

**T.C.  
ISTANBUL AYDIN UNIVERSITY  
INSTITUTE OF SOCIAL SCIENCES**



**DETERMINING THE MAIN COMPONENTS OF MOBILE COMMERCE  
RELATED TO CUSTOMERS' DEMOGRAPHICAL PROPERTIES**

**THESIS**

**Kemal DEMİR**

**Department of Business**

**Business Administration Program**

**DECEMBER 2015**



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**M.Sc. THESIS**

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**( Y1212.130010 )**

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**Thesis Advisor: Assistant Prof. Dr. Tuğba ALTINTAŞ**

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T.C.  
İSTANBUL AYDIN ÜNİVERSİTESİ  
SOSYAL BİLİMLER ENSTİTÜSÜ MÜDÜRLÜĞÜ

**Yüksek Lisans Tez Onay Belgesi**

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.....

Not: Öğrencinin Tez savunmasında **Başarılı** olması halinde bu form **imzalanacaktır**. Aksi halde geçersizdir.



*To my family and fiancée,*



## **FOREWORD**

When a person visits the new places mostly cannot reach what searching for. If you go touristic places of Istanbul you can miss “the best” or “must see” coffees or restaurants and other activities.

Customers all around and they want to see our products or services. The most important thing about that needs and services how can they intersects. Sometimes needs are so sudden and if the customer doesn’t find it in that moment, they can change their mind another substitute product or service in that moment.

Latest improvements of computers, wireless and mobile devices uses connection to electronic web pages, or some applications and they help the people recognize the products or services and that drive the people make decision about in that very moment and they can try to reach geographically that needs what they want to buy. For example, one of my friend and I wanted to find a restaurant/bar at Kadıköy and he searched that bar from internet for address and also in Google maps for navigation from his smartphone. We find the street but there are full of bars, coffees, restaurants there, we used the navigation to find the right bar. I just realized the technology helping us very much in that important point. It happened before in dry-cleaner searching, a cell phone model that I couldn’t find in tech markets, so I found it on a web store and I ordered from E-commerce web page.

Smartphones, tablets, ultra-books have growing sectors in today’s world and they are effecting the customer’s decisions because of developing mobile internet and Wi-Fi services and location based search applications or web pages. These companies know where you are because of GPS location systems or Wi-Fi areas and they can offer or send you or inform you about their new product or service.

If companies want to reach their customers they must use electronic commerce and mobile commerce in future because this is the powerful tool for marketing their products or services.

**December 2015**

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## ABBREVIATIONS

<b>1G</b>	: First Generation
<b>2D</b>	: Two Dimension
<b>2G</b>	: Second Generation
<b>3,5G</b>	: Third and Half Generation
<b>3G</b>	: Third Generation
<b>4G</b>	: Fourth Generation
<b>ACI</b>	: Automatic Content Identifier
<b>ATM</b>	: Automatic Teller Machine
<b>AMPS</b>	: Ampere
<b>B2B</b>	: Business to Business
<b>B2C</b>	: Business to Consumer
<b>BTK</b>	: Information and Communication Technologies Authority
<b>C2B</b>	: Consumer to Business
<b>C2C</b>	: Consumer to Consumer
<b>CD</b>	: Compact Disk
<b>CDMA</b>	: Code Division Multiple Access
<b>CMI</b>	: Consumer Manner Inventory
<b>CRM</b>	: Customer Relationship Management
<b>DVD</b>	: Digital Video Disk
<b>E-Banking</b>	: Electronic Banking
<b>E-Commerce</b>	: Electronic Commerce
<b>EDGE</b>	: Enhanced Data rates in GSM Environment
<b>EDI</b>	: Electronic Data Interchange
<b>E-Government</b>	: Electronic Government
<b>E-Mail</b>	: Electronic Mail
<b>EMS</b>	: Enhanced Message Service
<b>E-Payments</b>	: Electronic Payments
<b>ETICAD</b>	: E-Commerce Web pages and Administrators Association
<b>EVDO</b>	: Enhanced Voice-Data Only
<b>GDP</b>	: Gross Domestic Produce
<b>GIF</b>	: Graphic Interchange Format
<b>GPRS</b>	: General Packet Radio Service
<b>GPS</b>	: Global Positioning System
<b>GSM</b>	: Global System for Mobile Communications
<b>HTML</b>	: HyperText Markup Language
<b>HTTP</b>	: HyperText Transfer Protocol

<b>ID</b>	: Identifier
<b>IP</b>	: Internet Protocol
<b>JPEG</b>	: Joint Photographic Experts Group
<b>KBPS</b>	: Kilobits Per Second
<b>Kr</b>	: Kuruş
<b>LBS</b>	: Location Based Services
<b>LED</b>	: Light Emitting Diode
<b>LTE</b>	: Long Term Evolution
<b>MAP</b>	: Mobile Application Part
<b>MBPS</b>	: Megabytes per Second
<b>M-Commerce</b>	: Mobile Commerce
<b>M-Marketing</b>	: Mobile Marketing
<b>MMA</b>	: Mobile Marketing Association
<b>MMS</b>	: Multimedia Message Services
<b>MO</b>	: Mobile Originated
<b>MP3</b>	: MPEG-1 Audio Layer 3
<b>MP4</b>	: MPEG-4 Part 14
<b>MT</b>	: Mobile Terminated
<b>NFC</b>	: Near Field Communication
<b>NMT</b>	: Nordic Mobile Telephones
<b>NTT</b>	: Nippon Telephone and Telegraph
<b>OECD</b>	: The Organization for Economic Co-operation and Development
<b>OS</b>	: Operating System
<b>PC</b>	: Personal Computer
<b>PDA</b>	: Personal Digital Assistant
<b>PIN</b>	: Personal Identification Number
<b>POS</b>	: Point Of Sale
<b>PPC</b>	: Pay per Click
<b>QR</b>	: Quick Response
<b>RFID</b>	: Radio Frequency Identification
<b>ROI</b>	: Return on Investment
<b>RSS</b>	: Really Simple Syndication
<b>RTOS</b>	: Real-Time Operating System
<b>SEO</b>	: Search Engine Optimization
<b>SIM Card</b>	: Subscriber Identity Module Card
<b>SMS</b>	: Short Message Services
<b>SMSC</b>	: Short Message Service Center
<b>SPAM</b>	: Unsolicited Electronic Messages
<b>SPSS</b>	: Statistical Package for the Social Sciences
<b>SSL</b>	: Secure Socket Layers
<b>TACS</b>	: Total Allowable Catches
<b>TACS</b>	: Total Access Communication Systems
<b>TDD</b>	: Time Division Duplexing
<b>TDMA</b>	: Time Division Multiple Access
<b>TD-SCDMA</b>	: Time-division Synchronous Code-division Multiple Access
<b>TL</b>	: Turkish Lira

<b>TUIK</b>	: Turkish Statistical Institute
<b>TUKCEV</b>	: The Foundation of Consumer and Environment Education
<b>TV</b>	: Television
<b>U.S.</b>	: United States
<b>UK</b>	: United Kingdom
<b>UMTS</b>	: Universal Mobile Telecommunications System
<b>URL</b>	: Uniform Resource Locator
<b>WAP</b>	: Wireless Application Protocol
<b>Wi-Fi</b>	: Wireless Fidelity
<b>WiMAX</b>	: Worldwide Interoperability for Microwave Access
<b>xDSL</b>	: X Digital Subscriber Line



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## TÜKETİCİLERİN DEMOGRAFİK ÖZELLİKLERİ İLE İLGİLİ MOBİL TİCARET ANA BİLEŞENLERİNİN BELİRLENMESİ

### ÖZET

Teknolojik gelişmeler sayesinde zamanla ticaret değişmiştir. Şimdi mobil çağa ulaştık ve bizler her şeyi cebimiz kadar olan bilgisayar benzeri mobil cihazlarımızla yapabiliyoruz. Ürün ve satıcıların çeşitliliği müşteriler için büyük ve karmaşık alışveriş çevresi oluşturmaktadır. Bunun gibi pazarlar satıcıları müşterilerinin isteklerini yakından anlamaya ve onları kendilerine uygun ürün ve hizmetlere yönlendirmeye itmiştir.

Mobil ticaret müşterilere mobil cihazları aracılığıyla ulaşmak ve yeni bağlantılar oluşturmak için yeni ve etkili bir kanaldır. Elektronik ticaretin avantajları mobil ticaret ile yeni bir aşamaya taşınmıştır. Bu yeni aşamada ticaret ve iletişim kanunları, altyapı, güvenlik, tüketici alışkanlıkları ve tutumları hakkında kat edeceği yol vardır.

Bu araştırma müşterilerin demografik özelliklerinin mobil ticaret ana bileşenleri ile ilişkisini hedef almaktadır. Sonuç ve öneriler bölümünde, anket sonuçları değerlendirilmiş ve demografik özelliklerin mobil ticarete olan ilişkisi irdelenmiştir.

**Anahtar Kelimeler** : *M-Ticaret, Tüketicilerin Tutumları, Demografik Özellikler, Mobil Çağ.*



## **DETERMINING THE MAIN COMPONENTS OF MOBILE COMMERCE RELATED TO CUSTOMERS' DEMOGRAPHICAL PROPERTIES**

### **ABSTRACT**

The commerce changed in time according to the technological advances. Now we reached mobile age, and we can do every kind of things with our pocket size computer like mobile devices. The variety of products and sellers creates huge and complex shopping environment for the consumers. In such market pushed to the sellers understand their consumer's wants closely and guide them to suitable products and services.

Mobile commerce is a new and effective channel for reaching to the consumers and create new connections by their mobile devices. The advantages of electronic commerce moved on a new stage by mobile commerce. This new stage has way to go about trade and communication laws, infrastructure, security, consumer habits and attitudes.

This research aims at the relationship between customers' demographical properties and mobile commerce main components. In the section of the result and suggestions, the survey results and the demographical properties and mobile commerce relationship are evaluated.

**Keywords :** *M-Commerce, Consumer Attitudes, Demographical Properties, Mobile Age.*



## **1. INTRODUCTION**

Technology is become the nucleus of the productivity of market and commerce structures. Rise of technological improvements creates benefits for companies as well as consumers. Advances in technology and rapidly changing internet and mobile devices, connectivity between the persons, business and e-commerce advertising made a huge impact activities of countries and companies.

Market structures changed during the last decades. Today most of the companies using digital marketing system with their real market to reach their buyers/consumers. Electronic commerce removed the borders of the countries and companies started rivalry between them not only national but also internationally. Selling the products and services to customers are getting easy with E-commerce web pages with 7/24 online internet shopping. This competition improved the marketing skills of companies to succeed and save their market share from competitors.

Mobile phone usage rising and mobile companies growing with bigger profits. Recent years internet connected portable devices are highly increased. Especially Smartphone users exploded very much. Smartphones are today giving the experience of mobile computer, telephone, TV, movie player, camera, music player, scanner, gaming, navigation with the help high speed mobile internet connectivity. Mobile industries thrive fast nowadays. The companies must have followed these trends if they want to get success at the business.

Mobile devices becoming more common than personal computers around the world. Mobile devices allows the individuals to access the internet when they are moving even far distances have no market infrastructure exist. Mobile is a new and popular medium among people in the world.

Mobile industry created a new market and customers have new attitudes for this market. Attitudes of the customers are the dynamic side of the Mobile commerce. Managers must know and understand their target customers and give them nice

service and products by arranging commerce ingredients. Information age culture changed the costumers are more active on the internet and with this companies watching the visitors and collecting data and identifying their needs. Why the customers choosing one product to another and what is the main mechanism behind to buying a product must be understand by the companies. This is the main purpose of the examine consumer's attitudes.

Mobile commerce has a strategic position for company's success. I want to study that topic because I saw that smartphones as a revolutionary device for future of the world and they become inevitably a part of our lives. I want to imply the mobile commerce effectiveness and how that contribute and accelerate the company's success.

The first episode of the study introduction, in this episode main topic, main purpose of the study, literature reviews and the hypotheses are explained.

The second episode of the study defines concepts of commerce, e-commerce and mobile commerce and how these concepts are improved in time. In this episode, mentioned why the companies must follow the trends in commerce for their success.

The third episode of the study defined mobile consumers, mobile devices and mobile networks. In this episode, mobile consumer characteristics explained and how they changed in time with today's new type of connection speeds. Besides that, in this episode explained variety of wireless connections between consumers and corporations create new ways to reach their consumers.

The fourth episode of the study examined mobile commerce tools that help to create connection between consumers and sellers, improve consumer experience and maintain the advertising, marketing, commerce, payments, after sale relationship activities by these powerful tools.

The fifth episode of the study defined the concept of consuming, consumer and stages of the purchase process and focused on new technology and consumer interaction and factors that affect the consumer attitudes through mobile commerce activities. Turkish consumer profile outlined at the end of this part of the thesis.

The sixth episode of the study will be the last section, in this section mentioned method of research and the other details about thesis study and survey. The results of survey about customers' demographical properties evaluated and according to the results of the survey suggestions explained for the purpose of thesis.

### **1.1. Main Purpose of the Study**

The study focuses on the determining the main components of mobile commerce related to customers' demographical properties in Istanbul, Turkey by making a survey questioner. In the study main purpose is find out, customers' demographic properties have a significant relationship on mobile commerce.

### **1.2. Literature Review**

There are plenty of studies about consumer attitudes and mobile commerce. These studies tried to find out the variables which properties effects mobile commerce and what are the consumer's attitudes for mobile commerce.

Nemet's research about the evolution of M-Commerce concludes that in order for m-commerce to become a truly viable customer channel, the infrastructure to support instantaneous interactions and the delivery of real-time, personalized information must be put in place. Collecting feedback from early experimenters will also be critical in defining the value proposition of m-commerce offerings to consumers in the future. In the meantime, companies should focus narrowly on taking advantage of the unique strengths of the channel, and meeting clearly defined needs for targeted, time-sensitive, and location-specific information. (Nemet, 2001, p.57)

Gribbins's research about investigation into employees' acceptance of integrating m-commerce into organizational process results shows that, employees at one Fortune 100 company indicated that employees have an interest in having on-demand mobile access to their applications. The findings indicate that technology-related and individual-related constructs alone do not adequately explain the variance in attitudes and usage behavior. Also additional factors such as environment in which technologies are employed effects the behaviors. Identifying these factors and addressing related concerns during the technology development process, can reduce

some of the uncertainty associated with usage and can strengthen the solutions' potential for success (Gribbins et al., 2003).

Wu's research about what drives mobile commerce results shows that, M-commerce is still in its infancy, mobile devices or relative applications are still under development and in progress, yet, it is pointed out that cost is the least significant determinant in the initial M-commerce context on any factor but perceived ease of use. Furthermore, M-commerce has limited types of applications and that will cause insufficient understanding of M-commerce and its applications will lower consumer intention to use it (Wu et al., 2004).

Tsang, Ho and Liang's research about attitudes towards Mobile advertising showed that respondents held negative attitudes about receiving mobile ads. Their attitudes were favorable if advertisements were sent with permission. This implies that permission-based advertising may become a major mechanism in the mobile environment in the future. The respondents were more willing to accept incentive-based mobile advertising. Overall, it is clear that mobile advertising is going to be the future trend (Tsang et al., 2004)

Sarisakal published a paper about mobile commerce, developing technology of mobile communication made mobile tools secure for commerce and payments but investments are not enough for mobile commerce world yet (Sarisakal, 2005).

Hsieh published a paper about mobile commerce, assessing new business opportunities, it is concluded the future of the M-Commerce is very optimistic. Global wireless subscribers are expected to reach between 1,5-2 billion by the year 2010. There will be more wireless Internet users than fixed line users, and there will be more mobile phones than fixed line phones by 2003. Mobile communication will be an essential leg of the information infrastructure to connect people to the information sphere while on the move. M-Commerce can transform people's lifestyle with unique, personalized and location based services. People will be able to order movie tickets on the go, find directions instantaneously, use the phone to pay for coke from vending machines, access the internet, send email while relaxing on the beach, and have access to the office scheduler from anywhere, anytime ( Hsieh, 2007).

Barutçu's research about Consumers' attitudes towards Mobile Marketing and Mobile Commerce in Consumer Markets in Turkey results shows that, all GSM operators announce the launch of new mobile services and the B2C mobile commerce and mobile marketing will be obviously becoming more popular in Turkey. It is too early to say whether mobile commerce and mobile marketing services are accepted or not in Turkey, the findings of the research conducted Turkish mobile phone users suggest that mobile phone users have positive attitudes towards mobile marketing tools except for mobile shopping (Barutçu, 2008).

The research made by Kini in Chile country results shows that, it was observed that Chileans are highly network ready and are adept at downloading many ring tones per year into their cell phones. This would have usually indicated their propensity to use mobile devices to conduct M-Commerce. One can conclude that there is a high level of usage of e-Commerce among this respondent group in Chile. Respondents in the study are familiar with the technology and applications, yet have not transformed themselves to the appreciative and innovative users of mobile technology to leverage the everywhere and always available feature of the mobile technology (Kini, 2009).

Yamamoto's research about the mobilized marketing and the consumer concluded that in general, the electronic procurement infrastructure in Turkey is developing but still insufficient. To date, the most significant problem is the security problem, and the most advanced area can be seen as the financial area. However, security problems weaken the strengths of the financial infrastructure (Yamamoto, 2010, p.260).

According to the research Safeena about customer's adoption of Mobile-Commerce results shows that perceived usefulness, perceived ease of use, subjective norm, consumer awareness and perceived risk are the important determinants of mobile banking adoption. These factors have a strong positive effect on acceptance of mobile banking (Safeena et al., 2011).

Turan's research about the factors that determines consumers behaviors about internet shopping in Turkey results shows that, internet shopping is depends on the consumer's aim for purchase and their faiths, action and behavioral controls. Furthermore, consumer actions also effects by their near individual's ideas that is important for them (Turan, 2011).

According to the survey report of comScore shows that, in United States of America %38 of the smartphome users wishes to make all kind of shopping on their mobile devices (ComScore, 2011)

According the research Venkatesh about consumer acceptance and use of information technology results shows that consumers use of technology the effects of hedonic motivation, price value, and habit are complex. First, the impact of hedonic motivation on behavioral intention is moderated by age, gender and experience. Second, the effect of price value on behavioral intention is moderated by age and gender. Finally, habit has both direct and mediated effects on technology use and these effects are moderated by individual differences (Venkatesh et al., 2012)

Khansa, Zobel and Goicochea's research about Mobile commerce Innovations showed that it is apparent that mobile devices have changed e-commerce as we know it by empowering consumers to make better decisions and by supporting them, through the use of innovative technologies and services, in the process of creating value for themselves and for others. Not only has this helped to create more efficient and enjoyable shopping experiences for consumers, but it has also allowed retailers to improve their productivity, reduce their costs, and do a better job of providing customers with products that meet their needs and expectations. As the technical infrastructure and the business environment continue to evolve, it is certain that the realm of m-commerce will continue to generate new innovations that will ultimately make a significant impact on our society (Khansa et al., 2012)

According the research Amoroso about building a research mobile for mobile wallet consumer adoption, the case of mobile Suica in Japan results shows that technology-based payment solutions hinges on addressing the needs, perceived or real, of consumers whose adoption will determine whether any specific mobile payment systems becomes a standard. Japan is at the forefront of such technology and a number of domestic companies have been successfully developing and integrating mobile payments for some time. Also it is pointed out in the study, cultural factors play an important role in the adoption of the mobile wallet. In Japan, there is a technology push culture, where large organizations in the ecosystem, such as Sony, have technology advances. Once developed, these technologies are introduced into mobile devices and consumers use these innovations (Amoroso et al., 2012).

Pew Internet and Elon University report about the future of the money in a mobile age shows that, mobile wallets will be in use broadly soon. %65 of the survey attendants wishes that they can able to do every payment by their mobile wallets in 10 years. Google wallet and similar applications are making credit cards mobile cards so it is considering after 2020 such smartphone applications will replace to money (Smith et al., 2012)

According to the report of comScore mobile consumers are using their mobile devices for reaching detailed information and adding shopping richness to their shopping experience. In the survey they pointed out %62 of Spanish and American users using their mobile devices for reaching information they needed. According the examined mobile data between the years 2011-2012, %35 of the French mobile users sharing their photo shots with their friends when they are visited a shopping store, %31 of them is making research by their mobile devices. According to another research I've pointed out; %78 of the mobile users who visiting physical shops are using their smartphones for searching nearest shops, %63 of them is comparing the prices in the internet. In the research, %68 of the tablet users are making researches before buying, %53 of them is reading the product comments before the purchases (Sütçü, et al. 2013, p.58-59)

The research made by Xu about M-commerce development in China results shows that, people from different age groups have different perceptions for m-commerce development, users with different backgrounds might view m-commerce development differently, user's economic level has impact on their exposure to advanced m-commerce development and applications. People with higher economic status tend to have more opportunity to use more advanced m-commerce applications, probably because these advanced applications are normally more expensive also gender and education level have no significant impact on user's perceptions of m-commerce development (Xu, 2013).

Bal, research about technology, youth and mobile life and cell phone usage attitudes on daily life points out cell phones are voice and written communication, internet, social media applications, camera, satellite connection, maps and lots of other features in its little body become social and cultural phenomenon. In society almost at every age individuals addicted to these devices inevitably. According to the survey average aged 21 years old 1175 individuals are using mostly cell phones for 7 years.

That shows most of the individuals are met with the cell phone technology in their early ages. The survey shows that the attendants talking with their phones daily 40 minutes. Also results shows women are talking and sending SMS more than men with their cell phones (Bal, 2014, p.223-225).

Gümüş research focused how internet ads affect consumer's purchase behaviors and made a survey in Istanbul with 126 attendants. In the survey %77 attendants were employees. According to the survey results %74 of persons are effected by internet ads to make purchases. %32 of the persons preferred to get information by reading comments about sales shop from internet before or after purchase. %93 of the persons feels acquaintance when they saw the products which they saw in the internet ads before (Gümüş et al., 2014).

The research made by Mishra in India country results shows that, attitude and perceived controls are significantly related with intention. Indians spend a lot time with mobile phones and they find it to be very important device in their day to day life, generally they perceive many benefits from mobile phones apart from communication. As a result, they may be showing high value for attitude towards m-commerce too. Furthermore, if marketers are able to create positive attitude towards m-commerce in consumers mind it will lead to higher intention and finally adoption behavior (Mishra, 2014).

