer increases. R squared of the model is very high it means that te revenue has great explanatory ratio on number of customer. Inflation rate is not statistically significant it can be interpreted as a prices has no effect on number of mobile customers. This result is the proof of our second hypothesis. Prices hasn't any effect on customer loyalty because our dependent variable is the proxy of customer loyalty.

At last we estimate “random effect” model . The results show that the “random effect” model is not significant bassed on F test.

**Table 5.8:** Random Effect Model

<b>Variable</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-statistic</b>	<b>Prob.</b>
C	30.21112	5.868457	5.148953	0.0000
REV	-1.428943	1.72864	-0.829400	0.4106
IR	1.18427	1.151974	1.028036	0.3086
Effect Specification				
Period Random			<b>S.D.</b>	<b>Rho</b>
Idiosyncratic Random			0.000000	0.0000
Weighted Statistics				
R-Squared	0.017507	Mean dependent Var	26.24643	
Adjusted R-Squared	-0.019568	S.D dependent Var	9.689525	
S.E of Regression	9.783870	Sum squared resid	5073.378	
F-Statistic	0.472195	Durbin-Walson Stat	0.40182	
Prob. F-Statistic	0.626230			
Unweighted Statistic				
R-Squared	0.017507	Mean dependent Var	26.24643	
Sum squared resid	5073.378	Durbin-Walson Stat	0.40182	

We have two hypothesis first is there is a positive relationship between revenue and number of mobile subscribers and second is customer has a loyalty in telecommunication sector. To investigate second hypothesis we have to find no relationship between prices and number of customers. We use inflation rate as a prices. Estimated three types of panel data models which are OLS, “fixed effect” model and “random effect” model. The results show that our two hypothesis are hold for Turkish telecommunication sector.

## **6. CONCLUSION**

With the globalization process accelerating in recent years, the competition among the companies is increasing, and there are radical changes in customer demands and needs. Providing customer loyalty as a natural result of this process is of utmost importance in ensuring the continuity of the companies and achieving competitive advantage.

The opinion, which is widely accepted by many scientific experts in the market and in the market, is that the balance of power in marketing is shifted to customers rather than producers, distributors or retailers. It is an important advantage for the company to increase their loyalty to a business and to prefer that business in spite of other businesses because the cost of acquiring new customers is higher than the cost of retaining existing customers. There are many different definitions for customer loyalty which are behavioural measurements, attitudinal measurements, and composite measurements.

Because of the importance of competition in global markets customer loyalty is a very important aspect to decide the success of the firms. Moreover, even a small increase in customer loyalty leads to a larger profit increase. A 5% increase in customer loyalty can increase the profit by 25-80%. A customer with high satisfaction is six times more loyal than the average satisfied customer. Only 4% of the dissatisfied customers communicate their complaints to the business. It is clear from these statistics about customer behavior that customer loyalty is very important for companies. Also resistance to change and trust have effect on customer loyalty.

Nowadays, rapid and multi-faceted changes in the technology field in the world cause a seriously competitive environment especially in the mobile phone market and thus a significant transformation in customer demands and needs. In this market where development and change are very fast, especially large and powerful companies make long-term investments and offer high-quality products to their customers.

However, considering the consumer profiles, demands, and needs that change at the same rate in this market, the priority of the customers in purchasing preferences may change. In Turkey, the mobile phone market is growing, with almost the speed of light.

Moreover, customer loyalty has five phases . In these phases process goes as follows; customer has no information and attitude about the product, cognitive dimension starts, customer develops an unfavourable or favourable attitude, customer behave and whether they will repurchase and at last customer has loyalty of product.

Our aim is to investigate if there is a customer loyalty in Turkish Telecom sector; specifically is there a sensitivity for prices in Turkish Telecom sector. To do this we use two Turkish telecom sector companies which are Turkcell and Turk Telekom. We estimate a panel data model to test customer loyalty in the Turkish telecom sector. To do this analysis, we use revenue and number of mobile customer data of two mobile phone operator and inflation as a proxy of telecom tariffs. Especially in recent years showing Turkey as well as the quality they provide in the mobile phone market with the strong corporate image of the company also operates in the market for many years, it seems to be common to the forefront of the market share of other competitors. In this case, companies are trying to maintain their existing customer market share before seeking new customers in order to maintain their current market shares.

The results show that price has no effect on customer loyalty but revenue has great effect. For further researches tariffs of the telecommunication companies can be used as a dependent variable and this relationship can be estimated more robustly.

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