**COMPARING ATTITUDES OF
Y AND Z GENERATIONS TOWARDS
ONLINE SHOPPING USING EXTENDED
-TECHNOLOGY ACCEPTANCE MODEL**
Master's Degree Thesis

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COMPARING ATTITUDES OF Y AND Z GENERATIONS TOWARDS ONLINE SHOPPING USING EXTENDED-TECHNOLOGY ACCEPTANCE MODEL

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ÖZET

GENİŞLETİLMİŞ-TEKNOLOJİ KABUL MODELİ KAPSAMINDA Y ve Z KUŞAKLARININ ÇEVRİMİÇİ ALIŞVERİŞE YÖNELİK TUTUMLARININ KARŞILAŞTIRILMASI

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Ürün ve hizmet pazarları, son dönemde bilgi ve iletişim teknolojilerinde yaşanan hızlı ve sürekli değişimler sonucunda biçimlenmekte ve farklılaşan tüketici kitlesinin etkisiyle dönüşmektedir. Hızlı bir gelişim süreci gösteren Internet temelli teknolojiler hem piyasa koşulları hem de potansiyel tüketici kitlesi üzerinde etkili olmaktadır. Buna göre, işletmeler kârlılıklarını arttırmak, pazardaki varlıklarını korumak ve geliştirmek için yaşanan değişime ayak uydurmaya çalışmaktadır. Bu nedenle, işletmelerin ürün ve hizmet yeniliği, pazar bölümlendirme ve diğer uygun pazarlama stratejileriyle söz konusu değişimlere uyum sağlaması beklenmektedir. Bu anlamda, özellikle İnternet tabanlı alışveriş yapıları ve farklılaşmış, teknoloji meraklısı tüketici kuşaklarının iyi anlaşılması işletmelerin pazar koşullarında sürdürülebilir bir başarı elde etmesi için gereklidir. Bu çalışmanın amacı, Y ve Z kuşaklarının online alışverişe yönelik sahip oldukları tutumlar anlamında g-TKM'nin alt boyutları kapsamında farklılık gösterip göstermediğini araştırmaktır. Çalışmanın katılımcılarını Anadolu Üniversitesi ve Eskişehir Teknik Üniversitesi'nde eğitim gören 1030 öğrenci oluşturmaktadır. Toplam örneklem içerisinden 549 öğrenci Z kuşağını, 481 öğrenci Y kuşağını temsil etmektedir. Y ve Z kuşaklarının online alışverişe yönelik tutumlarının g-TKM'nin alt boyutları kapsamında karşılaştırmak için bağımsız örneklemler t-testi ve regresyon analizi yapılmıştır. Genel sonuçlara göre, Y ve Z kuşaklarının online alışverişe yönelik tutumlarında g-TKM'nin alt boyutları kapsamında farklılık olmadığı; ancak alışveriş tercihlerinde göz önünde bulundurdukları faktörlerin farklı olduğu görülmüştür.

Anahtar Sözcükler: Kuşaklar, Online Alışveriş, Genişletilmiş-Teknoloji Kabul Modeli.

ABSTRACT

ATTITUDES OF GENERATIONS Y AND Z TOWARDS ONLINE SHOPPING
WITHIN THE SCOPE OF EXTENDED-TECHNOLOGY ACCEPTANCE MODEL
(e-TAM)

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Marketing environments of goods and services in the recent decades have been formed as a result of the fast and constant changes in technology and have been transformed with the impact of diversified consumer profile. Rapidly developing Internet-based technologies affect both marketing conditions and potential consumer masses. Accordingly, business organizations struggle to keep up with changes intending to increase profitability, maintain and improve their existence in the marketing environments. Therefore, business organizations are supposed to be ready for such changes with their strategies including innovation in goods and services, market segmentation, and other proper marketing strategies. Especially good understanding of Internet-based shopping patterns and differentiated, tech-savvy generations of consumer is necessary for business organizations in having sustainable success in the marketing terms. This study aims to explore whether the attitudes of generations Y and Z towards online shopping differ or not regarding sub-dimensions of e-TAM. Participants of this study includes 1030 students studying at Anadolu University and Eskisehir Technical University. 549 students belong to generation Z, while 481 students belong to generation Y. To compare attitudes of generations Y and Z towards online shopping, independent sample t-test and regression analysis are performed. Overall results show that there is not a difference in attitudes of generations Y and Z towards online shopping, but, the factors, which affect online shopping preferences of generations Y and Z, differ.

Keywords: Generations, Online shopping, Extended-Technology Acceptance Model.