### **1.3. Hypotheses**

This study aims at try to find out significant relationships between consumers' demographic properties on mobile commerce by testing the hypotheses. For testing this purpose the hypotheses are listed below:

H1: There is a relationship between gender and attitudes on mobile commerce.

H2: There is a relationship between age and attitudes on mobile commerce.

H3: There is a relationship between marital status and attitudes on mobile commerce.

H4: There is a relationship between education and attitudes on mobile commerce.

H5: There is a relationship between employment and attitudes on mobile commerce.

H6: There is a relationship between monthly income and attitudes on mobile commerce.

H7: There is a relationship between monthly saving ratio and attitudes on mobile commerce.



## **2. COMMERCE, E-COMMERCE AND M-COMMERCE**

### **2.1. Commerce**

Commerce defines as, exchange of goods or services for money or in kind, usually on a scale large enough to require transportation from place to place or across city, state, or national boundaries (Business Dictionary, 2014).

In time, with the digital revolution everything changing with this digital age as commerce become E-Commerce these days. In this thesis before to take a look at the M-Commerce, I wanted to start with one step backward from the M-Commerce.

### **2.2. E-Commerce**

#### **2.2.1. Definition of e-commerce**

The Organization for Economic Co-operation and Development (OECD) defines the E-commerce: “An e-commerce transaction is the sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing of orders. The goods or services are ordered by those methods, but the payment and the ultimate delivery of the goods or services do not have to be conducted online. An e-commerce transaction can be between enterprises, households, individuals, governments, and other public or private organizations. To be included are orders made over the web, extranet or electronic data interchange. The type is defined by the method of placing the order. To be excluded are orders made by telephone calls, facsimile or manually typed e-mail.” (OECD Glossary, 2013).

Kalakota and Whinston refer to a range of different perspectives for E-commerce (Chaffey, 2011, p.10):

1. A communications perspective – the delivery of information, products or services or payment by electronic means.

2. A business process perspective – the application of technology towards the automation of business transactions and workflows.
3. A service perspective – enabling cost cutting at the same time as increasing the speed and quality of service delivery.
4. An online perspective – the buying and selling of products and information online.

E-commerce is facilitated by a range of digital technologies that enable electronic communications. These technologies include Internet communications through web sites and e-mail as well as other digital media such as wireless or mobile and media for delivering digital television such as cable and satellite (Chaffey, 2011, p.11).

### **2.2.2. Brief history of e-commerce**

E-commerce was introduced 40 years ago and, to this day, continues to grow with new technologies, innovations, and thousands of businesses entering the online market each year. The convenience, safety, and user experience of ecommerce has improved exponentially since its inception in the 1970's.

1960-1982: Paving the way for electric commerce was the development of the Electronic Data Interchange (EDI). EDI replaced traditional mailing and faxing of documents with a digital transfer of data from one computer to another. Michael Aldrich, an English inventor, innovator and entrepreneur is credited with developing the predecessor to online shopping. In 1979 Aldrich connected a television set to a transaction processing computer with a telephone line and created what he coined, "teleshopping," meaning shopping at a distance.

1982-1990: It was apparent from the beginning that B2B online shopping would be commercially lucrative but B2C would not be successful until the later widespread use of PC's and the World Wide Web, also known as, the Internet.

90's to Present: In 1990 Tim Berners Lee, along with his friend Robert Cailliau, published a proposal to build a "Hypertext project" called, "WorldWideWeb." The inspiration for this project was modeled after the Dynatex SGML reader licensed by CERN. Berner's Lee decided he would take on the task of marrying hypertext to the Internet, in doing that, the process led to him developing URL, HTML and HTTP. National Science Foundation lifted its restrictions on commercial use of the NET in 1991, the Internet and online shopping saw remarkable growth. From the beginning,

there were many hesitations and concerns with online shopping but the development of a security protocol - the Secure Socket Layers (SSL) - encryption certificate by Netscape in 1994 provided a safe means to transmit data over the Internet. The mid-nineties to 2000's saw major advancements in the commercial use of the Internet. Amazon, launched in 1995 as an online bookstore. Currently, Amazon offers not only books but DVDs, CDs, MP3 downloads, computer software, video games, electronics, apparel, furniture, food, and toys. In 2001, Amazon.com launched its first mobile commerce site.

Global ecommerce company, PayPal, began its services in 1998 and currently operates in 190 markets. Currently, PayPal manages more than 232 million accounts, more than 100 million of them active.

The growing use of the Internet, tablet devices, and smart phones coupled with larger consumer confidence will see that ecommerce will continue to evolve and expand. With mobile commerce gaining speed, more users are purchasing from the palm of their hand (Miva, 2011).

### **2.2.3. Types of e-commerce transactions:**

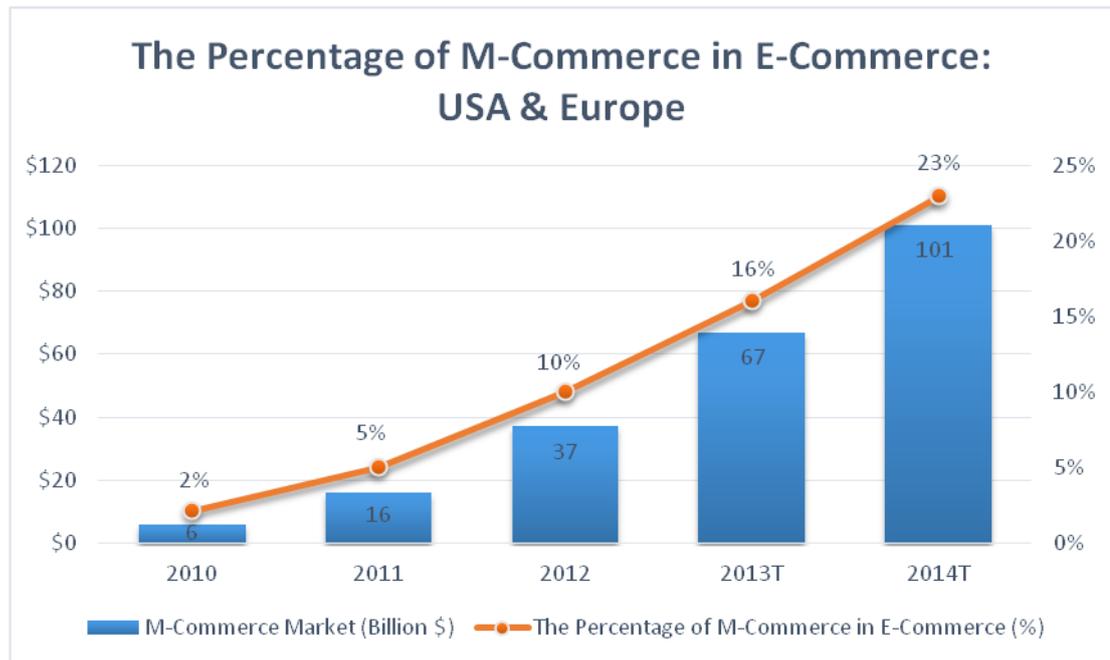
1. Business to customer (B2C) transactions between an organization and consumers.
2. Business to business (B2B) transactions between an organization and other organizations
3. Consumer to consumer (C2C) transactions between consumers but generally provided by web page.
4. Consumer to business (C2B) Consumers offers something to the business owners.
5. The diagram also includes government and public services organizations which deliver online or e-government services.

**Table 2.1 : Business or Consumer Models of E-Commerce Transactions**

		From: Supplier of content/service		
		Consumer or citizen	Business (organizatou)	Government
To: Consumer of content/service	Consumer or citizen	Consumer-to-Consumer (C2C)	Business-to-Consumer (B2C)	Government-to-Consumer (G2C)
		-eBay -Gittigidiyor -N11 -Peer-to-peer (Skype) -Blogs and communities -Product recommendations -Social networks: Facebook, Foursquare.	-Transactional: Hepsiburada -Relationship-building: BP  -Brand-building: Unilever -Media owner- News Corp. -Comparison intermediary: Akakçe, cimri, teknofiyat, ucuzu.	-National government transactional: Tax Service -National government information -Local government services
	Business (organizatou)	Consumer-to-Business (C2B)	Business-to-Business (B2B)	Government-to-Business (G2B)
		-Priceline -Consumer-feedback, communities or campaigns	-Transactional: Eurooffice -Relationship-building: BP -Media owner- Emap business publications -B2B marketplaces	-Government services and transactions: tax  -Legal regulations
	Government	Consumer-to-Government (C2G)	Business-to-Government (B2G)	Government-to-Government (G2G)
		-Feedback to government through pressure group or individual sites	-Feedback to government businesses and non-governmental organizations	-Inter-government services -Exchange of information

This table shows the transaction types of e-commerce between the commerce members (Chaffey, 2009, p.26).

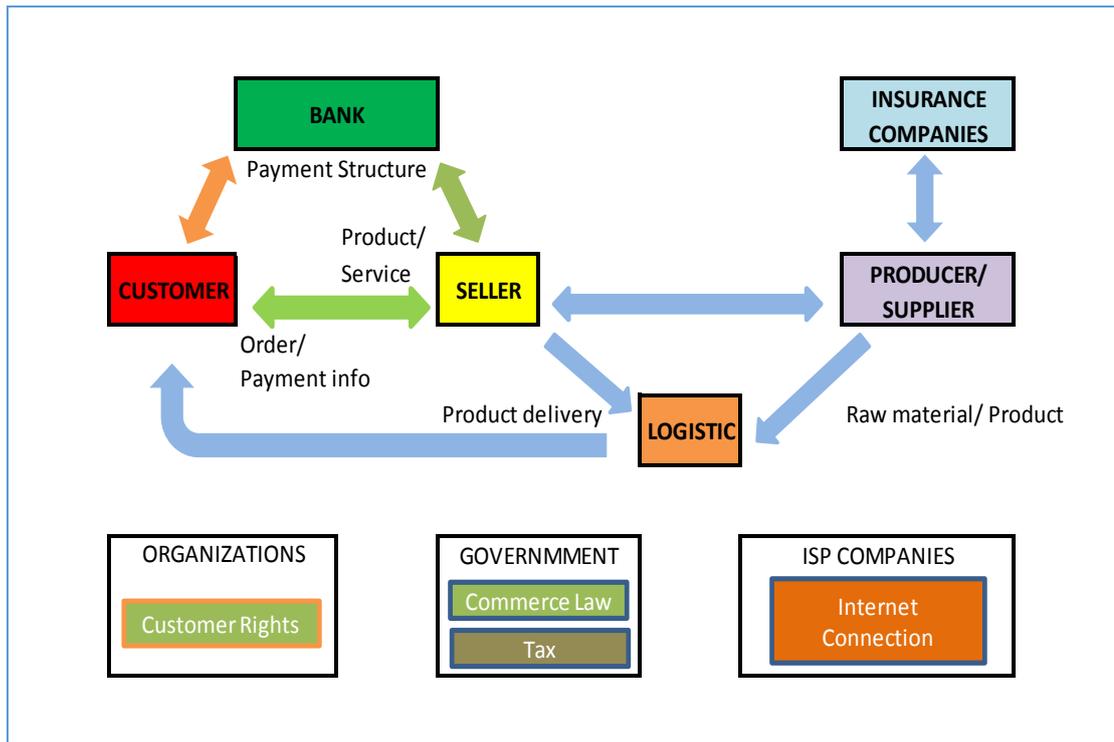
**Table 2.2 :** The Percentage of M-Commerce in E-Commerce: USA & Europe



According to the study about E-commerce shows that the M-commerce percentages are raising if we compare it with E-commerce sales in United States and Europe. Mobile Commerce sales reached 6 Billion \$ in 2010, which means %2.2 of the E-Commerce sales, 37 Billion \$ in 2012 (%10 of the E-Commerce Sales) and M-commerce estimated 101 Billion \$ sales in 2014 (%23 of the E-Commerce Sales). It is also estimated in the report United States of America’s mobile sales are risen %56 in last year, it is projecting that mobile commerce sales rise %25 of the E-Commerce sales in 2017 (Arfa, 2014, p.96)

#### **2.2.4. E-commerce structure**

E-commerce is structured in “virtual shops” that offer products and services online. Even “virtual shopping malls” have been created with lots of shops offering every kind of products for the sale. The most known way of Ecommerce is the B2C. E-commerce which consists in that online retailers manage for reaching to individual consumers through the website.



**Figure 2.1 : E-Commerce Structure**

In the figure above shows all the components that participate in the online purchasing and how they are structured. Today, this structure changed more complex structure with the mobile devices participation.

## 2.3. M-Commerce

### 2.3.1. Mobility

Mobility, is the technological solutions for the purpose needed by individuals that to reach the valuable information in time and make process over it to reach their aims. With this mobility giving us safe and real time information access or enter data from multiple sources at the same time. Also via mobility decision making process become faster and as a consequence productivity increasing. Mobility helping the information serving to the workers, rising the determination and profits, decreasing the costs of administration and its complexity and also that improvement of communication activities rising the customer satisfaction by serving their demands and providing service them on time with right answers (Özgüven, 2013, p.7).

Mobility changed the shopping ways and habits by also changed the communication, reaching the news and information, inspired to the entertainment world. This term, removed the borders of time and place.

Mobility term changing at the same time parallel to thrive of the human and its expanding the borders. Canals declared the worldwide smartphone selling numbers in 2011 488 millions sold at the same time 415 million computers are sold. In 2011, worldwide 63,2 million tablet sold and the rise rate of sold was %274. In Turkey the year 2010 smartphone market share was %15 but that percentage raised to %24 at the year 2011. 13 millions of smartphone sold in Turkey in 2011 and that number shouldn't be underestimated. The devices that compatible with the mobility rising increasingly, we can say that it's spreading and rising more and more. The people who uses smartphones and tablets realized the utilities and they cannot use other devices after that experiences. The new devices according to the improvements of the technology pushing to the changes of former ones. As a consequence demand is rising that kind of devices and at the same time mobility reaching a different point (Özgüven, 2013, p.9-10).

### **2.3.2. M-commerce and m-marketing**

There are not an exactly definition for mobile commerce. Every source are making slightly different that other ones (Mobileinfo, 2001).

M-Commerce for Nemet, the customer use of mobile devices to transmit the buying decisions to make transactions with others” (Nemet, 2001, p.7)

M-Commerce is for mobilecity, any digital transaction or information interaction made by using a mobile device and mobile networks that leads to transfer of real or perceived value in exchange for information, services or products (Mobilecity, 2014).

Mobile marketing, some of practices that enable businesses to transmit each other and touch with their crowd in an interactive and similar way through every mobile device or network (MMA, 2014).

As we understand from the definitions, mobile commerce, reaching to the customers by using remotely and wireless communication ways for common devices like cell phones, pocket pc's and the other devices, then customers or untethered customers

reached by the company makes own activities such as product, service, idea, process and the other persons.

Mobile marketing in last 5 years becoming a strong weapon in the hands of who makes commercials for the a crowd of people whose changed their aim and intensity of using media such TV, newspaper, radio etc. to Digital places (intensely mobile and internet usage). But thrive of this aim changer didn't happened like companies aimed for the mobile marketing, because after crowd spent more time and money on their mobile communications then companies followed them. For example, it's impossible to catch the young population by traditional media. They are using social media, instant messaging services, smartphone applications and mobile internet pages these places where they are now. The rise of the mobile commerce happened as a consequence of the customers selections. Because of that reasons we shouldn't look that new communication way like a discovery or an invention, we need to see that it's a playground for companies to attract their customers (Arslan et al., 2012, p.25-26).

### **2.3.3. Examining the five elements of mobile marketing**

**Organizations:** Organization is an establishment who buys sells products offerings and services and support the markets by these actions. Mobile commerce can implement every kind of business to make it more effective.

**Practices:** Practices contains lots of ways they are commerce activities making agreements, advertising, managing customer service and loyalty of consumers. In other words they are the all activities that an organization needs to make in active business. All of these practices can be attach to the mobile commerce.

**Engagement:** Engagement means the process the company and consumers interactions to reach them support them taking attention them feedback each other. Mobile commerce is making such engagement easier for both sides.

**Relevancy:** Mobile activities can give us info about person's location and time etc. if someone searching a product or service in a city the search engines helps to show nearest and open shop them what they are searching for. Mobile commerce is effective about finding relevant things for customers.

Mobile devices and networks: There are plenty of devices or networks but there are common points that companies can execute their commerce activities by using these mobile networks and mobile devices. (Becker et al., 2010, p.10-11)

#### **2.3.4. M-commerce**

Nowadays we are in the middle of the tech revolution is bigger than TV or PC. Now businessman challenging with what they will do with this mobile technology to serve the consumers effective way. The new mobile market will change everything we get accustomed (Martin, 2011, p.15).

During the information era customers has acquainted three kinds of screens, these are caused very important developments on commerce and marketing technique and the way they reach the customers. And every era awarded a prize who they are conformed to these screens.

The first screen, television, revolutionized the way sellers' interacted customers, TV allowed them to make their messages reach millions of people. Families watched that same programming and all were exposed to the same commercial messages. In the beginning of 1990's the main media instruments was television, radio, printed media, outdoor TV and cinemas coming to the mind.

The second screen, the PCs, advanced interaction; PCs allowed firms to reach and sell to new consumers easily and gain feedback about their products and services quickly. PCs made the commerce more interactively the consumers are more participated into the sell and buying activities besides they can reach information from long distances.

The third screen, we can say the Smartphone, giving a possibility to the consumers to create a direct way of communication with each other with easiness and to share their experiences every time and everywhere. The smartphones created technological and behavioral aspects will revolutionize the markets in long time (Martin, 2011, 15-17).

There are the reasons of digital services why improving so fast (Gümüş et al., 2014, p.11);

1. Microprocessors developed rapidly and parallel to this Personal Computers, Mobile Phones, PDAs, personal music players, gaming devices and the other electronic devices provided to the customers in low prices,

2. Digital storage systems provided digital data and contents can be served in form of compressed formats (for example: JPEG, MP3, MP4) maintained rich media video, picture, fun and other contents easily reached to the customers,
3. Because of the developments of telecommunication digital data connected with fiber optic networks and wireless connection provided to the customers in low prices,
4. The hardware and software which are improved to prepare and share the digital rich media contents become easy for the companies.

New digital mobility creating new consumers who wants more than traditional communications of the companies. New consumers wants to see new products in their active mobile devices and reach what they want about every product and service. They are in control, and marketers will be challenged to serve their needs and to interact with them in significant ways.

Mobile is a game changer: m-commerce is not just about using the phone to pay for something, it is about changing better the whole purchasing way. With mobile, commerce become hyper local that concerned with a specific, targeted geographic area. Serving the specific needs of users when and where those needs arise is what m-commerce is all about.

Mobile marketing involves much more than providing coupons and discounts. It's about committing to interactions with consumers and taking them to the new mobile environment that defines future (Martin, 2011, p.17).

According to the ETICAD (E-Commerce Web pages and Administers Association), in the world approximately 300 million of smart phone users exist. Commerce could also provide by mobile devices. It is suggested in the meeting of 2014 Q4, within the next 5 years Smartphone purchases will be equal to the amount of the purchases made by credit cards (ETICAD, 2014).

### **2.3.5. Mobile commerce is appropriate for our company?**

Mobile marketing's start point shouldn't be only making a web or mobile page. Instead of that we should ask ourselves "Is Mobile Marketing is appropriate for my business?"

There is a list of questions for understanding our business needs it or not:

1. Do you need new customers?
2. Do you want your customers visit you more often?
3. Do you want to rise your profits?
4. Do you want to reach more mass groups of people?
5. Do you want to differentiate your brand?
6. Do you want to rise your Return on investment (ROI)?
7. Do you want to your customers spend more money when they shopping from your company?
8. Are you searching new distribution channels?
9. Do you want to rise your market share?
10. Do you want to be in front of your customers 7/24?

Here in this list at least one or a few line is interested for any company, that shows us who doesn't want to improve the company's profits (Hopkins et al., 2013, p.21).



### **3. M-CONSUMERS, M-DEVICES AND NETWORKS**

#### **3.1. M-Consumers**

##### **3.1.1. Identifying mobile consumers**

There's no difference of wishes between mobile consumers and general crowd of people. In fact, if we take into account the prevalence of the mobile devices, the aim must be general crowd of the people.

In time customers using their phones more and more for other purposes, some main marketing methods are becoming outdated. Companies should provide better ways to reach customers.

There's some difficulty to create a "collective excitement" for the people who they are have same purposes and same wishes at the same time. Sport activities, politic meetings, concerts, ceremonies etc. could be a chance to create a focus on our brand and create a digital awareness (Hopkins et al., 2013, p.53-55).

We can divide the people into the groups to understand their characteristics:

##### **Generation Z : Digital Natives**

The generation who born before the internet defining as "Digital Immigrants". The generation who has lived their childhood after 1994 defining as "digital natives". The digital natives are the most effective group of the internet users. This group named as "The Net Generation" or "Millenials". This group of people cannot dream a world without cellphones and internet, these things for them not an innovative thing, for them it's a natural part of the life. Consequently, they are adopting the innovations very easily.

According to the "The Reset Generation" survey of Iniative Media, among the young people who was born between 1986-1992: The Reset generation, enters the market with the knowledge of the product information, compared prices and product user's comments. Furthermore, they are using their cellphones to get more information and

compare prices at the same time. So, marketers must provide a harmonic way to the customers can reach their brand with nice benefits. Marketers should use tactics to prize the customer mobile check-in. Then, they can create a value for their loyalty program.

### Generation Y

If we expand the borders of the people who grown with the internet, people who born between the years 1977-1996 named “Generation Y” could be added the group of digital natives. They are “Generation Y” members, searching for freedom, want to participate, self-confident and want to be respect by other to their experiences, expects of the marketing change. This group born with the internet and them wants to reach their wants so fast and their world is; fast; multitasking; instantly talking and answering with their; friends, teachers, moms-dads and experts are reachable simultaneously; there’s no borders and no hierarchy; human communication and face-to-face communications less needed to each other and everybody must have the chance to reach the free information.” Generation Y is living in very fast and changeable world than any other generation because of the digitalization.

### Digital immigrants

The group of people who uses internet after their youth accepted as digital immigrants. Even though, they are not capable for the digital world, this group of people growing faster and tries to benefits of the internet life.

Digital immigrants, doesn’t want to feel themselves untalented and insufficient about devices. On the contrary, they are proud of using technology and they feeling satisfaction to show their talents and they love the sharing.

### Impatient new consumers

New consumers has more demand than the other groups from past. Their demands are high and not satisfy easily. Asking questions and wants to understand their environment that surrounds them. They don’t like the corporations doesn’t say the truth or not transparent enough to them. New consumers understand a slow opening web page and exit that page instantly. They want brands must be ready for them every time and everywhere. If they don’t like a person or a company, they are putting out from their lists of them and they are marking the e-mails as a “spam” where they came from these sources (Karahasan, 2012, p.75-77).

The demands are moved to the Internet

For success the success of the companies always consider their consumer's physical and emotional needs and plan their ways to reach them. Even though the technology change but most of the basic needs stays same. Globally people have 6 main needs if we consider the internet activity nowadays (Karahasan, 2012, p.78):

1. Acquire the information
2. Shopping
3. Being with the similar people
4. Publishing their voices to everybody
5. Finding a game or fun friends
6. Taking recommendation, share their ideas and evaluations.

Under these basic needs we should understand our new consumers today and create our strategies to understand new demands and response instantly with the perfect supply. That is the key of success we must identify our customers first.

### **3.2. M-Devices and Networks**

#### **3.2.1. Exploring the types of mobile devices**

Nowadays if somebody talk about mobile commerce the main medium comes to the mind is mobile phone. Most of people underestimate the phones and their new capabilities of now they have. Besides there are lots of devices that individuals carry with them and they already a part of their daily life. Phones are now doing almost everything that PCs doing in their small screens.

There are three categories of mobile devices to achieve mobile activities (Becker et al., 2010, p.12-14):

The Feature Phone: this type of phone is the most widespread one out in the world. As of Dec 2013, about 67% of the phones carried in worldwide are feature phones (Emarketeer, 2014). This type of phone has a simple operation system have not much user experience for consumers. That means consumers only use voice, messages and limited internet.

The Smartphone: smartphones have similar features like PC they have a better operating system than feature phones and it can use multimedia, internet messaging, lots of applications, greater internet usage experience, bigger touchscreen, e-mail etc.

Smartphones have a big share in the world today and it's counting more and more every day. In the table below shows the penetration rates.

**Table 3.1 : Statistics of Smartphone Usage (EMarketer, 2013)**

<b>Smartphone Users and Penetration Worldwide, 2012-2017</b>							
Years	2012	2013	2014	2015	2016	2017	
<b>Smartphone Users (Billions)</b>	1,13	1,43	1,75	2,03	2,28	2,50	
% change	68,40%	27,10%	22,50%	15,90%	12,30%	9,70%	
% of mobile phone users	27,60%	33,00%	38,50%	42,60%	46,10%	48,80%	
% of population	16,00%	20,20%	24,40%	28,00%	31,20%	33,80%	
<b>Mobile Phone Internet Users and Penetration Worldwide, 2012-2017</b>							
Years	2012	2013	2014	2015	2016	2017	
<b>Mobile Phone Internet Users (Billions)</b>	1,58	1,91	2,23	2,50	2,75	2,97	
% change	37,40%	20,70%	16,50%	12,20%	10,00%	8,00%	
% of mobile phone users	38,80%	44,10%	48,90%	52,40%	55,50%	57,80%	
% of internet users	66,80%	73,40%	79,10%	83,60%	87,30%	90,10%	
% of population	22,60%	27,00%	31,10%	34,50%	37,50%	40,10%	

Nowadays new technology of phones and rising network systems about mobile industry making a big impact on humankind in a brief time period than any other improvements in human history (Agar, 2013, p.254).

Connected Device: Connected devices are mostly means not phone feature included in their complexity. That means these devices not primarily phones but they can connect mobile networks and do internet activities by their applications and browsers. Tablets, electronic readers, portable game consoles are just some examples of these category of devices.

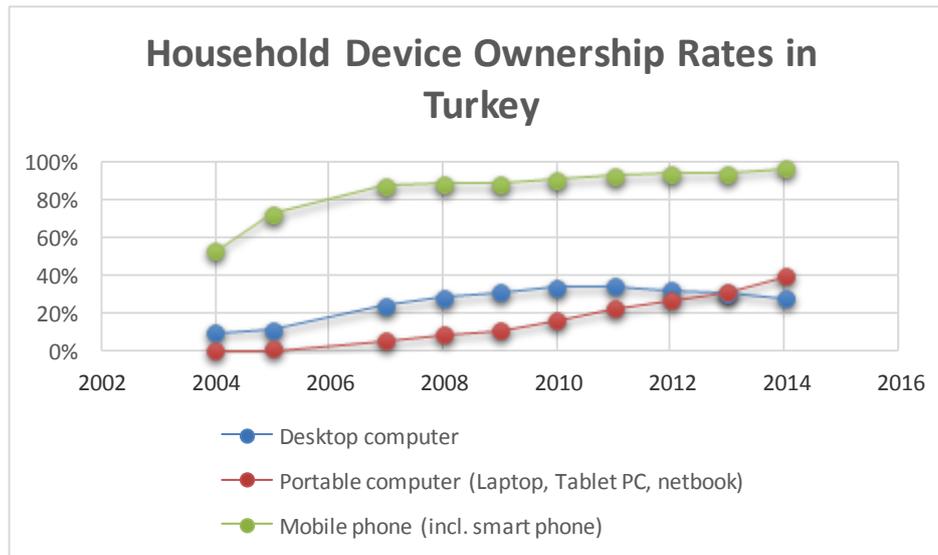
**Table 3.2 : Worldwide Mobile Device Shipments Table (Mobithinking, 2014)**

Worldwide mobile device shipments in 2012 and 2016 (millions of units), according to Canalys				Smart connected device market by product category (shipments in millions), according to IDC		
Type of device	2012 shipments	2016 shipments	2012-16 Growth	Type of device	2012 shipments	2012 market share
Basic phone	122.0	58.0	-17.0%	Smartphone	722.4m	60.1%
Feature phone	770.8	660.9	-3.8%	Tablet	128.3m	10.7%
Smartphone	694.8	1,342.5	17.9%	Portable PC	202m	16.8%
Tablet	114.6	383.5	35.3%	Desktop PC	148.4	12.4%
Notebook	215.7	169.1	-5.9%			
Netbook	18.3	0.3	-65.4%			
Total	1,936.2	2,614.2	7.8%	Total	1201.1m	100.0%

Feature phones are still selling in the market and still PCs selling more than tablets. It is projected that will change in future. Canalys projects that tablets could sold more than the portable PCs in 2014 (Mobithinking, 2014).

Turkish Statistical Institute published that, household ownership rate of mobile phones in Turkey exceeded 93,7 percent by the end of 2013, portable PC 31,4. Desktop ownership rate is reduced to the 30,5 percent at the end of the year 2013. The data of 2014 based on the first half of the year statistics (Tük, 2014).

**Table 3.3 :** Household Device Ownership Rates in Turkey



The statistics shows us people are buying more portable devices in time and they are not much buying stable devices anymore like Desktop computers. The popularization of the mobile technology, enhances in handsets, and thrives in its business capability, gave rise to the phenomena called “Mobile Revolution”.

### 3.2.2. Mobile networks

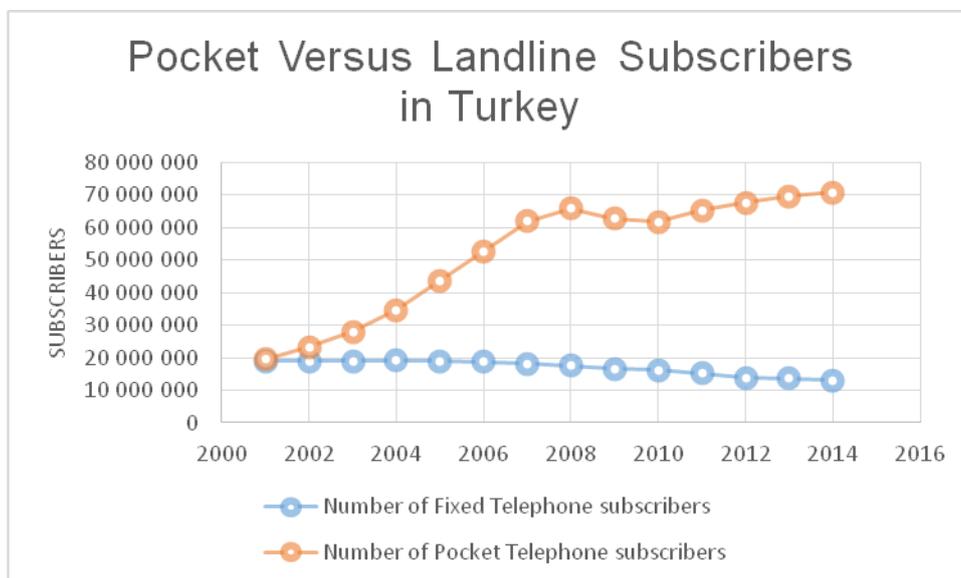
Mobile communication is a communication way between the people independent from the place with the freedom of movability. Mobile communication, the rise of the mobile market and grow of internet applications caused the appearing of mobile internet. Owing to the mobile internet people can make lots of transactions independently from their environment. Because of that mobile devices become; wallet, credit card, Television, newspaper, bank and by that mobile internet, banking, media, entertainment, education, tourism and shopping and the other sectors are changed radically (Özgüven, 2013, p.15).

When a new technology represents such a discontinuity in the marketplace, companies have no choice but to adopt that technology if they want to remain competitive. The proliferation of the mobile medium and its use for customer interaction represents such a change, which has been popularized by the term “mobile revolution”. The penetration rate of the mobile handhelds has well passed that of landline phones, PC-based internet devices, and any other technological innovations. According to Juniper Research (2008a) penetration rate of mobile

handsets exceeded 100 percent in Western Europe in 2006, and in Eastern Europe the mark was reached in 2007. The mark has also been reached in several Middle Eastern and Asian-Pacific countries as well. The penetration rate in the Americas is also rising steadily and is currently above 80 percent (Varnalı et al., 2011, p.1-4).

According to the Turkish Statistical Institute, the household ownership rate of mobile phones in Turkey exceeded 93,7 percent by the end of 2013, portable PC 31,4, tablet computer 6,2. The table shows us the increasing difference between the number of mobile subscribers and landline subscribers in Turkey. The data of 2014 based on the first half of the year statistics (Tüik, 2014).

**Table 3.4 :** Pocket Versus Landline Subscribers in Turkey



Mobile commerce reaching and engaging their customers over mobile network systems. There are three basic mobile networks:

#### 1- Mobile carrier network

Mobile network works with radio towers which transmit data by radio signals we can call them cell towers. There are lots of technical radio frequency standards for mobile phones some of them slower transmits some of them faster. Also we can call them generations of telecommunications. There are four generation network type according to the newest one 4G is fastest now in present.

The improvements of the mobile communication technologies divided as first, second, second and half, third and fourth generation.

1G

The first generation (1G) of phone technology was the first version of the wireless communication technologies in 1979. Within this phone technology only uses of analog and only allows the voice transmission.

First generation phones are a big step to pass from fixed phones to the mobile communication. However, this generation phones have lots of problems and don't provide the customer satisfaction because of the customer's high expectations. With the improvements of technology and the rising competition of capitalists created new demands of information and communication. For this reason, the providers fixed the problems of first generation and started a new mobile communication era with the second generation mobile systems (Özgüven, 2013, p.19-20).

## 2G

Second generation systems arrived in the end in 80's. This network providing low rates of data transmitting with voice transfer. It was just slightly higher edition of first generation systems. 2G system abilities are, better high quality sound, better big capacity, voice and data could be coded, short data transmission (SMS, Cell information, etc.). WAP (Wireless Application Protocol) technology innovated with the second generation and that technology allows reaching data from internet and making regulate over the data.

Second generation mobile technology providing internet access of users by at the same time their internet and mobile services, in other words from their GSM operators. The users could use the WAP services after they connected to the internet. SMS is a direct usable service provided by mobile network operators (Özgüven, 2013, p.21-23).

## 2.5G

2.5G means second and a half generation is network cell technology appeared after 2G systems and it helped to reach 3G (RFIC Technologies, 2014). Enhancements of the 2,5 generation phone technology raised the data transfer speeds 10 times faster. Mobile communication sector is raised fast with the improvements of the technology. NTT DoCoMo as the Japan's biggest mobile service operator represents wireless internet service named I-Mode in the year 1999. This service become the most fast growing content success in the history by reaching 35 million subscribers in 3 years.

They created a device to use this service less weighed than 150 grams and cheaper than an average PC prices (Özgüven, 2013, p.24).

GPRS important step through for 3G network. GSM and EDGE systems are both have data and voice traffic on mobile. Nowadays, 2G network system still mostly dominates the world, but it needs to be improved. Because of that need, third generation (3G) network systems introduced to the world, but their introducing not reached what it must be because of economic and technical infrastructural situations (Amit, 2010).

### 3G

EDGE networks made possible the transferring high rate data, but there are still problems of that networks. So it is created a new network system is used all same protocol around the world. So, 3G introduced (Amit, 2010). 3G network systems offers bigger range and enhanced service while improving network capacity. 3G network provides wider area calls, better data transfers, video calling for all mobile areas (RFIC Technologies, 2014).

With the help of location based services we can learn a person's address or we can guide the employees of a company's local staff, and that results as the productivity. Third generation phone technology's best benefits are fast communication, package switching and optional speeds choices. The 3G technology provides connection while users are moving and transferring data, picture, graphic ant etc. at the high speeds (Özgüven, 2013, p.25). 3G is created a great mobile web experience for mobile devices, as a result of the fast speeds of internet users could reach the nice graphics, high sound quality music, video broadcasts and easily reach the mobile commerce.

### 4G

4G have the better cellular network standards. Approximately in every 10-12 years period we are improving the mobile phone network systems one "G" faster. Today smart phones and tablet computers come out all around the world and U.S. is leading the market. A modern economy depends on computer and telecommunication technologies. Economic growth is contingent to more innovations (Özgüven, 2013, p.27). 4G providing the freedom of affordable performance and price everywhere

with better quality. This generation network started in 2010 and it will find his place in 2014 and 2015 (Kumar, 2010).

4G provides one network instead of all other wireless network systems. For now 4G has a cost issue but in near future all kind of users will benefit from its advantages (Faisal, 2010). M-commerce and mobile marketing started to use easy by customers day by day. Mobile phone users can do banking transactions, reservations, shopping and following the news and more services from their phones. It is expected that, mobile internet access will create a big opportunity for mobile commerce and marketing.

The evolution of the mobile network systems in the world is showing at the table at below (Teqlog, 2011):

**Table 3.5 : Mobile Networks Comparison Table**

Generations	Definition	Throughput/Speed	Technology	Time period	Features
1G	Analog	14.4 Kbps (peak)	AMPS,NM T,TACS	1970 – 1980	During 1G Wireless phones are used for <i>voice only</i> .
2G	Digital Narrow band circuit data	9.6/14.4 Kbps	TDMA,CD MA	1990 - 2000	2G capabilities are achieved by allowing <i>multiple users on a single channel via multiplexing</i> .During 2G Cellular phones are used for <i>data also along with voice</i> .
2.5G	Packet Data	171.2 Kbps(peak) 20-40 Kbps	GPRS	2001- 2004	In 2.5G the <i>internet</i> becomes popular and data becomes more relevant.2.5G <i>Multimedia services</i> and streaming starts to show growth. <i>Phones start supporting web browsing</i> though limited and very few phones have that.
3G	Digital Broadband Packet Data	3.1 Mbps (peak) 500-700 Kbps	CDMA 2000 (1xRTT, EVDO) UMTS, EDGE	2004 - 2005	3G has <i>Multimedia services support</i> along with streaming are more popular.In 3G, <i>Universal access</i> and <i>portability</i> across different device types are made possible. (Telephones, PDA's, etc.)
3.5G	Packet Data	14.4 Mbps (peak) 1-3 Mbps	HSPA	2006 – 2010	3.5G supports <i>higher throughput and speeds</i> to support higher data needs of the consumers.
4G	Digital Broadband Packet All IP Very high throughput	100-300 Mbps (peak) 3-5 Mbps 100 Mbps (Wi-Fi)	WiMax LTE Wi-Fi	2010 – Now	<i>Speeds</i> for 4G are further increased to keep up with data access demand used by various services. <i>High definition streaming</i> is now supported in 4G. New phones with HD capabilities surface. It gets pretty cool.In 4G, <i>Portability</i> is increased further. <i>World-wide roaming</i> is not a distant dream.

## 2- Wi-Fi and WiMAX

Wi-Fi in other words wireless fidelity means wireless small local area network it connected to the internet. Mostly using at home, work, restaurants and coffees and rest common places (Becker et al., 2010, p.15). Engineers developed new standards between PCs and networks with internet. Some outdoors and shopping centers, bookstores, cafes, libraries, most of the places also have free Wi-Fi service for their

customers or visitors. Wi-Fi areas are spreading because of the customers' needs and it's very helpful to reach the information faster about what they interested in. Besides, that service rising the customers satisfaction when they are visiting the places.

WiMAX is the abbreviation of the worldwide interoperability for microwave access words. WiMAX is a broadband connection it connects fixed, movable and mobile devices. Its supports from in sight or out of sight, point to the other point and multi points to other multi point applications. In ideal circumstances and weather conditions provides voice, data and image transfers with service quality and secured with the speeds around 75 megabyte per second to the 50 kilometer diameter (BTK WiMAX Report, 2009, p.5). WiMAX is similar Wi-Fi system but an enhanced version. Most of the mobile devices can connect internet via these network systems (Becker et al., 2010, p.15).

WiMAX technology is slower than Fiber, DSL and Satellite technologies. Also WiMAX has disadvantage about mobility if we compare it with cellular based network systems. But this technology faster than UMTS/HSDPA cell based network systems. We can say that there's and reverse relationship with mobility and speed if we analyze the networks. In the large scale of time network systems will grow in same direction (BTK WiMAX Report, 2009, p.11).

### 3- Local frequency

Lastly local frequency channels can use low frequency and transfer data and interacting mobile devices on purpose of use. These connections are named Bluetooth, RFID and NFC technologies.

#### Bluetooth

Bluetooth is a user permitted low frequency radio technology for alternative cable connection with a reach of about depending on the power of the device. Bluetooth is a fast secure wireless technology in short range who founded by Ericsson, Nokia, IBM, Intel and Toshiba corporations. This technology firstly used by Europe companies in 2003. Bluetooth technology provides connection between cell phones, computers and other devices without cable and without eyesight direction. Bluetooth technology basically, provides a connection to the devices by a Bluetooth chip and

synchronizes voice and data in wireless environment and the most effective range is approximately 10 meters (Arslan, 2012, p.56).

This technology gives new opportunities to the firms to use in order to reach their consumers with new ways and be different than other rivals about mobile commerce area. (Bluetooth, 2014).

#### Radio Frequency Identification (RFID)

RFID and NFC systems are all local frequency systems in short distance communication of mobile devices. RFID is the general name of the technologies which identify human or objects automatically by using radio waves. The RFID tags placed on the objects and that helps to give digital information from objects to the computers that can use that information (rfidjournal, 2014). The small tags are without battery are using mostly following the products in the companies. These systems can read by mobile devices and give some message or display something in order to give information to the users. For commerce usage become like these chips sends a message to the consumers like a web site, phone number, discount code etc. (Krum, 2010). RFID tag and reader could communicate from long ranges and without a seeing the sights and because of this specialty this technology in near future will replace the barcodes (Arslan, 2012, p.57).

For example, in Wal-Mart stores used to start one system in 2005, there are RFID tags on every goods in the store and when the customers come to the payment points with their baskets they can calculate their basket's cost in the screen without put out them from their baskets and they just use their credit card on POS (Point Of Sale) machine and complete their buying process. RFID is also give a security for theft incidents because if the goods are taking to an irrelevant place, passing the payment place without pay for a good or if the tag is wanted to rip off from the product the alarm is activates (Arslan, 2012, p.58).

#### Near Field Communication (NFC)

NFC is a wireless technology for short distance data transmission. The development of this technology is the result of a research Project by Philips and Sony from 2002 through 2004. Its aim was to create a unified communication protocol which could combine the two manufacturers to date competing smart card standards. Smart cards had already being used for years as customer-, credit- or accesscards, for information

storage and personal data storage, as well as for electronic authentication and authorization (Pousttchi et al., 2010, p.192). NFC is an ideal fit for a dizzying array of potential “tap and go” applications, from swapping photos with your friends to making mobile payments or exchanging ticketing or coupon information. NFC is also a very secure communications technology, since the physical closeness of the devices and the short range of the radio frequency signal make it very difficult for eavesdroppers to intercept data.

As of 2012, NFC is being driven to market by heavy-hitters Google, Microsoft, Visa, and American Express, along with leading mobile device manufacturers and wireless operators. The World will change over to NFC. Before 2020, perhaps 500 million to a billion people will have NFC in their mobile devices. That is, 80 percent to 90 percent of all the world’s purchasing power could come through people with handheld NFC devices (Saylor, 2012, p.95).