ACKNOWLEDGEMENT

STATEMENT OF COMPLIANCE WITH ETHICAL PRINCIPLES AND RULES

I hereby truthfully declare that this thesis is an original work prepared by me; that I have behaved in accordance with the scientific ethical principles and rules throughout the stages of preparation, data collection, analysis and presentation of my work; that I have cited the sources of all the data and information that could be obtained within the scope of this study, and included these sources in the references section; and that this study has been scanned for plagiarism with "scientific plagiarism detection program" used by Anadolu University, and that "it does not have any plagiarism" whatsoever. I also declare that, if a case contrary to my declaration is detected in my work at any time, I hereby express my consent to all the ethical and legal consequences that are involved.

Kenan ATEŞGÖZ

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ABBREVIATIONS

ARPAnet   : American Department Of Defense-Originated Research And Defense Network

ATM   : Automated Teller Machine

B   : Regression Coefficients

B2C   : Business-To-Customer

df   : Degrees of Freedom

e-commerce   : Electronic Commerce

e-TAM   : Extended-Technology Acceptance Model

F_{ch} : F Change

GSM   : Global System For Mobile Communications

NSFNET   : The National Science Foundation Network

PC   : Personal Computer

TAM   : Technology Acceptance Model

TPB   : Theory of Planned Behavior

TRA   : Theory of Reasoned Action

WWI   : World War I

WWII   World War II

WWW   : World Wide Web

β   : The Standardized Regression Coefficients

1. INTRODUCTION

"Trust the young people; trust this generation's innovation. They're making things, changing innovation every day. And all the consumers are the same: they want new things, they want cheap things, they want good things, and they want unique things. If we can create these kind of things for consumers, they will come." (Jack Ma)

Do businesses actually approach to generations in the right way and determine the accurate segmentation regarding generations who represent the prominent potential masses in the innovation-driven business world? This question matters since in such a technology-oriented business world that gave birth to e-commerce and online shopping practices, probable online shopping patterns of the consumers are difficult to be sure regarding which should lead marketing professionals to analysis of generations according to requirements of the marketing conditions. All these concerns will develop a marketing perspective for business organizations that are willing to survive in such a competitive environment.

Different epochs are tended to have distinctively dominant values which form the way of people consider or behave. In this regard, generations have been pointed out among the most important representatives that reflect such era-oriented values (Altuntuğ, 2012: 203). Accordingly, increasing number of scholars become more concerned with generational distinctions supposing that generations display varieties in terms of their values, purposes and expectations (Cennamo and Gardner, 2008: 891).

Considering the fact that some classifications have been made regarding consumers (Nazari and Hafezi, 2013: 21), forthcoming tendencies or approaches towards marketing and online shopping practices may be revealed through studying and understanding generational characteristics. For this reason, in the scope of this study, general characteristics of generations Y and Z have been elicited as well as their attitudes towards online shopping since it has been believed that generations Y and Z, as the youngest and potential economic forces, have been quite significant to advertisers and marketers. In accordance with that, possible attitudinal differences between generations Y and Z have been examined within the sample of university students who are regarded as part of these generations. Along with the ultimate purpose of this study, we might reveal and provide quite important implications for future-based strategies of

businesses regarding technology acceptance and online shopping attitudes of most dynamic, potential and youngest customer profile.

1.1. Problem Statement

Information-oriented sectors came into prominence, together with the Internet-related technological advancements, as a field where production and accumulation of information, sustainability of education, well qualified people became leading factors as well as communication technologies, e-business so on and so forth. All those developments created the infrastructure of the today's information society, which caused new behavioral manners as against centralized and standardized structures (Aktan and Vural, 2016:3).

Besides, today, the growing power of the Internet and developments in information and communication technologies has affected the role of people in social networks. For example, people come together in virtual environments. In this regard, social life practices have been deeply affected which led people to develop more intense relations with their social environments (Zerdick et al, 2005:213).

Such Internet-oriented information technologies changed business world as well in a manner that can be named as digital or information economy. In this new era, consumers became wiser, more demanding and selective (Svatosova and Pardubice, 2012:1). Especially technologies including networks, social media, digital technologies and online platforms changed the things that people do for socializing, having fun, getting information, carrying out public-related works as well as doing business. In this manner, a new structure of decentralized, niche-based, flexible economy came out named as "media economy". Differing from classical manners of economy, media economy enabled customization, abundance, diversity terminating concentration and dominance of the monopolies so that new entrepreneurs easily get involved into business world (Freedman, 2012: 69). In this sense, advancements in Internet and network technologies provided dynamism and momentum for e-commerce activities, which led companies to change the route towards business-to-customer (B2C) e-commerce (Chiu et al, 2009: 347). This model changed the traditional shopping patterns as it has been never seen before (Chen and Tan, 2004:74). Not only business organizations but also consumers became one of the representatives benefiting from Internet technologies as a part of their e-commerce activities (Park et al, 2014: 6). In

this sense, Internet came out as an alternative shopping tool that enabled more flexible forms of shopping activities in the global scale, in Turkey as well, especially after people embraced it as a new medium of interactive communication processes (Cengiz and Şekerkaya, 2010: 33-34).