## **4. MOBILE COMMERCE TOOLS**

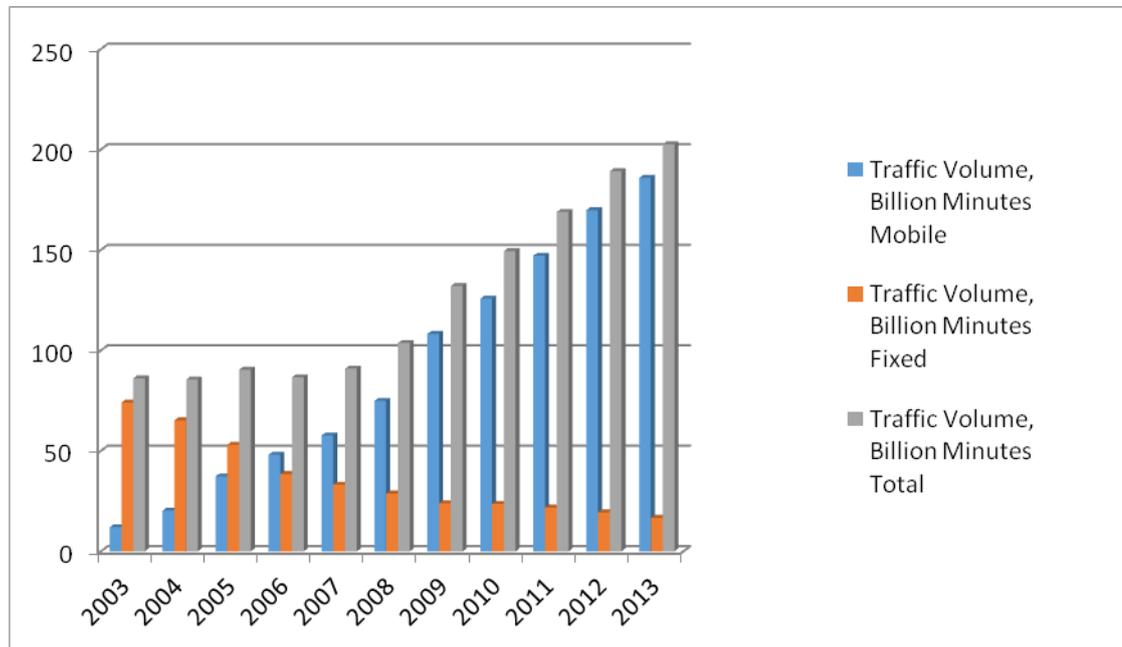
### **4.1. Voice**

Voice as a mobile marketing and commerce tool is exactly; someone makes a call with a mobile phone and interacts and makes transactions on the phone via voice. Voice calls could be a person to person, a person to computer call also a person to a recording machine phone call. This is the basic tool for mobile commerce. The voice calls are maybe not much tech-high but its works for every kind of people. Some older persons or some old fashioned people who have no smart phones or doesn't like to use other functions of their phones except calling. Voice calls are important for every commerce business.

Voice calls are for every kind of consumers and simply we can add a good message to our advertisement and giving the numbers of our company. Most of the customers are busy or don't have time or don't waste time with going searching the products or services. When they decided to buy that product or services they can use or they can pay at the nearest sales offices or when their product arrived to them with the help of credit cards on Mobile POS devices. In Turkey between the years 2002-2012, credit card usage raised %245 (from 15,7 million to 54,3 million). Besides that between the same years total transactions raised %1373 (Özkan, 2014, p.14-15).

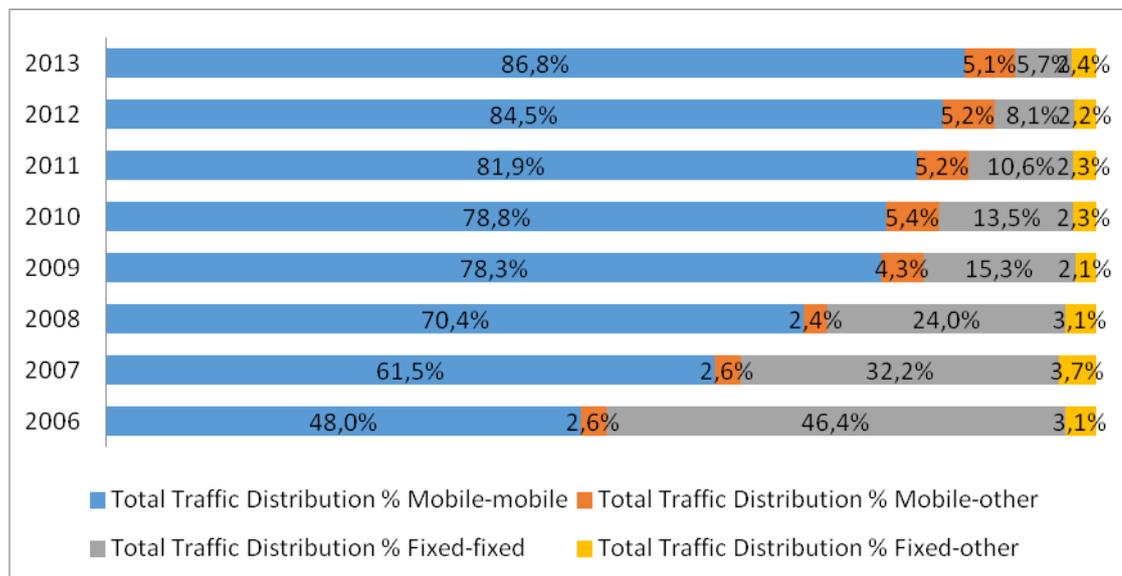
The voice connection via mobile still has a nice opportunity to create new customers and prize the loyal ones. The Report of BTK shows exactly how mobile calls important in time and changes of the business transactions anytime and everywhere.

**Table 4.1 : Total Traffic Volume (Billion Min.)**



According to the table mobile to mobile calls have the biggest share (approximately 87%) in total traffic. At the contrary fixed to fixed phone calls has decreasing trend. Fixed calls were 46% of total volume in 2006 but its trend goes down to the 6% in total volume in 2013 (BTK Report, 2013, p.19).

**Table 4.2 : Total Traffic Distribution (%)**



Turkey electronic communication sector especially mobile provider's market share reached to the %57, but Turk Telekom's market share decreased %23 in 2013 year.

All electronic communication sector total sales reached 31,30 Billion TL at the end of the 2013 year (BTK Report, 2013, p.17).

Information and Communication Technologies Authority (BTK) 2013 Annual Report shows the calling price of Turkcell operator (BTK Report, 2013, p.46).

**Table 4.3 : Calling Price Per Minute**

Implementation Date	Operator	Voice (2G/3G) (Kr/Minute)
01.07.2013	Turkcell	2,50

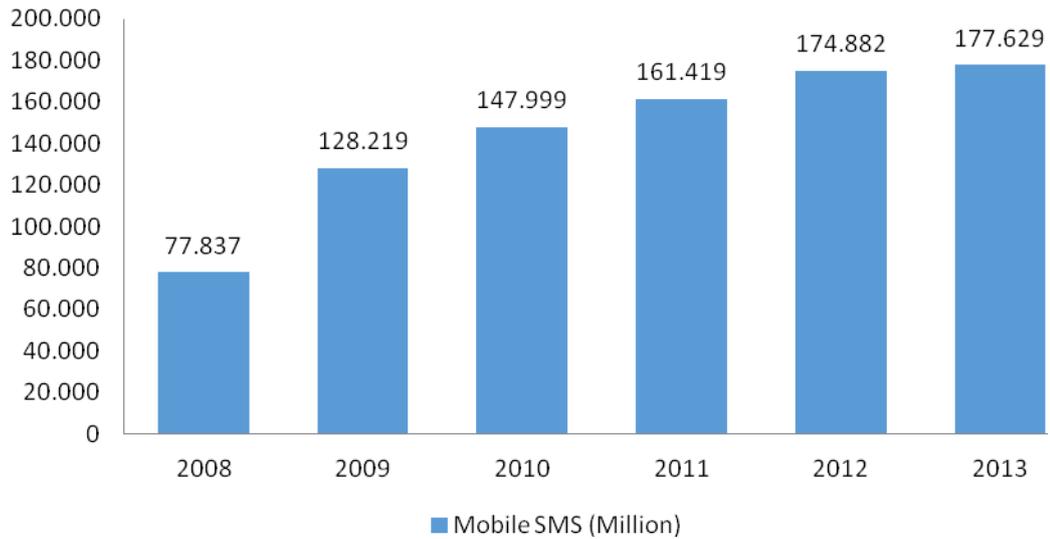
According to the Deloitte report about smartphone usage effects on retail sales shows that %27,8 of the consumers talking with their phones, messaging and sending e-mails about shopping advice when they are in the shop (Deloitte, 2014, p.20)

#### **4.2. Sms**

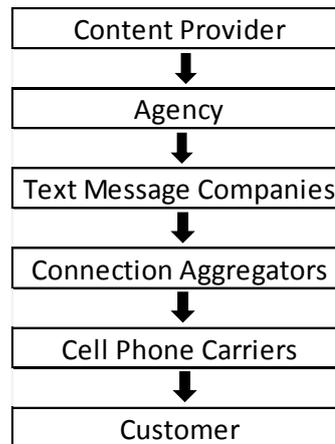
First Sms message sent by Vodafone in 1992 and still it's a most used technology among the users (Michael et al., 2006, p.18). SMS is a process which sending 140 byte data package to the receiver. It can contain 160 characters at one package. It's not only available text messages but also could send and receive operator logo, melodies or configuration purpose messages.

Mobile devices are spreading around the world and transferring the information through users created a new opportunities for marketers. SMS is a nice medium for using as a marketing tool. It's so common among the customers and that's why it's so important for the commerce. Besides of these features SMS is fast, easy, secure and personal that make its usage is intense than other mediums. SMS advertisement or information transfer between companies and the customers are becoming more personal forms with time. The diagram at the below shows us the Turkey's SMS usage is rising rapidly by years (BTK Report, 2013, p.29).

**Table 4.4 :** Mobile SMS Usage in Turkey



Sending short message service or text messages to the customers is not a direct path. The table below shows many industry players providing that service (Dushinski, 2009, p.112).



**Figure 4.1 :** Text Message Industry Players

The costs of SMS depending to the operators but they are making discounts to companies. Besides, SMS effectively reaches to the target people and that effectiveness recovering the purposes of costs. Additionally, customers are giving more response when companies used SMS if we compare with the other media tools. Because SMS could be sent to the target people's location, time and their preferences and create a user specific message for every person.

Information and Communication Technologies Authority (BTK) 2013 Annual Report shows the SMS Termination Rates by operators. These costs are could be

decrease with the wholesale buying of the SMS services from the operators (BTK Report, 2013, p.46).

**Table 4.5 : SMS Call Termination Rates**

Implementation Date	Operators	SMS Termination Rates (Kr/unit)
01.07.2013	Avea	0,47
	Turkcell	0,43
	Vodafone	0,43

SMS has a less disturber and drastic if we compare it with voice call commerce and marketing practices. When the receiver gets the message, they can read in that time or they can delay their reading another time and save it in this way. Maybe our customers doesn't need that product or service at that moment but later when they need the SMS so reachable by the phone short message archive. To understand the customer better we must take their permission first and later we must ask what kind of information they want to receive with short message and what kind of product and services they interested in. Then, with this information we can create customer oriented messages. SMS medium can be used for every kind of product or services from low priced ones to expensive ones. Permission marketing is offering the customer to be accept to be marketed. It also means customer will pay more intention to the delivered message. This situation allows the companies tell their message safely and effectively without no interruption by other competitors. It provides both sides benefits in that way (Godin, 1999, p.38).

SMS are just includes text and limited characters in the past but nowadays they can also send visual and sound included messages. This provides to companies sending more creative and effective messages by Multimedia Messaging Service (MMS) to their targeted customers.

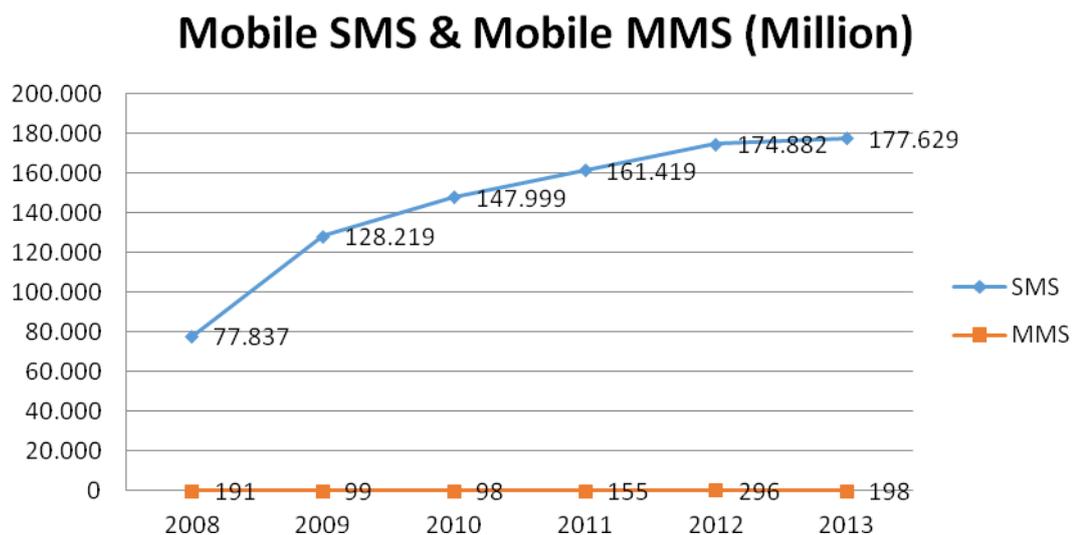
### **4.3. Mms**

Multimedia Messaging Service system, maintains the delivery between MMS available mobile devices via messages. The difference from SMS is MMS contains text, voice, graphic, animation, melody and photograph.

MMS supported devices are not only way to send these multi content messages cellphones or other devices but also from internet. Besides, MMS messages could send from cellphone to the e-mails. If the receiver's device is not available for MMS messages the network sending a warning SMS to the receiver and give them information or internet page to reach their message.

MMS has the features like SMS; personal communication, high customer loyalty, flexible timing and classification of the crowd of people, high feedback rate, recycling also providing sound, color and creative active movable contents to the users. However, in small screens MMS loses its efficiency. The cellphone industry produces bigger and high resolution screens every year that means MMS is still an efficient way to reach to the customers.

**Table 4.6 :** Mobile SMS and MMS Usage in Turkey



Information and Communication Technologies Authority (BTK) 2014 2.nd Quarter Report shows the 2008 year and nowadays total yearly SMS and MMS amounts. According to that table SMS has risen %128 and reach the 177,6 billion from the year 2008 to 2013. MMS messages couldn't make such big impact of use the between the year 2008 to 2013 and it still has an upward tendency (BTK 2Q Report , 2014, p.48-49).

#### **4.4. Near Field Communication (Nfc) & Bluetooth & Rfid**

NFC and Bluetooth or RFID provides data transfer with only one touch mostly in basic things. Today's most of the smartphones has a coded data transfer to the near field reader we can say NFC, Bluetooth and RFID chips could be embedded to the cashier's desk for identify the purchases, gives information to the buyer and also payments.

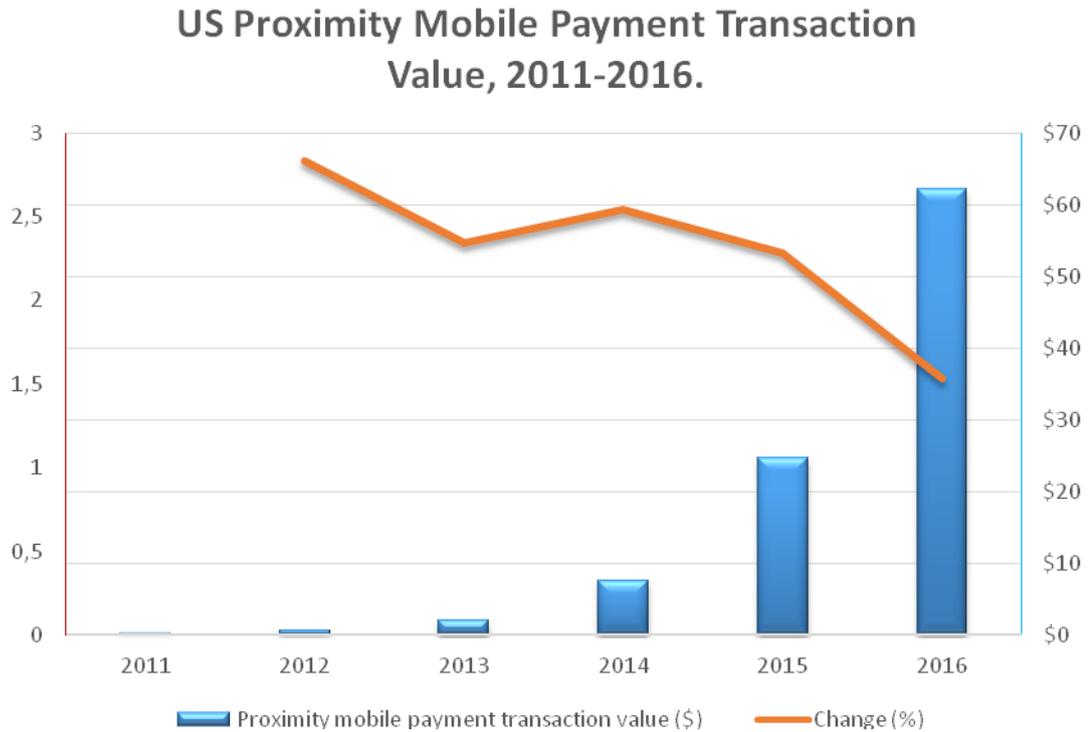
For example, when a consumer enters a store and could read the NFC system in the entrance and make a check-in, company could send a special offers and promotions to the special customer. Also in this store product tags could give extra information about the products or even similar products when the smartphone reads the NFC tag. Also the consumer could save loyalty bonus points when their NFC handsets read by the clerk's desk.

SIM card is inside a mobile smartphone can be used to secure a mobile commerce service. The SIM also has a standard and secure mechanism that used by mobile operators to confirm more than 85% of the world's mobile handsets when they connect to a mobile networks. Also SIM based NFC services can be deactivate if the phone stolen or lost also the new phone of the customers can be initialized by their payment features easily.

A research showed that mobile payments are becoming an important feature for UK consumers. NFC technology is widely known and accepted by consumers. In the research they found in April 2013 that 10% of total UK internet users consider NFC technology as an important feature into their next phone purchase. In is estimated that UK mobile NFC users would reach 336.000 in 2013, and this number would approach 1 million, for a growth rate of 171% in 2014 (Emarketer, 2013).

By 2016, proximity mobile payments will have exploded in the US, and total transaction value will hit \$62.24 billion (Emarketer, 2012).

**Table 4.7 : Proximity Mobile Payment Transaction Value and Change Percent**



The potential of this technology and easiness of use understand by today's technology giants and they started the investments on that field. NFC has a common support from device makers, operation systems, phone brands, m-banking etc. Google used that feature at Android Operation System. Apple also announced to support for NFC-powered Apple Pay program. One problem is not much people used this technology yet, it will take time and needs to educate customers and the company workers. Also, fears surrounding privacy and security seem to be slowing the process uptake.

#### **4.5. Mobile Wallets**

Individuals increasingly having smartphones and by that they are using commerce services in different ways. They are don't want complexity when they are buying or giving information, their loyalty cars, coupons, payment cards and other items. A mobile wallet can able to help in those situations.

Smartphones has the hardware and software to use mobile commerce, a mobile wallet can aggregate supporting payment cards, loyalty cards, tickets, receipts, vouchers and necessary items that need to be in a wallet. A trusted wallet service

provider and partnership with the phone and operation system usually installing and rescuing, deleting the customer's information by SIM card. If the phone lost or theft a simple call secure the data on the phone.

Customers can use their mobile wallets by the help of an smartphone application. They entering a pin code in the sales points easily moreover they can collect loyalty programs and other rewards by such application campaigns. Customers can use their mobile device payment terminal and their transaction will be archived easily and fast (Chasepaymentech, 2014).

According to Forrester, mobile payments will rise in next 4 years. (Forrester, 2013) Currently, proximity payments have 4% of all mobile payment transactions, however that percentage will rise 50% by 2017. Emarketer estimates that by 2016 proximity mobile payments will be booming U.S. and total value of transactions will reach \$62.24 billion (Emarketer, 2012).

Gartner estimated that total transaction amount in the world mobile payment will reach \$235 billion in 2013, so it means 44 percent increase from 2012. They predicts mobile payment users will reach 245 million in 2013 in the world, will rise from 201 million in 2012. Moreover, mobile payment transaction total value will be \$721 billion by 2017 (Gsma, 2014, p.4).

There are lots of mobile wallets but the more popular ones are Google Wallet and Apple Pay.

#### Google Wallet

Google Wallet is an easier way to make payments in sales points; individuals can lend money to their friends and they can do them online. Purchase in sales points and lots of loyalty points in one device. With the electronic wallet consumers can send money fast and the receiver can spend it easily.

Google Wallet have lots of features but the main thing is 24/7 fraud protection. If consumer's phone is lost or stolen, it can easily banned for usage for unknown persons just by using account (Google Wallet, 2014).

#### Apple Pay

Apple pay changing the payment habits by contactless payment option in their own unique phones or even with watch easily and secured.

Apple uses a more secure system nicely encrypted and never saved in Apple databases. In the moment of customer makes a payment, the code system helps to secure consumer's payment. Then customer's card information never shared by anyone.

Apple Company protects the accounts of the customers even if their mobile device is lost. Customers can reach an application that helps to clear the lost device's data to prevent data fraud (Apple Pay, 2014).

The customers reaching to the web shopping pages and when they added their product to their basket they are seeing a special payment button or they can use NFC reader at the clerk's desk. When the customers touched that button or NFC reader system, it starts digital wallet on smartphone screen. After mobile wallet application opens and gives you to select customer's mobile cards for this purchase. After selecting the mobile payment card opens password of that mobile card. When the PIN code entered its shown in the screen about transaction is completed. Some pages are sending information to your mail summary about your order and digital receipt of customer's purchase on the mobile website.

Benefits for customers the mobile wallet technology:

Faster and simpler: a faster, understandable process.

Safer: consumer's identity never shared with seller to maintain privacy.

Convenience: Digital wallet can use on transactions easily. Delivery address, bill information could be stored in the mobile phone for future purchases. Besides, loyalty cards, receipts, order summary could activate automatically and make bonus points and record information to your phone.

Benefits for shop owners:

Higher revenue: Simple and easy shopping experience with more security causes a big number of mobile and online transactions.

Closer to customers: mobile wallets create good relationships with customers through automatic receipts and reward of loyalty bonus points.

Economies of scale and minimal disruption: Shop owners could improve their online transactions with using same behind the scene functionality used as POS transactions.

Benefits for financial institutions:

Low identity theft: Sending customer's payment information on the SIM card for mobile commerce transactions emulates a plastic card that reduces the fraud rates in transactions.

More transactions: More and more transaction volumes rising, year by year consumers like to buy with mobile payments. According to the Türkcell Annual Report the mobile payment users reached to 2,5 million subscribers and total transaction volume reached more than 120 million TL (Türkcell, 2014, p.41).

Mobile wallets and NFC based payments are new all around the world but the potential is very immense, after the adaptation process of customers it will become an indispensable feature of the Smartphone users. All sides of the commerce depending the Sim based payment security system providing a bridge between them and helps the business and economy reliability for everyone (Gmsa, 2014, p.5).

#### **4.6. Mobile Web Page**

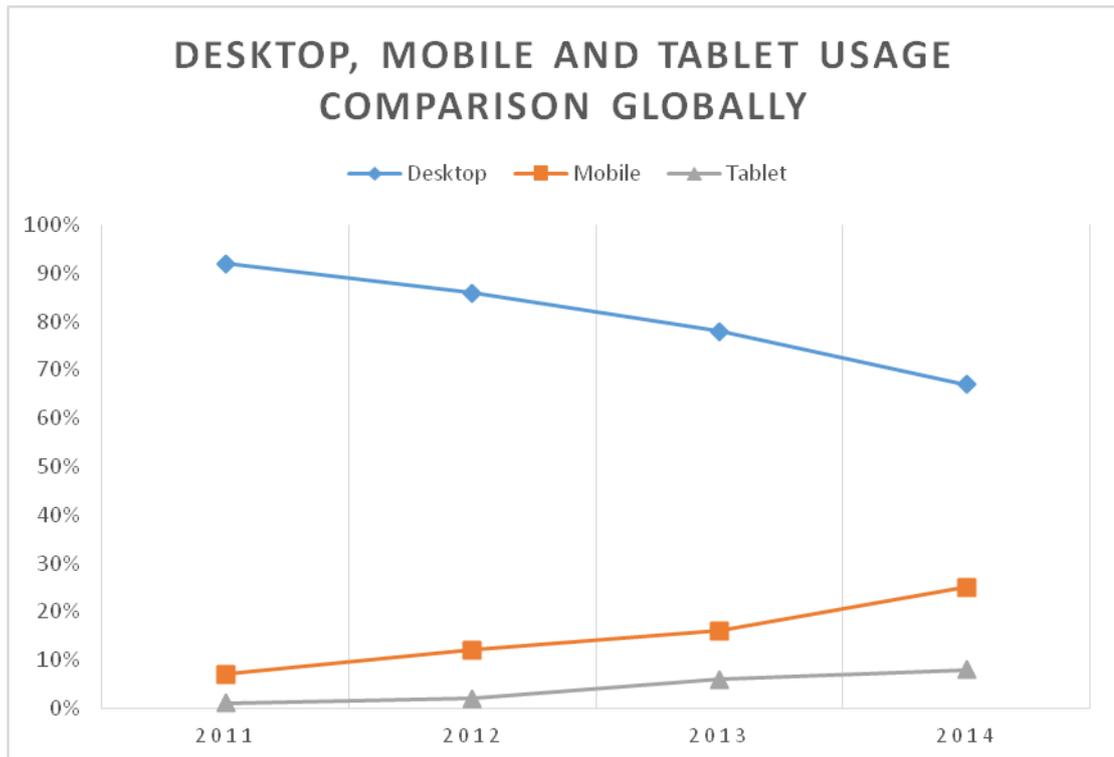
Mobile web means internet accessibility by mobile devices. But all the information on the internet not built for mobile accessibility. In another words, mobile structured web pages are creating the mobile web experience for users. Mobile web pages includes mobile search engines, mobile advertisement, mobile payments are different than PC versions. The mobile web pages are using a different environment for mobile devices.

In today almost every business must have an internet page because consumers expect business must have a website, even it could be a simple one. We will reach the same level with mobile web near future too. Most internet pages will go mobile because their customers will expect to see and use the mobile web view. According to the Turkish Commerce Law most of the companies have to use a web page and publish some information about their company to the community. This law came in to force in 2015 and that shows how important to have a website for business (Altaş, 2015).

Nowadays world lives the gold rush times of mobile internet. In the year of 1995, company owners trying to create a web page before all their rivals because of the competition. Now a company who has a mobile web page it is easy to access via mobile devices and customers are looking for that kind of presence. Today it's not

enough to have just a web page of your company; it doesn't suits for the new type of customers. According to the StatCounter's Desktop, Mobile and Tablet Usage Global Comparison between the years 2010 to 2014, Mobile and Tablet usage are rising year by year, besides desktop usage is decreasing oppositely. That graphic shows us about customers prefer mobile devices in future instead of desktop devices (StatCounter, 2014).

**Table 4.8 :** Desktop, Mobile and Tablet Usage Comparison Globally



Mobile web pages must be simple but also enough detail for the customer's needs. Because of the rise of the mobile web users companies must find what they are thinking about and find their wants to shape our web site and create and change our commerce strategies.

Companies must consider that where exactly their customers are reaching the web pages: are they on bus, minibus, train, subway, walking on the street, standing and waiting on bus stop, sitting on a café or restaurant. Customers want to reach your company's location, telephone or your product's features, working times etc. here is the list a mobile web page contains:

- Maps and directions to your company or shops
- Working Hours

- Click and call button
- An head menu to reach index of pages
- Updated information related to the company
- Special bids
- Contest information

There are also important things while designing mobile webpage the companies shouldn't do. These things could be not good for mobile websites:

- Extra graphics
- Long information pages
- Reaching via mobile web pages with too many clicks
- The infrastructure who makes mobile devices crash or freeze

The mobile web page is very much important and it must be smooth for visitors. It must be easy to navigate mobile web site and find what they want there. It must be obvious, quick and easy to get back the main page from anywhere in the mobile web page.

Companies must convert their visitors to the potential customers. Mobile web page could be attracted by the customer phone numbers with SMS, e-mails, advertisement and information messages. After a lot of people visits the mobile web page but not interact with your company it is not enough for success. We should make them to visit by phone with click to call, a map for store location, work hours, and other valuable information to reach the store.

Google users inputs something they wanted to search on main page and Google gives them what they are wants to do and searching for in milliseconds. Also customers could search via microphone of the phone easily without writing. A mobile website must have a contact information, open address, navigation or map, SMS short code, keywords, click to call button to interact, subscribe button for e-mail information, a basket system for purchasing goods and a payment system for secured payments or bank account to involve the customers easily with your company.

Customers are always using the quickest way to reach the information, that so no one wants to open their computers if they have a Smartphone. Smartphones are giving simple and better quick way with a few touches to mobile web pages instantly everywhere. So companies must create a website must resizable and the system must

understand what type of device are the customers are using and shapes the page for the best viewable mode. A web page could understand the viewer has a mobile device it shows dynamically a smaller size and basic graphical display for the visitor. This is called miniaturizing the web pages. This is not a long-term solution because it could give some errors in some mobile devices those don't suitable ones. Miniaturizing the web pages is a short term solution, companies must create a mobile website must be ready for a better experience in future.

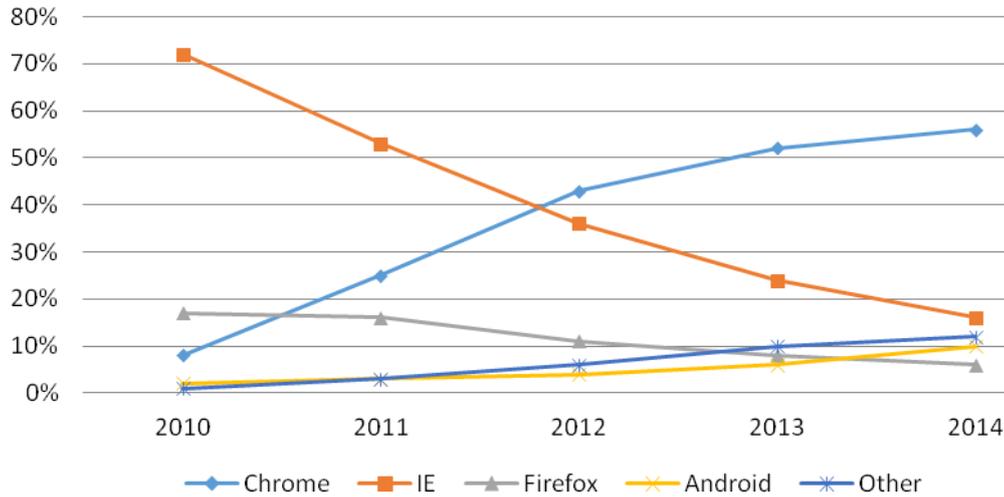
Another option to create different websites one is for desktop computers other is for mobile devices. When the customers visits company main page and if they are using the mobile devices, their mobile web page going to give them a selection about which version the customers wanted to use. After the selection it redirects the customer's choice of view.

Another way is using a recognizing Automatic Content Identifier (ACI) program to understand the customer's device and delivers different contents to different devices. The Mobile Engine Program detects more than 14.000 combinations of handsets and browsers including Android, iPhone iOS, Samsung, Nokia, Windows Mobile, Motorola, BlackBerry, Sony Ericsson or other phone web browsers and that program shows exactly specially designed page for iPhone users with extra features. That kind of special user experience gives a perfect satisfaction to the customers.

According to the StatCounter Top 9 Browsers in Turkey between the years 2010 to 2014, Chrome is the top browser and has a good growing rate in Turkey year by year (StatCounter, 2014).

**Table 4.9 :** Top Desktop & Mobile Browsers in Turkey from 2010 to 2014.

### Top Desktop & Mobile Browsers in Turkey from 2010 to 2014.



Google created a good browser for desktop, mobile and tabled named Chrome, it succeed as we see at the statistics about usage in Turkey by the years. Chrome's abilities are: Browsing and searching faster, no limited tabs, easy control, signing in with account, syncs user bookmarks on all devices (Google Chrome, 2014).

A research made by Mckinsey & Company in 2013 showed the companies who intensely using internet more than %40 reached 2,1 times growth rate and export income than other companies. This results are showing how internet usage important on the companies rivalry. Mobile internet browsing helping the companies on growth and income rates critically (Afra, 2014, p.41).

#### 4.7. Mobile Ads and Search Optimized Engine

Today mobile phones are become necessary for our daily lives and their usage rises day by day. Mobile phones are become more and more important for internet traffic. Because of that reason companies trying to attract those customers to their internet page with using mobile search optimization. 93% of interactions begins with a search engine usage (Search Engine Journal, 2012). According to the BTK report in 2010 in Turkey individuals who search information about products and services from internet is reached %55,7 (BTK Report, 2010, p.36). These numbers are showing us the tendency of consumers about internet searches.

Search Engine Optimization (SEO): everyone uses search engines to reach what they are desire for and companies can make agreements for such optimization to make themselves more reachable than the other companies in search lists of customers. (Ryan, 2009, p.32).

**Table 4.10 : Websites Visited via Smartphone**

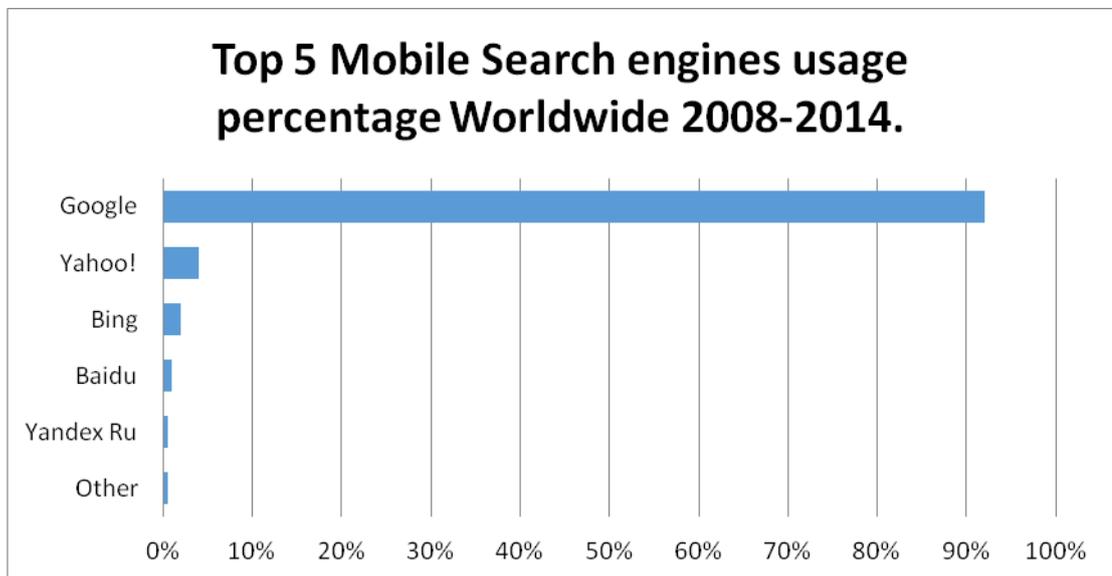


According to the 2014 statistics of Statista.com displays the most visited types of websites accessed via Smartphone. Search engines are the most frequented types of mobile websites (Statista, 2014).

Mobile search becomes very important in search engine technology, mobile searchers are rising with high numbers nowadays. Google search is the leader of this market now but it can be change according to their relevant results of what customer’s searching. Today location is a key factor for mobile searches for smartphones (Onbile, 2014).

Google is the biggest search engine among the other search mobile search engines. The Google mobile search page is simple and there are no irrelevant things with a simple click and type and voice search, Google search is quick and simple and it recommends auto-complete feature when users typing and it is so important when the customers are using to reach what they are searching for and reduce the mobile search time with these features. Google’s applications with only one click has more features like, ask to Google, Google Assistant to help mobile user or picture snap and search the information about products, important places etc.

**Table 4.11 :** Top 5 Mobile Search Engines Usage Percent Worldwide 2008-2014  
(Statcounter, 2014).



Other mobile search engines are, Yandex Search, Yahoo! Search, Bing Mobile, Baidu, Ask Mobile, etc. Every mobile search engine has different results because of they are optimized by their owner and the companies. That’s why companies must select the best search engine for their company. For companies, search engines offer a unique way to get their products and services in front of online prospects at the needed time they are looking for them. Search is like a liquid and dynamic environment and because of the nature of the questions answers are changing, products and services too.

Companies putting their advertisements related to their mobile web pages and paying money to costumers can find them in the mobile search engines. That provides more visitors to the web pages and that means new costumers and profit for the company.

Optimized search engines gives webpage owners a prime opportunity to put their products and services also brands in front of a plenty and ever-growing market of potential customers at the exact time those customers are looking for them. That's a pretty evocative marketing offer especially when companies consider the volumes involved.

According to the search CTIA forecasts about mobile application and web income will reach 50 billion dollar in 2016. Another research made by Yahoo and Nielsen, 9/10 mobile users are using their mobile internet and %50 of them are making an activity during the shopping. %86 of the users are using their mobile devices when TV watching (Çağlar, 2013).

SEO is a must be for the companies because everyone searching their needs in a big library index called search engines. Competition among the other companies continues in search engines because of they want to be first page or lines before their rivals. Customers could click and find their web pages and easily reach their wants by that. In digital age without that privilege our company could lost market share, profits, position, etc.

#### **4.8. Location Based Commerce**

Location based commerce helps to attract not only local customers but also foreigners and other potential customers too. This system is good for reaching new customers and beside that helps to create customer loyalty and make transactions again with the same customers again. Many business leaders considers that location based service is the main force behind this development.

This service is using current location of the users' mobile device. And shows a personalized search results according to the user's information and location. This services are divided into 2 categories:

End User Application Perspective: Information about weather and traffic showing to you by location of user's. Moreover, driving location, shop location, other options supported in that way.

Developer & vendor perspective: With the help of GPS navigation, relevant searches, tracking, location based billing and advertising, etc. companies can be more reachable to for their customers (Flom, 2002).

Location based services uses GPS cell site triangulation, Wi-Fi, online or offline maps of mobile devices to determine user's exact location. Users can search or click the restaurants, groceries, weather and traffic alerts, movie, theatre, hospitals and other emergency places, products, services or whatever they are searching from their mobile devices and they can reach the directions of what they are searching nearest to their location.

Location based commerce is converting potential to sales and creates positive customer relationships besides it promoting the technology interested customers as a modern brand. That helps to company will the frontier of its grounds and pops out our products or services among the other rivals. Moreover, the costs and risks are so low at that service system.

#### **4.9. Mobile Applications**

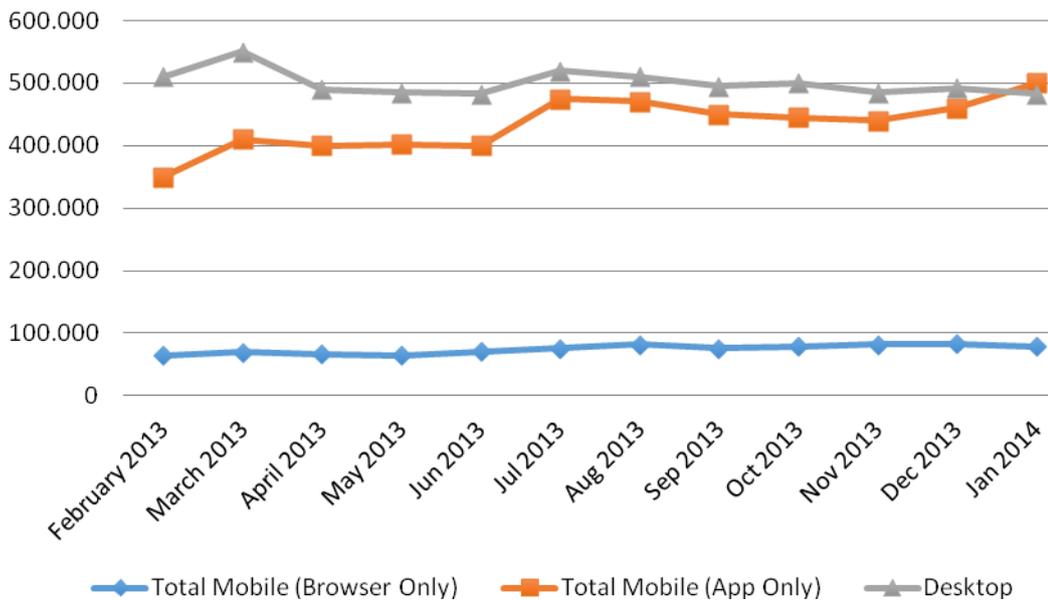
Mobile application in short name app, is a program software especially designed for mobile devices like smartphone or tablets. These apps serving as similar as PC's software, they are little, special programs to provide some process to its owner (Technopedia, 2014).

Day by day smartphone users are rising and mobile device features are getting more and more so that providing the companies a new job opportunities and better telecommunication with customers. According the Flurry data measures in the U.S., the Total Mobile Application usage passed the desktop usage in January 2014 (Marketingchards, 2014).

**Table 4.12 :** Time Spent With the Internet by Device in the U.S.

### Time Spent With the Internet by Device in the USA

Total minutes (mm) per month  
February 2013 - January 2014



A mobile application is giving a special way of use and easiness about the brand, and creates a special relationship with customers. Mobile applications has a unique design to provide a good experience about looking the products or services, reaching the details wherever and whenever the customers are, buying the products and following and taking information from the company until it arrive to the customers. For example, customers selecting their products and adds their basket and then they are entering their payment information one time and the application is taking that information for future purchases. Later, the customers can watch their product delivery details, approximate cargo time, and also most of the shopping applications have comment section for read or write a review about the products. The applications are very useful for example when customers wants to order meal from nearest place their address and wants to see their opportunities among them and the application Yemeksepeti helps them in a good way. Yemeksepeti is a food service provider to home or work based of the address of the customer and availability of the restaurants and their menus with prices. Just by using the Smartphone with a few touches the screen you can see whole menu and prices and select the best options also depends of

customer's comments and review about the restaurant or about their service, taste and speed rating points.

Mobile application has many types to help to improve our brand. There are some examples of highly valuable and regularly downloaded utility applications (Krum, 2010, p.139):

Phone utilities: taking memory notes, sound recorders, password saver, etc.

Educational: electronic book readers, language learning applications, dictionaries, online and offline maps, travel guides, etc.

Financial: mobile banking, sending money, paying bills, budget applications, observing the financial markets, etc.

News and entertainment: twitter, e-newspaper reading, watching game news and listening news etc.

Weather: detailed information about current condition of weather from web application etc.

Business productivity: useful alarms for waking up and reminders for work, document readers, etc.

Navigation and travel: showing the nearest bus or way to reach user's destination with the real time traffic intensity with alternative routes, money exchange applications, etc.

Shopping: mobile purchase applications and comparison the prices of products from scanning their barcodes, making shopping lists, etc.

Multimedia: Online Music, photography applications like Instagram, radio, etc.

Lifestyle: best restaurants and concerts buying tickets for them by easily, making exercise according to the body building applications, daily walking counters etc.

Social networking: Twitter, Facebook, Pinterest and other social blogging and shopping tools, etc.

Companies are developing their applications for these platforms and reaching their target customers around the world. Application stores are providing lots of applications and apps become an addiction to the users nowadays.

A creative mobile game application is downloaded 50 million times just in 50 days in 2012. That faster-growing apps shows the new borders of mobile age and mobile reaching all the users so quickly (Mogg, 2012).

Mobile applications also have ads for gaining money or making presentations for our new products or services, with that companies could afford to make new applications without any costs.

Companies can sponsor to an application and give the users that application without payment. This is a good way to brand advertisement and helps to create a good customers relationship. Mobile applications wants permissions before they installing to the user's phone, applications can reach the camera, GPS, gallery, microphone, basically what is necessary to help to user best experience. If these abilities of the today's Smartphones can use nice by the application makers that can makes a big impact on any other telecommunication way before.

A mobile application in Turkey named "BKM Express" supporting the mobile application purchases by adding actual credit or debit cards to BKM Express application. Customers make purchases by the some brand's application and pay easily and safely from selecting the option "Pay with BKM Express" and decide the installments and also this application has special discounts for their users. Day by day we are seeing the credit cards becoming Mobile Wallets and mobile payments will be easier and safer than other methods of payments (Bkmexpress, 2014).

Mobile applications and services have evolved rapidly over the past decade, and the next decade will bring more changes as the lines between mobile device, tablet, and laptop blur ever further. However, one thing has remained constant throughout this time of great change, and that is the way that the mobile device is situated in our daily lives, able to draw upon rich context and better connect us to each other and to the world we live in. taking advantage of this unique functionality of the mobile device allows for experiences that make life more fun, serendipitous, or simply more efficient. Mobile apps and services can help us to better people, to maintain or improve our health, to be aware of happenings in the lives of our friends and family, and to be more aware of the world around us (Bentley et al., 2012, p234)

#### 4.10. QR Codes

QR also known of Quick Response codes are consisted of little dots and become a square shaped dots named 2D bar codes. Such codes are using in various of areas like product packages, near the billboards, etc. the smart device users can scan that codes by using their camera like a scanner and reach the aim of this code message, web address or a contact number (Krum, 2010, p.79).

Everyone can create a free QR code by websites, it is so easy. QR links for the mobile devices and anyone can scan this signs by QR code readers and reach the website easily (Goqr.me, 2014).

Nowadays smartphones and mobile devices don't have the QR code readers natively, but in future it must become necessarily to include one. But users can download a QR reader from their application store for free.

QR codes could use different ways to help to companies in mobile commerce. There are some possibilities:

- Make the potential customers visit your online web store,
- Make offline customers to online customers,
- Create a community feeling among the customers by the connection ways to the social media and mobile web,
- Giving promotions or discounts to the customers using by QR/2D codes,
- Product information, suggestions and telecommunication information can be provided to the customers easily.

QR (2D) codes are must use a smart way to take customer's attention and funny way to create interest about the brand awareness. A big shopping center Marmara Forum used these codes for fun way to take attention of the customers. They put the QR codes everywhere in the shopping center and asked to the customers scan that codes and compete a snowman puzzle and win the Tablet for free. The customers can able to scan daily 10 times to complete. And also if they want to add accessories to the snowman they must invite their friends by social media using Twitter and Facebook. It was a fun way to take attention by making such attraction it creates different experience for smartphone users (QRdanadam, 2014).

#### **4.11. Social Media Marketing**

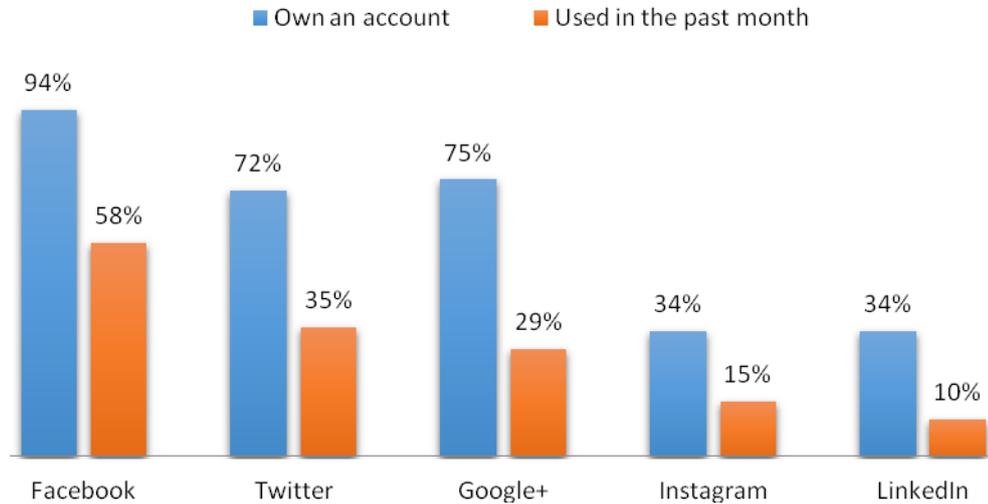
Internet becomes a way to connect the life and become a connection way to friends, family, groups, and whole world. The users uses the social media for instant messages, chat, video chat, texting, e-mail, video share or watching, file sending or sharing, blogging, video blogging, micro blogging, group telecommunication and etc. Nowadays everyone has Facebook, Twitter, Pinterest, Instagram and YouTube etc. to connect and share information among them.

Another definition of Social media consisted of created and consumed by regular people. A individual can write something about recommendation or send a funny picture about his life to make laugh others, having conversations in a web page with foreign people to learn new cultures is just some of examples about social media examples today (Singh, 2010, p.8).

Twitter reached 100 million active users and that year twitter usage on mobile devices has increased by 187% in 2011 (Odden, 2012, p.280). According to the Internet World Stats, in the end of 2013 year Turkey has 37.748.969 internet users while its total population estimated 81.619.392 people. The number of the Facebook had 32.131.260 users in the beginning of 2013. Almost 85% of internet users have Facebook account. That shows how much potential the social media has for advertising and commerce opportunities (Internet World Stats, 2014).

**Table 4.13 :** Penetration of Social Networks in Turkey as of Q2 2014.

## Penetration of Social Networks in Turkey as of Q2 2014



Another statistics shows us; the most popular social network was Facebook with a 94 percent penetration rate in 2014. Overall, 47 percent of the Turkey population was active social media users (Statista, 2014). In a month 450 million people reached Facebook via their mobile devices, the use of mobile application is passing the desktop users. Facebook reached 80% mobile visitors, besides Facebook app become the third of most popular apps for mobile devices (Funk, 2013, p.176).

Companies can create accounts on those social networks and become visible for those customers. Social networks follow the trends and share their likes and publish it as social news to their friends. A local company can be popular with the use of Foursquare and with the comments and points given by the social community. They can create events and reach their followers directly with less costs and they can take the responses instantly, comments, reviews, wishes, feedbacks. Everybody see their friend attending the events and also they can ask the all friends about that event just one touch. During the events they can share instant pictures and create a virtual life experience with others feel the same energy and fun. Companies can create promotion codes or discount codes for their customers.

Moreover, Twitter announced to use “Buy Now” button in the year of 2014. Twitter users will make purchases directly within tweets, if they saw something they want to buy, customers will touch the “Buy” button and enter some information, entering

payment and shipping information even still using Twitter and complete the transaction with just a few tabs in near future. That step will drive the sales up and will encourage the mobile business (Ha, 2014).

Innovations about human life changed the world and still continues to change, so far we saw the new technologies shaped the world trade and purchases, showing and advertising their products and services and uses their power of recommending or reviewing products, new payment methods bring together supply and demands instantly, locally and easily when even customer moving and even at night time. The tools of mobile commerce are raising parallel as technology and human behavior.

## **5. CONCEPT OF CONSUMER AND CONSUMER ATTITUDES**

### **5.1. Concept of Consumer**

Consumer is the main and target concept of the market. Market is useless, not productive and meaningless without consumers. The consumer attitudes are creating the most important part of the market and also a sub topic of individual's behaviors. Consuming is the last part after economic manufacture and trade.

Market is living with understanding consumer needs and emotions and what they desire and the manufacturers following their wishes and supply their products and services to the market and that cycle keeps going with benefit with both sides. This process is a cycle influenced by consumer behaviors, expectations and local or worldwide trends. Sometimes it's hard to understand the consumer's wishes and it causes market failures.

Companies must follow and understand the consumer attitudes and desires of consumers and manufacture in right amount, time and location. Companies now have to understand consumer wishes from the manufacture to the selling and service departments. It's impossible to live with just only selling the products and not looking back to their customer wishes. Today they are taking feedbacks and rebuilt their products and services and that creates a growing market and customer satisfaction. The abundance of the products of today are rising because of competition and technology, that is creates a hard and complex choice for the consumers.

Consumer behavior represents the study of individuals and the activities that take place to satisfy their realized needs. That includes the nature of the consumer behaviors are complex because they are hard to realize by manufacturers. The things are making complex is individual's features and influences, personal or society

influences, group and the other different influences shaping the needs of the consumers.

Consumer behavior is not only consist of what the consumers want, also the companies must think further consumer behavior as the process that determines the why, what who, when, and how of what a consumer purchases (Lake, 2009).

Companies also search the statistics of how often the consumers and under what conditions they are deciding the purchasing behavior and after purchase are they satisfy about their decision. That is too much dynamic information about the trade sector and consumer behaviors, companies also uses to deal with that dynamic marketing strategies.

#### **5.1.1. Definition of consuming**

Consuming is the last part after economic manufacture and trade. Consuming with another words, is using the products or services to satisfy the consumer's needs that needed time. Consuming can show the tendency of individuals. Individual's consuming shows the society's tendency about consuming.

Consuming is changing and that makes it more a researchable area because of the consumer selections, emotions, expectations are changing by time. Because of the eras about population and income also women's role in the society and other demographic factors are changing the consumer behaviors in time.

#### **5.1.2. Definition of consumer**

Consumer is the natural person or legal entity who not making their actions for the purpose of commercially or professionally. Because of the fourth article of New Turkish Consumer Law, this definition changed and enlarged the meaning of Consumer (Uzun, 2013).

In the marketing the meaning of Consumer is the last person who tries to satisfying own and family needs with purchasing. Also there is also another consumer named organizational buyers, basically purchases for the purpose of their customer's needs. All humans accepted as consumers in their lifetime.

Consumers not only uses or buys the specific products or services with their usefulness they are selecting that specific brands because that also shows their

personality, social status also depends on psychological factors of the consumers. Consumers are buying with different feelings and every consumer's reason is can't be explain exactly. Because of to understand their attitudes in that area researchers made lots of surveys and thrive the marketing and commerce and other sectors.

### **5.1.3. Consumer Purchase Process**

The purchase is only the visible part of a more complex decision process created by the consumer for each buying decision he makes. Engel, Blackwell and Kollat have developed in 1968 a model of consumer buying decision process in five steps: Problem/need recognition, information search, evaluation of alternatives to meet this need, purchase decision and post-purchase behavior. These are (Perreau, 2014):

1. **Need Recognition/ Problem Recognition:** The problem recognition is the first and most important step in the buying process. If there is no need or problem, there is no purchase. This recognition happens when there is a lag between the consumer's actual situation and the ideal and desired one.
2. **Information Search:** the need or problem is identified consumer searching the possible solutions. This step depends on what consumer need urgency and also the solution purchase could be simple or super complex content for customer effects the searching time.
3. **Alternative Evaluation:** Once the information collected, the consumer will be able to evaluate the different alternatives that offer to him, evaluate the most suitable to his needs and choose the one he think it's best for him. In order to do so, he will evaluate their attributes on two aspects. The objective characteristics (such as the features and functionality of the product) but also subjective (perception and perceived value of the brand by the consumer or its reputation). This step is hard because of in the market there are a lots of alternatives.
4. **Purchase Decision:** After evaluating the alternative solutions the consumer makes his decision based on appropriate one of his experiences. This decision based on quality, perceived value, product's features and capabilities.
5. **Post-Purchase Attitude:** Once the product is purchased and used, the consumer will evaluate the adequacy with his original needs (those who caused the buying behavior). And whether he has made the right choice in buying this product or not. He will feel either a sense of satisfaction for the product (and the choice). Or,

on the contrary, a disappointment if the product has fallen far short of expectations. This step is creating the motivation to purchase that product again or not.

Individuals must make decisions and evaluations in every stage. So, the consumers must use the exact and true knowledge to decide in every stages of the consumer purchasing process. In real life it's hard to diverse that stages from each other, most of the situations are not put out with exact borders (Gümüş, 2014, p.81).

Moreover, according to the book Buyology, roughly 90% of our consumer buying behavior is unconscious and based on perceptions. For example, in a research they give wines with two price one is expensive price tag the other is cheap. The attendants said they have more enjoyment with higher priced ones. It is concluded, we enjoy our purchases because we paid more (Lindstrom, 2008, p.229-231).

## **5.2. Concept of Consumer Attitudes**

Before the mass production times marketing is not effective as today and costs was so important for the manufacturers. Also the buyer's purchase power is limited and they are accepting the mass manufacturer's products generally. After the 60's the consumer's purchase power, education and mass manufacture systems is divided the markets to small parts and created another level of rivalry among the companies. The competition and products are become diverse and that improvements are drove the consumers to the complex purchase decision attitudes. These complex information and variety of needs and solution options increased the marketing campaigns and the companies wanted more new customers and higher profits. Obtaining the target idea was not simple, they must understand the customer attitudes more deeper way to make contact with them (Gümüş, 2014, p.82).

The consumer's needs are become important in marketing and the companies' wants to supply the needed products and services at right time, right amount and right place. The companies needed to know the consumer attitudes to foresee the future wants and create the product diversity for taking new consumers. Before the 60's the communications are mostly uses oral way between sellers and buyers.

Today, because of the technology improving speed, visual and electronic communication ways are most used way to contact between the sides of trade. These

developments are changed the consumer behavior and companies behaviors and still continues to change for future ways of communications.

### **5.2.1. New technology and consumer interaction**

The world is changing faster and these changes are pushing the communities to leave their attitudes and use new and more valuable ones. Individuals are connected to each other with the Information Age technologies faster day by day. Technology and science are the main important things for the each community and that also shows the power of the countries.

The one of the important things for shaping daily life is absolutely technology. Because the technology giving the new ways of communications between the companies and consumers.

Obtain and use one technology is needs knowledge or practice of using at first, later that technology is becoming more spread in that area for manufacture and selling, at the end obtained technology needs to be use in improved level for further quality manufacture of production.

Technology is a tool for the market economy that helps to produce cheaper or new products, and that situation is raising the competition between the companies. The consumers also different after the Information Age, cable TV, world wide web, networks, phones, satellites and the other devices or services that individuals are using every day. Parallel to the devices and production methods and diversity and customer relationships changed by technology fast and today consumer wishes and needs are determining by these devices and they can purchase by these devices so fast and all that created a new type of consumer.

New kind of market makes the distances disappear between buyers and sellers. Mass production process changed for the individual's taste and choices special product and service productions.

Technology is moving forward and that creates a digital sensitive consumers. They are searching information by their digital devices and compare them to the substitute products from the internet. They can have fun, get useful information and instant information by their devices and that created an addiction for them. Companies saw that addiction and they followed their obsession and they wanted to be near to their

consumers. The new consumers are using internet, Smartphone, iPad, Laptop, Smart LED TV, Play Station, Xbox devices and most of these devices are cannot think a life without them. 10 years ago these devices are not in our lives but they are now become inevitable. Phones are the most used devices today. These phones are abundant and diverse by the country, nation and continents. These devices can also making a market about the other electronic needs like cables, additional apparatus and other compatible devices. Those electronic belongings created a mobile market and these big marketing shopping malls are open every time for their customers can view and search about the products whenever they want.

Popular culture expands because of the internet so fast and the internet users become aware global trends. They are watching the global product announcements from the internet and before the release sales they pre-ordering these products months ago.

According to the Turkish Statistical Institute, among the mobile internet users phone or Smartphone use raised to 58%, Mobile PCs (laptop, netbook, tablet etc.) use raised to 28,5% in first three months of 2014 in Turkey. These percentages was 41,1% and 17,1% at 2013. Also, the consumers rate of buying products and services among the internet users raised to 30,8%, it was 24,1% in 2013 (TUIK, 2014).

Consumers are living with consuming and the society working with new demands and supplies, the big companies' lives with the consuming trends for their sustainability. Because of that aim companies try to effect the consumer for consume their products with also luxury consuming they especially trying to change the consumer's habits and behaviors. New technologies creating new markets for their consumers and this interaction are vastly rides the consuming economies in the world.

### **5.2.2. The factors that effects the consumer purchase**

Companies supply their products and services to the consumer's attention with the help of marketing strategies. These strategies' making some effects on the consumer's attitudes and that creates behaviors for those situations. Companies must be careful when they are trying to influence the consumers because the individuals have different and distinctive personalities. There are lots of variables effects the consumer purchase process. There are four types of factor groups that affect the consumer attitudes (Tukcev, 2014, p.15-21):

## 1- Demographic Factors:

**Age:** Consumers want to purchase different things in different ages. Between the ages of youth and grown up person changes because of their attitudes.

**Gender:** Consumer needs and buying habits depend on their genders. The products on the markets generally divided for woman, man or unisex categories. Besides, it depends in countries of woman's social-work status about deciding the purchase.

**Education & Profession:** Educated customer demands are showing difference depending on their education levels. For example, doctors, teachers, employees have no same tastes, choices and buying attitude.

**Income Level:** When the consumers have different income they can make different purchases. Income the biggest factor to selecting products and services like brands, luxury, normal, cheap etc. Income level shows the consumer's choices and their attitudes are depends on that level in that way.

**Civil Status:** The consumer's attitudes being different when they are married or single because married consumer spending money on family based but the single consumer can focus on only for his interests. Their civil status affects their choices very crucially.

**Settlement:** The life environment of the consumer is very effective for their purchase decision, if they living a cold country or warmer country or expensive city or cheap city they are selecting different products. Some products selling better if we compare with others because of weather condition or local area tendency different.

## 2- Socio cultural Factors

**Culture:** Culture is a concept consisted on the beliefs, values, attitudes, habits passed to generations to generations also accepted and shared by their society. Culture is changing with the time and it is affected by other cultures too. Culture is effects the consumer's attitudes directly. Celebrating the important days like Valentine's Day, Halloween or Holyday Celebrations affects the consumer's purchases. The companies must examine the culture of the society and focus their consumers groups.

**Social Class:** Social classes are showing the mostly same group of family, job, life style, interests and values of the society. There are lower class, middle class, and upper classes. Lower classes are have not much income mostly workers, they are living for mostly their daily life purchases. Middle class is little show owners and they have advantages more than lower class, they are more educated and they can

spend more diversely than lower class. Upper class is the businessman, big company owners they are leaders and they are spending according their special wishes.

Reference Groups: These groups are affecting the consumer's attitudes directly or indirectly. There are two groups, first one is near environment of the consumer as family, friends, relatives and second one is some group externally effects the consumer attitudes like Healthy Food Organizations, Greenpeace etc. consumers are take affect from these groups and gain ideas for spending their money.

Family: Family is the main unit of the society related to blood or marriage and mostly living at the same house individuals. Family is shaping the consumer's attitudes when they are growing up with these tendencies they are have different purchase decisions.

### 3- Psychological Factors

Motivation: Motivations are the main factor consumer's attitudes. Motivation appears after the consumer's needs. Companies try to understand consumer's motivation elements and focus that area to satisfy and attract them.

Prosperity and generousness: Every individual wants to show prosperity by buying products and spending money.

Power Desire: Individuals can buy magnificent products or belongings to show their power. They are showing themselves by their purchased products.

Superiority Desire: Individuals wants to be different than others by superior purchases than other individuals.

Creativity: Individuals wants to buy the products those will raise or help their creativity and abilities.

Youth: Individuals makes purchases to feel themselves young, they follow new trends and wear youth style.

Pleasure: Some individuals making purchases just for the products style esthetic for them.

Attractiveness: Objects have also attractiveness signals; clothes are showing the attractiveness of individuals. People use some purchases in that way.

Respecting the traditions: Some consumers can stay loyal to their society's moral norms and make purchases based on those norms.

Kindness: People show their love by remembering or celebrating their important days and these days are raising the purchase levels.

Perception: Perception means knowing and feeling by the individuals senses through one object or incident. Then, these feeling and knowing become significant by the individual's understanding. Consumers can take signals of the prices, advertisement, campaigns and depends on the psychological situation. They are mixing these signals and understand which products more beneficial than other products.

Learning: People learn by living and some practices in their life and that experiences becoming permanent knowledge. Companies giving best experiences to their consumers and giving best way to reach them.

Personality: Personality is accumulation of unique biological and psychological features of individual. Every consumer has different personality effects their way of purchasing decision of products.

Attitudes and Beliefs: Consumers have different perception and attitudes with idea, object or symbol positive or negatively. Consumers decides if they like a brand or not and some of their tendencies depends on their beliefs.

#### 4- Economic Factors

Income and Wealth Rise: Income is one person's gained amount in a time period. Wealth is the amount of the one person's owned all economic values. Incomes and Wealth of families are changing in countries even in the cities. Consumers highly dependent on their incomes and wealth for buy products and services.

Credits: Credit cards and consumer credits are helping the consumers about not carrying money, helping them in difficult money situations, buying things with payments and discounts. In the other hand this easy demand rising in economic view raising the product prices in the market, besides individual's wrong usage causes problems.

The Change in Prices: The basic economic principle is the prices goes down, the consumers wealth is rises and purchases more. The product and services prices depends on economic ingredients inflation, interest rates, input costs, money politics etc. determines the consumer's behaviors. Consumers take into account that economic ups and downs as a purchase or not purchase decisions.

#### **5.2.3. Consumer attitudes**

Individuals are selecting their product and services, purchases; deciding using or leaving them and these activities we called consumer attitudes. There are lots of

surveys made by researchers in that field to understand and divide the consumer attitudes to the classes and why and how and why they are making their behaviors.

One man buys Porsche for only the technically advanced or in that automobile he shows himself young and powerful or a woman buys a Rolex watch just for showing time better than a cheap watch or it shows her classy and sophisticated? People purchase the products because they are feeling something special about them. In other words people buy because of emotional reasons. After purchase if we ask the people why they selected those products they explaining that purchase with logic and rationalize their attitudes.

Same attitudes works with cheap products too, one survey made by a university with tasting cola brands, the people was tied their eyes and tried the Coca-Cola and Pepsi and results are 50% Coca-Cola, 50% Pepsi won that competition. Later they made that test with open eyes and people selected 75% Coca-Cola and 25% Pepsi. The reason behind these, people buys with emotions and Coca-Cola Company have deeper root image than Pepsi Company. Emotions are very important for customers when they deciding to buy products (Hopkins et al., 2013, p.64-65).

The consumers affected by their demographic, socio-cultural, physiologic and economic factors and they are deciding their purchase. The consumers are deciding with emotional and informational features and its point out by “Consumer Manner Inventory”. CMI has these dimensions:

- 1- Perfectionism-High Quality Focus: Selecting the best product and searching very intense.
- 2- Brand Focus: Selecting the most known brands.
- 3- Innovation-Fashion Focus: Searching the new things and likes to follow the fashion.
- 4- Entertainment-Joy Focus: having joy with the purchasing and making purchases for entertainment.
- 5- Price Focus: Following the discounts and searching for best price and performance.
- 6- Purchasing Without Thinking-Carelessness: Making purchases without plan and inattentive.

7- Variety Complexity: Hard to make decision because of brands, stores and abundance of information.

8- Habit-Brand Attachment Focus: The consumer loves and feel attached some store and brands and these places becomes a habit for him.

According to the consumer manner inventory consumers use one or more than one dimensions and buy new products and services (Arslan, 2012, p.96-97).

Technology gives comfort and ease of use to the consumers and consumers are reaching what they want today. Technological advances created the mobile commerce, and that is today become an important key stone about consumer's attitudes. Internet helps the organizations, presenting products and services, consumer relationships applications and entering the new markets. Besides, the technology creates an environment to force the organizations innovate themselves, create long term relationships with consumers and keep that without losing with a really competitive surrounded rivalry.

Mobile communication technology improvements helped to organizations create physical and digital experiences for the consumers. The consumers now everywhere and every time purchase what they want, compare, find perfect product for them, follow, twit, share ideas, likes easily by mobile devices and make instant emotions and ideas to purchases.

### **5.3. Turkish Consumer Profile**

Being mobile is preventing no one from anything in their life, however gives advantages. Just for one day someone takes all our mobile devices from us we feel like a fish out of water. Today no one goes to the street without phones. We are watching or touching our phones and tablets in the traffic, waiting in the line or even when we are watching TV. According to the TÜİK (Turkish Statistical Institute) statistics shows Turkey's important general characteristics of Turkish Consumer Profile.

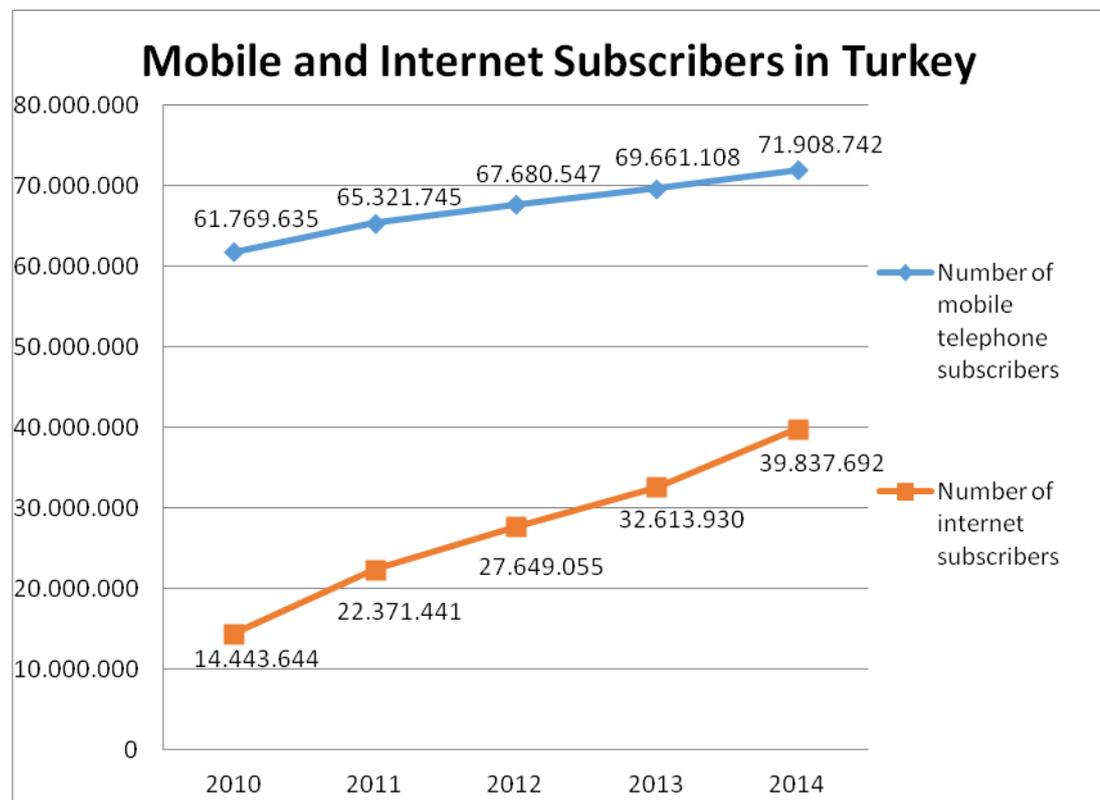
Turkey population age gender is important for Turkish consumer profile the ages between 15-64 group the biggest population group as the workforce of Turkey (Tuik, 2014).

**Table 5.1 : Population of Turkey**

Population numbers of Turkey in the year 2013							
Year	Age group	Total	Male	Female	Total	Male	Female
					Proportion (%)		
General Population Census							
<b>2013</b>	Total	<b>76 667 864</b>	<b>38 473 360</b>	<b>38 194 504</b>	<b>100,0</b>	<b>100,0</b>	<b>100,0</b>
	0-14	18 849 814	9 675 248	9 174 566	24,6	25,1	24,0
	15-64	51 926 356	26 237 038	25 689 318	67,7	68,2	67,3
	65 +	5 891 694	2 561 074	3 330 620	7,7	6,7	8,7

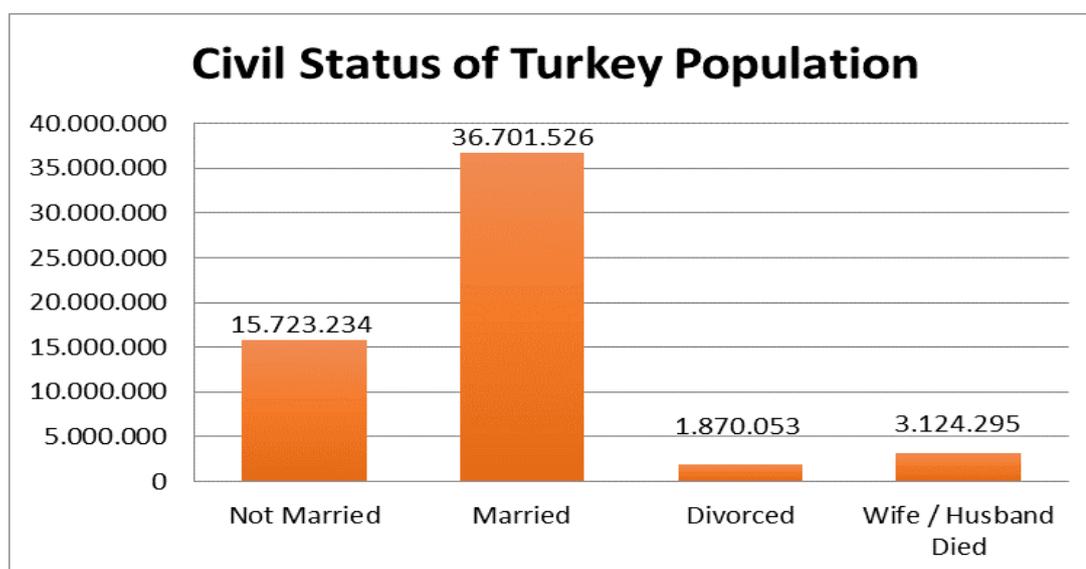
Mobile Telephone and internet subscribers are rising within the years the mobile internet usage doubled in last 4 years. That is a huge potential on mobile marketing and commerce (Tuik, 2014).

**Table 5.2 : Mobile and Internet Subscribers in Turkey**



The population life is also effects the purchase decision and at the below table shows the population's Civil Status in Turkey. Great of number people is married in Turkey. They are the biggest group among the other population groups (Tuik, 2014).

**Table 5.3 :** Civil Status of Turkey



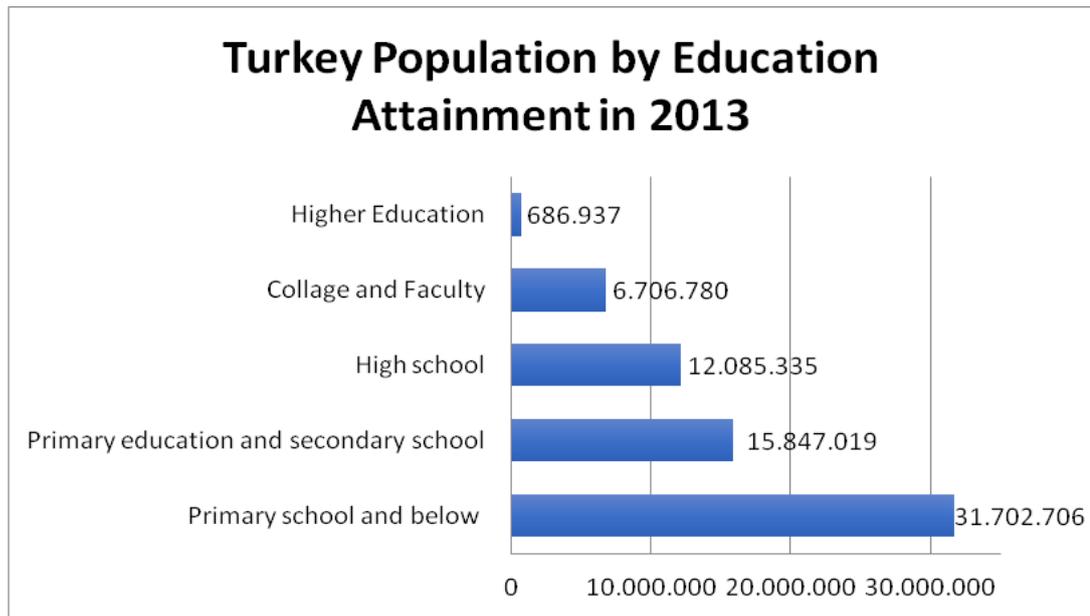
After the global recession of 2009 to the 2013 years, purchasing power of Turkish consumer is raised in the comparison with OECD countries and that created to the people to invest or spend money for their needs (Tuik, 2014).

**Table 5.4 :** Purchasing Power Parity of Turkey

<i>Purchasing Power Parity Indicators in Turkey within the framework of the comparisons for OECD countries</i>				
Years	<i>Purchasing Power Parity (USA Dollar=1,00)</i>	<i>Price Level Indices (OECD - Total=100)</i>	<i>Reel GDP (Million USA Dollar)</i>	<i>Per Capita Reel GDP (USA Dollar)</i>
<b>2009</b>	0,91	58	1 048 319	14 550
<b>2010</b>	0,94	61	1 168 281	16 003
<b>2011</b>	0,99	56	1 314 897	17 781
<b>2012</b>	1,05	57	1 345 714	17 967
<b>2013</b>	1,10	58	1 425 224	18 809

Another demographic factor is education, according to the Tuik statistics below the biggest part of the population is Primary school and below this number of people contains; 2.654.643 persons doesn't know read or write, 14.053.831 persons knows to read or write but they didn't finished any school, 14.994.232 persons finished the First school. These levels are so low if we compare the European countries, according to the Eurostat data in Educational Statistics 35,7% have university degree or similar qualification in the year 2012 (Eurostat, 2014), in Turkey that graduation levels are listed below at the table approximately %11 in the year 2013 (Tuik, 2014).

**Table 5.5 :** Education Attainment of Turkey

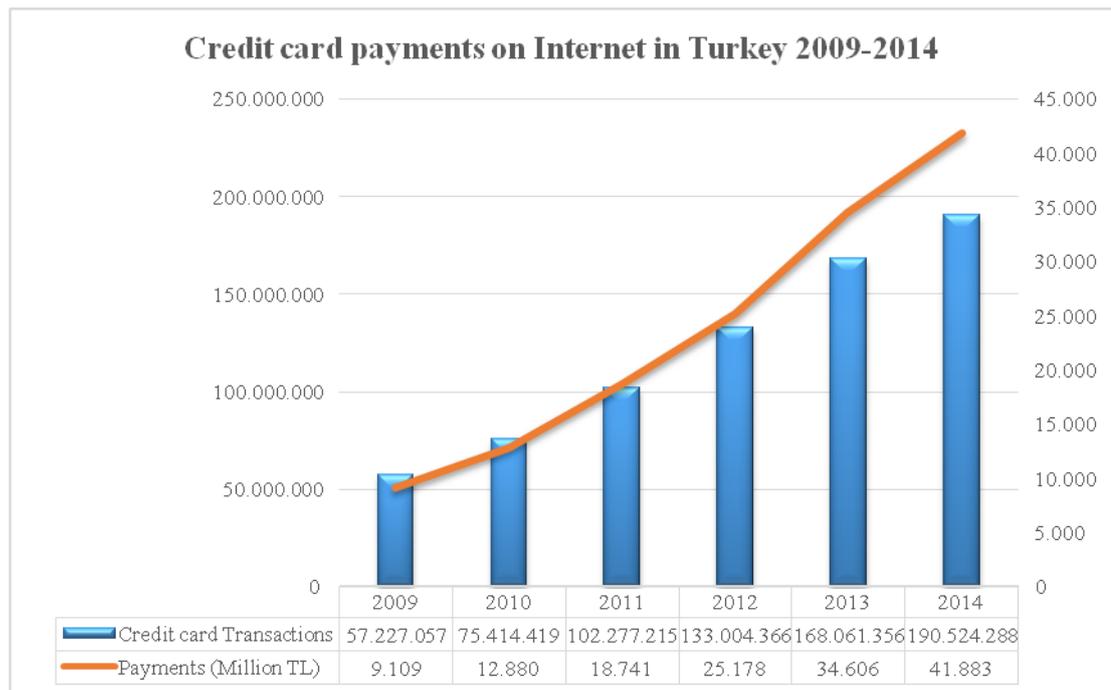


According to the study about E-commerce shows that with the credit card amount in Turkey 54 Million in 2013 and with that Turkey is secondary at this statistic, debit card usage Turkey taking first place with 89 Million cards and Turkey have first place in POS terminal amount with 2,1 Million POS terminal. ATM machine amount is 35.000 and Turkey have sixth place among European countries (Afra, 2014, p.45).

**Table 5.6 : Debit, Credit Card and POS Statistics in Turkey**



**Table 5.7 : Credit Card Payments on Internet in Turkey (BKM Statistics, 2014).**



According to the BKM card monitor report %86 of the individuals are using credit cards when shopping on internet. The table above shows how the credit card usage on internet payments raised over the years. Besides that, the report outlines with the credit cards monthly average payment is 886 TL in Turkey. The credit card limit averagely 4.360 TL and they are using averagely %37 of their credit card limit. %72 of the attendants are paying all of their credit card debts, but %24 of them is partly paying their debts. The attendants answered the question about credit cards most liked features; %64 of them liked the feature of monthly installment options at more shopping places, %24 of them liked the bonus collecting feature when they are spending, all these features are very important for Turkish consumers.

A transportation project in Konya city started in 15 April 2013 by using contactless featured credit cards, debit cards and also banking card and NFC featured phones can able to use for payments on the public transport vehicles. The project also a big step for the future payment systems. The survey question asked about how the individuals want to make their payments in future and %31 of the attendants wanted to use the “mobile phone” as a payment device in future. (BKM Report, 2013, p.17-44)

Consumers are taking affected by their close friends and family, tag information, sales point recommendations and TV commercials. When the consumer’s socio-economic status raising the usage rate of information sources are rising too. %65,5 of the consumers are affected by at least an advertisement when they purchasing. It is observed by the years consumers changed their information channels. Consumers are considering the advertisements as an information source %10 in the year 1999, today this rate risen to %50. According to the survey among Turkish consumers, %84,4 of the consumers are searching for good prices before the purchase. %16,7 of the consumers are making price searching every time. Consumers are searching two sources averagely before buying. Approximately 2 of 10 consumers are searching the prices from internet shows that high rate usage of internet (Tukçev, 2014, p.41).

When companies offers discounts a product that interested you at the moment when costumers in the shop. They can use their smartphones to search same product in the online price search engines and they can decide it’s a good price or not for them. Even they are purchasing the products in other countries they can use Google translate option with the foreign web pages and translate the online shopping pages and convert their money to their public money by the applications instantly

according to the instant currencies. These improvements are giving the consumers best benefit purchases or options.

According to the survey approximately half of the Turkish consumers making bargain, following the discounts of the products, company's brochures or other discounts. %39,4 of the consumers are always trying to get the cheapest products (Tukçev, 2014, p.47).

Brand loyalty also another side of the purchasing element, 6 of 10 people are not leaving their brand loyalty that get used to it. %82 of the less brand loyal persons changing their brand if the price is better. The price is the main thing for deciding brand loyalty. The brand loyalty rises when the consumer's education levels are higher. Same results about the consumer's socio-economic status are rises their brand loyalty rises too (Tukçev, 2014, p.49).

If we take a look at the perspective of positive psychology values for the consumers have, %65 of the consumers are doing their purchases for they are having pleasure, %46,9 of them is doing shopping not for needed, they make it only for the following their wishes. %44,6 of the consumers are instead of the other things they could do they are liking shopping and spending time with it, %46,5 of the consumers says they forgetting their problems when they are making purchases.

Half of the consumers are saying that they are going shopping for their needs but later %23,2 of them says really bought what they need after shopping. That means, almost half of the consumers (%45,8) are buying products unnecessarily more than they needed (Tukçev, 2014, p.59).

Consumers have lots of movable electronic devices nowadays, 44% of the house has laptops and %6,4 of consumers have Tablet PCs, and the ultra-book is just %1. In the last 6 months the most sold pc type is Tablet PCs. %41 of the consumers bought their tablet PCs in last 6 months. %94,1 of the Ultrabook owners bought their devices in between last 6 months and 1 year. Smartphone ownership is %37,9 generally in Turkey, this percentage is higher in big cities. Cellphone ownership is %70 generally in Turkey. Socio-economic status and computer and smartphone ownership has same positive slope. According to the Technology Trend Survey in 2009 they projected the consumers will buy a smartphone (%16,1) is the first thing they planned to buy, after it laptop computers are following (%12,8). These projections are become real in the

light of their findings on research results. Besides that the internet connection rate of the consumers in 2007, %30,9; in 2009, %60,4; in 2014, %64,4. That shows internet connection subscribers are raising within the years in Turkey (Tukçev, 2014, p.78-80).

Internet purchase percentage among the internet users in 2014 is %30,8 and one year before it was %24,1 according to the TUIK statistics. That is showing one of third internet users are purchasing products or services from internet. Turkish consumers feels not safe themselves, they get used to buy things seeing and touching, hard to make payments from internet and doesn't like such type of shopping etc. these are the main factors keeping the consumers away from the online shopping. The product groups for online shopping from most popular to less popular; Clothes and Accessories, Electronics, Travelling Products (Tickets etc.), Books and magazines, Cosmetics and Personal Care products, Home, Decoration Products, Toys and Hobby products, DVDs, movies and games, Mother and Baby Products.

According to the Deloitte report about smartphone usage effects on retail sales analysis shows that smartphones effected the retail sales %0,7, which means 1,7 Billion TL, in 2012. Smartphones effects, even with this percentage, 6 times bigger than a mobile retail sector predicted 300 Million TL sales. This is just the beginning. In the report forecasts expects smartphone usage effect will rise to %14-%17, which means 65-80 Billion TL retail sales. In the report also pointed out this growing rate expecting to reach %35 in United States of America, %26 in England and in Turkey %80 in 2016 (Deloitte, 2014, p.1-5).

Turkey has a big potential for mobile commerce and payments and Turkish consumers will use their mobile devices more in time according to the reports. The new kind of Turkish consumer profile with the mobile commerce won't only make benefits for himself. According to the another report of Kızılot, stressed that, with the card payments systems helping the fixing Turkey's important economic growth, registered sales rising the tax revenues and that helps to create more opportunities for unemployed people, 1 TL payment with credit cards rising 1,42 TL the GDP of Turkey which that makes the rise of the income levels of the consumers. Also monthly payments of the credit card users helped them to buy their needs even in crisis times and preventing the demands from going down for companies. (Kızılot et al., 2014, p.138-145)

The sixth and last episode of the study, hypotheses tested about determining the main components of mobile commerce related to customers' demographical properties measured by SPSS (Statistical Package for the Social Sciences) and Google Docs. The data collected by making a survey, and applied to the employees and data obtained by this way. After analysis of survey results, findings of study are evaluated.



## **6. DETERMINING THE MAIN COMPONENTS OF MOBILE COMMERCE RELATED TO CUSTOMERS' DEMOGRAPHICAL PROPERTIES RESEARCH**

### **6.1. Method of the Research**

#### **6.1.1. Problem**

In the light of literature researches and the empirical studies shows mobile commerce opportunities effecting the attitudes of customers. Especially in Istanbul, Turkey the customers trying to purchase their needs in everywhere and every time. They are using technology and searching for products and services and compare their prices, quality, consumer experiences instantaneously. For these reasons I needed to research if they have significant connection between their customers' demographic properties related mobile commerce.

#### **6.1.2. Purpose of research**

The purpose of the research, the determining the main components of mobile commerce related to customers' demographical properties. Research aims at the significant connection about their demographic factors of customers' towards mobile commerce.

#### **6.1.3. Importance of research**

Commerce and technology follows each other at the same time and collaborate for success and satisfy the consumers more day by day. This improvements and changes between the companies and consumer's new interaction areas made the researches necessary to create better relationships and make them sustainable for future. Another point of the thesis is shows how mobile usage and mobile commerce effects the today's consumer attitudes.

Mobile commerce is the new way to reach the new type of generation and the survey and research focused on the employee's demographical factors to reach effective demand owners and how they experience the new type of communication way.

#### **6.1.4. Population and Sample**

This research population is based of employees which they are living Istanbul city and most of them internet and mobile internet users, the education levels are above the average of the community and they are working a stable job of government mostly. In that community we selected the persons coincidentally and applied the form of survey to them.

#### **6.1.5. Assumptions**

The assumptions of the survey are;

- The answers on the survey form filled by individuals' shows their real perceptions.
- The survey attendants represent the universe sufficiently.
- The attendants are answered the survey form eagerly and considering the objective truths.
- The survey results are tested with harmonic statistical techniques according to the aim of the research.

#### **6.1.6. Limitations**

This research has some limitations with the amount of samples and the other directions of research. This survey form, applied the individuals whom living in Istanbul city and most of them users of internet and mobile internet, their education levels are above the average of the as a social group of the community. Because of the limitations the results are only acceptable for Istanbul city. The other cities or regions can give different results according their features.

#### **6.1.7. Collecting the Data**

In this research, survey method used for gathering information. Survey is an observation by creating a list of questions to obtain information from the individuals

directly. Survey applied by giving the forms to the individuals with printed or electronic and told the attendants about the main aim of the survey.

In the survey form there are multiple choice questions as a scale. Scales are prepared by up to date and internationally accepted sources. The survey main mass is the employed individuals in Istanbul city which uses internet and mobile internet. In the survey, attendants giving information about their age, job, education, gender and income levels etc. questions asked. Collected data from the survey forms used and evaluated by the help of SPSS statistical program and Google Docs.

#### **6.1.8. Analysis of the data**

The attendant individual's general information and demographic features presented frequency and percentage in the lists as in shape of chart.

### **6.2. Findings and Conclusion**

#### **6.2.1. Demographic structure**

The individuals attended the survey demographic features shown in the chart. Their age, gender, education, job and income levels are collected and summarized in the chart below.

**Table 6.1 : Demographic Characteristics**

Respondents' Profiles		Frequency	Percentage	Cumulative Percentage	
GENDER	Male	68	54,8	54,8	
	Female	56	45,2	100,0	
	SUMMARY	124	100,0		
AGE	< 19	0	0	0	
	20 - 30	59	47,6	47,6	
	31 - 40	42	33,9	81,5	
	41 - 50	21	16,9	98,4	
	> 51	2	1,6	100,0	
	SUMMARY	124	100		
CIVIL STATUS	Bachelor	68	54,8	54,8	
	Married	56	45,2	100,0	
	SUMMARY	124	100		
EDUCATION	Primary School	0	0	0	
	High School	7	5,6	5,6	
	Collage	6	4,8	10,5	
	University	84	67,7	78,2	
	Master's Degree	27	21,8	100,0	
	Ph.D. and above	0	0,0	100,0	
	SUMMARY	124	100		
EMPLOYMENT	Official (Public)	87	70,2	70,2	
	Worker (Private)	26	21,0	91,1	
	Self-Employed	5	4,0	95,2	
	Others	6	4,8	100,0	
	SUMMARY	124	100		
MONTHLY INCOME	Less than 1000 TL	3	2,4	2,4	
	Between 1001 - 2000 TL	16	12,9	15,3	
	Between 2001 - 3000 TL	60	48,4	63,7	
	Between 3001 - 4000 TL	38	30,6	94,4	
	4001 TL and above	7	5,6	100,0	
	SUMMARY	124	100		
	MONTHLY SAVING RATIO	No savings	51	41,1	41,1
		Less Than %25	54	43,5	84,7
Between %26 - %50		11	8,9	93,5	
Between %51 - %75		6	4,8	98,4	
More Than %76		2	1,6	100,0	
SUMMARY		124	100		

As seen in the table above, among the 124 respondents, 54,8% are males and 45,2% are females. The respondents are mostly aged 20-30 ages 47,6% and 31-40 aged 33,9% becomes the biggest groups. According to the ages of attendants 54,8% of them is bachelor and 45,2% is married. When we look at the Education levels we are seeing most of the respondents have university degree 67,7% and masters degree 21,8%. Respondents occupation is mostly official public sector 70,2%, and workers in private sector 21%. Their income levels are 48,4% of them between 2001-3000 TL, 30,6% of them 3001-4000 TL. Their savings ratios 43,5% Less than 25%, and 41,1% is no savings.

**Table 6.2 : Descriptive Statistics of Survey Questions**

<b>Attitude Statements</b>	<b>Mean</b>	<b>Median</b>	<b>Std. D.</b>
I often prefer card payment (credit card, debit card, etc.) for my shopping.	3,69	4	1,303
I use often Mobile devices (phone, smartphone, tablet, etc.) in my daily life.	4,31	5	1,106
I often connect to internet with my mobile devices.	4,38	5	1,041
I'm using mobile devices to reach information (product characteristics, price, comparison, etc.) about the products I want to buy.	3,90	4	1,266
I thinking the advertisement messages positive and adequate that received by mobile devices.	2,38	2	1,266
I'm thinking the communication tools (SMS, MMS, e-mail, voice search, etc.) are positive and useful about products and services.	2,46	2	1,315
I finding positive the campaign, special deals, coupons and discounts information that I taking by mobile devices.	2,65	3	1,362
I'm finding positive the mobile entertainment services (video, games, music, etc.)	3,10	3	1,261
I find mobile shopping more than entertaining than traditional shopping.	2,91	3	1,148
I am thinking that there are no security problems in mobile shopping.	2,77	3	1,176
I find mobile shopping more reliable than traditional method of shopping by trying and seeing the products.	2,28	2	1,152
I find the purchase of products and services by mobile devices necessary.	3,70	4	1,097
I'm thinking the information, campaign, discount messages that I received by mobile devices are comfortable and attractive.	2,48	2	1,213
I find shopping by mobile phone is positive.	3,51	4	1,108
My general intention to shop via mobile phone is high.	3,09	3	1,236
If the prices and monthly payments of products and services are better than in traditional shopping, I prefer mobile shopping.	3,85	4	1,174
I prefer mobile shopping when my time is limited or if I wanted to gain time.	3,67	4	1,215
I can do my operations fast and everywhere by mobile applications (mobile banking, money transfer, navigation, social networking, mobile wallet, and mobile shopping apps).	4,02	4	1,067
I want to make mobile shopping often with greater amounts in future.	3,69	4	1,100
(1.Strongly Disagree, 2.Disagree, 3.Neither Agree Nor Disagree, 4.Agree, 5.Strongly Agree.)			

The results suggest that respondents have positive attitudes but there are negative attitudes about mobile advertising, information, campaign, discount messages and traditional way of purchasing more reliable than mobile commerce.

### 6.2.2. Hypotheses testing

IBM SPSS Statistics 22 for Windows was used to analyze survey data. In data analysis, mean and standard deviations of questions used in Likert scale were calculated and independent-samples t-test, one-way ANOVA and post hoc analysis were used for hypotheses testing.

H1: There is a relationship between gender and attitudes on mobile commerce.

**Table 6.3 : Gender T-Test Results**

Group Statistics					
Gender		N	Mean	Std. Deviation	Std. Error Mean
Mean	Male	68	3,3111	,70059	,08496
	Female	56	3,3026	,58748	,07850

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Mean	Equal variances assumed	3,199	,076	,072	122	,942	,00851	,11766	-,22441	,24143
	Equal variances not assumed			,074	121,953	,941	,00851	,11568	-,22048	,23751

The hypothesis H1 is rejected because the connection value Sig. (2-tailed) is significant than 0,05 ( $0,942 > 0,05$ ) according to the SPSS T-Test statistics results.

H2: There is a relationship between age and attitudes on mobile commerce.

**Table 6.4 : Age ANOVA Results**

Descriptives								
AGES	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
20-30	59	3,4532	,53905	,07018	3,3127	3,5936	2,11	4,89
31-40	42	3,2794	,71972	,11106	3,0552	3,5037	1,63	4,63
41-50	21	2,9398	,67510	,14732	2,6325	3,2472	1,53	4,21
>51	2	3,4474	,70711	,50000	-	9,8005	2,95	3,95
					2,9057			
Total	124	3,3073	,64938	,05832	3,1919	3,4227	1,53	4,89

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4,163	3	1,388	3,490	,018
Within Groups	47,707	120	,398		
Total	51,869	123			

The hypothesis H2 is accepted because the significant connection value Sig. is lower than 0,05 ( $0,018 < 0,05$ ) according to the SPSS Anova statistics results. To find the different group, Tukey's Test as a Post-Hoc Test has been applied and it was seen that 41-50 age group's mean differs from others.

H3: There is a relationship between marital status and attitudes on mobile commerce.

**Table 6.5 : Marital Status T-Test Results**

Group Statistics					
Marital_Status		N	Mean	Std. Deviation	Std. Error Mean
Attitudes_Mean	Bachelor	68	3,2314	,65460	,07938
	Married	56	3,3994	,63664	,08508

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Attitudes_Mean	Equal variances assumed	,090	,765	-1,440	122	,152	-,16801	,11667	-,39898	,06296
	Equal variances not assumed			-1,444	118,639	,151	-,16801	,11636	-,39842	,06240

The hypothesis H3 is rejected because the significant connection value Sig. (2-tailed) is significant than 0,05 ( $0,152 > 0,05$ ) according to the SPSS T-Test statistics results.

H4: There is a relationship between education and attitudes on mobile commerce.

**Table 6.6 :** Education Status ANOVA Results

Descriptives								
Education	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
High School	7	3,1805	,42526	,16073	2,7872	3,5738	2,74	3,95
Collage	6	2,9298	,93954	,38357	1,9438	3,9158	1,84	4,00
University	84	3,3778	,62425	,06811	3,2423	3,5133	1,63	4,89
Master's Degree	27	3,2047	,68938	,13267	2,9320	3,4774	1,53	4,42
Total	124	3,3073	,64938	,05832	3,1919	3,4227	1,53	4,89

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1,670	3	,557	1,330	,268
Within Groups	50,200	120	,418		
Total	51,869	123			

The hypothesis H4 is rejected because the significant connection value Sig. is significant than 0,05 ( $0,268 > 0,05$ ) according to the SPSS Anova statistics results.

H5: There is a relationship between employment and attitudes on mobile commerce.

**Table 6.7 :** Employment Status ANOVA Results

Descriptives								
Employment	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
					Lower Bound	Upper Bound		
Official (Public)	87	3,3243	,66093	,07086	3,1834	3,4651	1,53	4,89
Worker (Private)	26	3,3968	,49063	,09622	3,1986	3,5949	2,32	4,37
Self-Employed	5	3,1263	,81926	,36639	2,1091	4,1436	1,89	4,00
Others	6	2,8246	,87227	,35610	1,9092	3,7399	1,63	4,05
Total	124	3,3073	,64938	,05832	3,1919	3,4227	1,53	4,89

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1,795	3	,598	1,434	,236
Within Groups	50,074	120	,417		
Total	51,869	123			

The hypothesis H5 is rejected because the significant connection value Sig. is significant than 0,05 ( $0,236 > 0,05$ ) according to the SPSS Anova statistics results.

H6: There is a relationship between monthly income and attitudes on mobile commerce.

**Table 6.8 : Monthly Income Status ANOVA Results**

Descriptives								
Monthly Income	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
					Lower Bound	Upper Bound		
Less Than 1000 TL	3	3,4561	,45377	,26199	2,3289	4,5834	3,05	3,95
Between 1001-2000 TL	16	3,1546	,53999	,13500	2,8669	3,4423	2,11	4,16
Between 2001-3000 TL	60	3,3254	,61237	,07906	3,1672	3,4836	1,63	4,89
Between 3001-4000 TL	38	3,2590	,76939	,12481	3,0061	3,5119	1,53	4,63
4001 TL and above	7	3,6992	,48876	,18473	3,2472	4,1513	2,95	4,37
Total	124	3,3073	,64938	,05832	3,1919	3,4227	1,53	4,89

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1,623	4	,406	,961	,432
Within Groups	50,246	119	,422		
Total	51,869	123			

The hypothesis H6 is rejected because the significant connection value Sig. is significant than 0,05 ( $0,432 > 0,05$ ) according to the SPSS Anova statistics results.

H7: There is a relationship between monthly saving ratio and attitudes on mobile commerce.

**Table 6.9 : Monthly Saving Ratio Status ANOVA Results**

Descriptives								
Monthly Saving Ratio	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
					Lower Bound	Upper Bound		
					No savings	51		
Less Than %25	54	3,3070	,64117	,08725	3,1320	3,4820	1,63	4,89
Between %26-%50	11	3,2919	,91928	,27717	2,6743	3,9094	1,53	4,63
Between %51-%75	6	3,6491	,34859	,14231	3,2833	4,0149	3,21	4,05
More than %76	2	3,5526	,70711	,50000	-2,8005	9,9057	3,05	4,05
Total	124	3,3073	,64938	,05832	3,1919	3,4227	1,53	4,89

ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	,933	4	,233	,545	,703
Within Groups	50,936	119	,428		
Total	51,869	123			

The hypothesis H7 is rejected because the significant connection value Sig. is significant than 0,05 ( $0,703 > 0,05$ ) according to the SPSS Anova statistics results.

### 6.3. The Result and Suggestions

The needs and demands are limitless, consuming is limited and the last step of purchasing chain. The commerce changed in time according to the technological advances. Now we reached mobile age, and we can do every kind of things with our pocket size computer like mobile devices. The variety of products and sellers creates huge and complex shopping environment for the consumers. In such market pushed to the sellers understand their consumer's wants closely and guide them to suitable products and services.

The survey results are showed no difference between female and male groups also there's no significant difference between bachelor or married customers, education levels, employments, monthly income and saving ratios. There is only significant relationship between the age factor and mobile commerce. Customer purchase wishes and abilities are changing according to their life period. The age period of the customers makes changes of their wishes and needs, also in the different periods consumers are selecting the different services and goods. The mobile commerce mostly selected by young age period because of their parallel use of mobile devices and mobile internet. The young individuals are more taking risks among the other groups and try new ways to reach their wants.

In the hypothesis number two focuses about age factor and mobile commerce relationship, according to hypothesis Anova mean results between age groups have decreasing mean numbers according to their age rising, after the 41-50 age group mean numbers rising. In other words, when the generations getting older they are using less mobile technologies and mobile commerce but after 41-50 age group consumers intention to mobile commerce rising because 51+ age group don't want to show themselves as untalented or insufficient about technology and mobile devices than other age groups. They are trying to be digital immigrants. Test results shows among other age groups 41-50 age group differs because they are born in 1964-1974 years and between these year period even teleshopping didn't invented, because of this reason, this age generation have traditional understanding and that's why their mean level is lower than other age groups. If we summarize, consumer's attitudes to the mobile commerce creates a significant relationship because of generation differences and also its dependent on that different generations' adaptation to the technologic advances in the world.

The markets understand the big role of the consumers and produce according to their wishes are crucial for the life of the companies. The companies tried to understand their new channels and use channels as a commerce connection for provide consumer's wishes and demands.

Mobile commerce is a new and effective channel for business and as we see from the results of survey customers are using their mobile devices very often in their daily life. They are searching instant searches by their mobile devices everywhere and they can see other seller's prices and compare it or see where the best offers are. That

makes us to understand creating a mobile web page is the key element for every kind of business. The respondents said they finding shopping by mobile phone are positive and they are price sensitive if the mobile prices are better and when they wanted to gain from time, they will purchase from mobile devices.

Mobile commerce respondents not satisfied by the information, campaigns, special deals, coupons and discounts messages, SMS, MMS, e-mails and mobile entertainment services. Their general intention via mobile phone not intense but it is positive.

The companies' have to follow the consumer ideas to achieve success. As we understand most of the attendants didn't like the communication tools because of their usage is mostly repetitive, misleading or without permission. In the year of 2015, Turkish government planning to force laws about information messages for mobile phones. In survey results agreed that information messages about companies or products are uncomfortable and unattractive. This is a big problem in turkey mobile market. The attendants also find the traditional shopping more reliable than mobile commerce. For eliminating such attitudes, mobile commerce buyers must have more secured by payments or returning the product without any reason. These rights can be better by electronic trade laws.

The mobile commerce mostly using electronic money from bank accounts, credit cards etc. this helps to government register all transactions and helps the rise income level of the government. As a result mobile commerce helping the government fight against off-the-books sales and provide more service to the community and it will affect the wealth of the citizens. As we see from the survey results the responders are agree to using credit cards or debit cards in their payments, they can use or add their cards to mobile wallets and this attitude will help the mobile payments rise. Another survey question about monthly savings showed that a big majority of responders have no savings or they have less than 25% of savings that is also shows that they are almost spending their %75 percent of income. The consumers are price sensitive as we pointed out in the light of the survey questions. They are examining the products from real shops but they can purchase it from mobile commerce companies. This is totally beneficial for consumer's budget, so we can conclude mobile commerce have cost advantage if we compare it with retail stores.

The improving countries are making their real and digital worlds closer to each other and adding new content, values, abilities to achieve more success on mobile commerce area, so for me that is important for future of the companies, consumers and governments. In the thesis, it is pointed out often mobile devices and mobile digital world growing faster and thriving real and digital worlds become one part. Especially, this growing side of the internet needs to be regulated by new rules or protocols about security and safety.

Turkish sales sector needs to improve throughout the world and must be competitive against the worldwide companies by new approaches. Our improvements not only for our culture but also must be for international cultures. The cultures of humans, fast growing technology and new channels for trade with a changing world this study area needs improvements by further academic studies.

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## **APPENDICES**

### **APPENDIX A: Research Question Form**



## **APPENDIX A: RESEARCH QUESTION FORM**

1-Gender?

- Male
- Female

2-Age?

- <19
- 20-30
- 31-40
- 41-50
- >51

3- Marital Status?

- Bachelor
- Married

4- Education?

- Primary School
- High School
- Collage
- University
- Master's Degree
- Ph.D. and above

5- Employment?

- Official (Public)
- Worker (Private)
- Self-Employed
- Others

6- Monthly Income?

- Less than 1000 TL
- Between 1001 - 2000 TL
- Between 2001 - 3000 TL
- Between 3001 - 4000 TL
- 4001 TL and above

7- Monthly Saving Ratio?

- No savings
- Less Than %25
- Between %26 - %50
- Between %51 - %75
- More Than %76

8- I often prefer card payment (credit card, debit card, etc.) for my shopping.  
(1.Strongly Disagree, 2.Disagree, 3.Neither Agree Nor Disagree, 4.Agree, 5.Strongly Agree.)

9- I use often Mobile devices (phone, Smartphone, tablet, etc.) in my daily life.  
(1.Strongly Disagree, 2.Disagree, 3.Neither Agree Nor Disagree, 4.Agree, 5.Strongly Agree.)

10- I often connect to internet with my mobile devices.  
(1.Strongly Disagree, 2.Disagree, 3.Neither Agree Nor Disagree, 4.Agree, 5.Strongly Agree.)

11- I'm using mobile devices to reach information (product characteristics, price, comparison, etc.) about the products I want to buy.  
(1.Strongly Disagree, 2.Disagree, 3.Neither Agree Nor Disagree, 4.Agree, 5.Strongly Agree.)

12- I thinking the advertisement messages positive and adequate that received by mobile devices.  
(1.Strongly Disagree, 2.Disagree, 3.Neither Agree Nor Disagree, 4.Agree, 5.Strongly Agree.)

13- I'm thinking the communication tools (SMS, MMS, e-mail, voice search, etc.) are positive and useful about products and services.  
(1.Strongly Disagree, 2.Disagree, 3.Neither Agree Nor Disagree, 4.Agree, 5.Strongly Agree.)

14- I finding positive the campaign, special deals, coupons and discounts information that I taking by mobile devices.  
(1.Strongly Disagree, 2.Disagree, 3.Neither Agree Nor Disagree, 4.Agree, 5.Strongly Agree.)

15- I'm finding positive the mobile entertainment services (video, games, music, etc.)  
(1.Strongly Disagree, 2.Disagree, 3.Neither Agree Nor Disagree, 4.Agree, 5.Strongly Agree.)

16- I find mobile shopping more than entertaining than traditional shopping.  
(1.Strongly Disagree, 2.Disagree, 3.Neither Agree Nor Disagree, 4.Agree, 5.Strongly Agree.)

17- I am thinking that there are no security problems in mobile shopping.  
(1.Strongly Disagree, 2.Disagree, 3.Neither Agree Nor Disagree, 4.Agree, 5.Strongly Agree.)

18- I find mobile shopping more reliable than traditional method of shopping by trying and seeing the products.  
(1.Strongly Disagree, 2.Disagree, 3.Neither Agree Nor Disagree, 4.Agree, 5.Strongly Agree.)

19- I find the purchase of products and services by mobile devices necessary.

(1.Strongly Disagree, 2.Disagree, 3.Neither Agree Nor Disagree, 4.Agree, 5.Strongly Agree.)

20- I'm thinking the information, campaign, discount messages that I received by mobile devices are comfortable and attractive.

(1.Strongly Disagree, 2.Disagree, 3.Neither Agree Nor Disagree, 4.Agree, 5.Strongly Agree.)

21- I find shopping by mobile phone is positive.

(1.Strongly Disagree, 2.Disagree, 3.Neither Agree Nor Disagree, 4.Agree, 5.Strongly Agree.)

22- My general intention to shop via mobile phone is high.

(1.Strongly Disagree, 2.Disagree, 3.Neither Agree Nor Disagree, 4.Agree, 5.Strongly Agree.)

23- If the prices and monthly payments of products and services are better than in traditional shopping, I prefer mobile shopping.

(1.Strongly Disagree, 2.Disagree, 3.Neither Agree Nor Disagree, 4.Agree, 5.Strongly Agree.)

24- I prefer mobile shopping when my time is limited or if I wanted to gain time.

(1.Strongly Disagree, 2.Disagree, 3.Neither Agree Nor Disagree, 4.Agree, 5.Strongly Agree.)

25- I can do my operations fast and everywhere by mobile applications (mobile banking, money transfer, navigation, social networking, mobile wallet, and mobile shopping apps).

(1.Strongly Disagree, 2.Disagree, 3.Neither Agree Nor Disagree, 4.Agree, 5.Strongly Agree.)

26- I want to make mobile shopping often with greater amounts in future.

(1.Strongly Disagree, 2.Disagree, 3.Neither Agree Nor Disagree, 4.Agree, 5.Strongly Agree.)





**SOSYAL BİLİMLER ENSTİTÜSÜ**

**Sayı:**B.30.2.AYD.0.41.00.00/0 20-1934

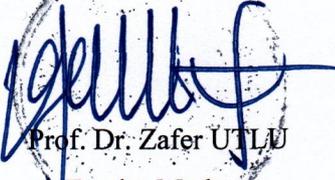
**02.11.2015**

**Konu:** ANKET

**Sayın Kemal DEMİR**

Enstitümüz Y1212.130010 numaralı İşletme Ana Bilim Dalı İşletme Yönetimi(İngilizce) Tezli Yüksek Lisans programı öğrencilerinden Kemal DEMİR'in "DETERMINING THE MAIN COMPONENTS OF MOBILE COMMERCE RELATED TO CUSTOMERS DEMOGRAPHICAL PROPERTIES" adlı tez çalışması gereği "Research Question Form" ile ilgili anketi 26.10.2015 tarih ve 2015/12 İstanbul Aydın Üniversitesi Etik Komisyon Kararı ile etik olarak uygun olduğuna karar verilmiştir.

Bilgilerinize rica ederim.

  
Prof. Dr. Zafer ULLU  
Enstitü Müdürü



## RESUME

### Personal Data

Name Surname : KEMAL DEMİR  
Birthplace & Date : ISTANBUL – 15/01/1984



### Education Status

Bachelor's Degree : ANATOLIAN UNIVERSITY – SCHOOL OF BUSINESS  
ADMINISTRATION - 2005

Language Skills : ENGLISH – KPDS (70)

### Business Background

Internship : CERTIFIED PUBLIC ACCOUNTANT INTERNSHIP  
ASISTANT REVENUE SPEACIALIST INTERNSHIP

Work Experience : ACCOUNTANT OFFICE – 3 YEARS  
MINISTRY OF FINANCE, REVENUE  
ADMINISTRATION DEPARTMENT – 4 YEARS

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