In other words, via online Web sites of the business organizations, consumers experienced more interactive way of shopping being able to reach much more variety of contents in a virtual world (Lu and Lin, 2002: 1-2). Thus, people obtained more personal channels for shopping activities (Eastlick et al, 2006: 877). In short, in such an atmosphere where Internet technologies are easily accessible via commonly used computer, tablet and smart phones, online shopping became an inevitable formation for both business organizations and consumers (İzgi and Şahin, 2013: 11).

On the other hand, in societies, it is remarkable that values have been exposed to a constant changing process in which people tend to change their values in times because of the factors they encounter with. Such as age, education, income, religion and other factors may be the reason for a change of values (Morsümbül, 2014: 149). In this change, it is obviously observed that fast changing atmosphere of technologies played a big role causing considerable impacts on masses so that huge technological gap have been realized among people. They have been facing with those differences even in daily life practices. Those differences have been recognized especially among people representing different generations, in terms of proficiency and familiarity they have for technology. Even in the daily life, people feel such a diversity within the scope of technology use (Bilgiç et al, 2011: 2).

In this regard, people have been classified as different generations using technologies with various backgrounds and competences. In this sense, technology draws attention one of the most important factors that affect life-styles of the masses. People, representing different generations, tend to use technologies within the scope of different personal purposes and abilities (Kuyucu, 2017: 846). For example, young generations already engaged in new technologies, which are commonly used tools for them in daily life experiences. What they mostly do with these technologies are messaging, sharing, buying, selling, searching, programming, chatting, surfing, reporting, analyzing, downloading, creating new contents and so on (Prensky, 2005: 2).

According to some specific studies, people have been categorized into different generations as *silents* or *traditionals*, *baby boomers*, *X, Y, M* or *Z* (Ayhun, 2013: 96;

Kuyucu, 2017: 851; Yalçın et al, 2013: 150). To focus on the two prominent generations of the recent decades in the scope of the study, generation Y, named also as digital generation or generation of future and Internet, born into technology having proficiency in the usage of Internet, computer and cellphones. This is why they are quite familiar with technologies and may easily reach information (Kalaycı and Kokcel, 2017: 84). Especially Web 2.0 technologies broke a new ground in the lifestyle of generation Y so that Internet technologies became an indispensable factor for them in the daily life practices. According to some data, more than ninety percent of this generation benefit from cellphone and computer. Likewise, most of them have at least three technological devices or even more (Kuyucu, 2017: 846, 861).

As for the members of the generation Z, Technology of Global System for Mobile Communications (GSM) is one of the prominent symbols for them. This is why, spending time with portable and mobile technological devices is predominantly known fact about this generation (Ayhun, 2013:102). Smartphones, tablet computers, i-Pod or similar devices are regarded as one part of body of these youngsters (Yalçın et al, 2013: 158). Generation Z mostly prefers media tools for contacting people rather than face-to-face communication manners. They almost do not have any idea of world without Internet, computer or mobile technologies (Rothman, 2016).

Likewise, it is predicted that such disparities of technology use also emerges in online shopping activities of different generations. Considering different technology adequateness of different generations and requirement of active technology usage for online shopping activities, it is believed that different generations perform different online shopping activities with regard to their own backgrounds of technology usage. Thus, in the scope of the study, generations Y and Z will be focal point since these generations consist of people who witness current periods of Internet and telecommunication technologies and digitalization process. The reason why generation Y has been chosen is that they also experienced traditional telecommunication technologies which makes them privileged. However, generation Z is also important for the study since people belong to this generation know nothing out of digital world which makes them more experienced in digital technologies. Comparison of technology usage and attitudes of these two generations towards online shopping activities is important for the purpose and limitations of the study.

Among different theories focusing on the explanation of user adoption and acceptance of new technologies, Technology Acceptance Model (TAM) seems to be a well-accepted theory (Agarwal and Prasad, 1999: 362). Davis's model (TAM) aimed to explain acceptance of information systems and computer usage behavior. (Davis et al, 1989: 983, 985). However, two fundamental components of TAM, *perceived ease of use* and *perceived usefulness*, had been extended by some researchers who worked in the subject of online shopping since they believed that TAM would be insufficient in explaining the online shopping practices without extension (Yılmaz and Tümtürk, 2015: 360). Hence, Extended-Technology Acceptance Model (e-TAM) emerged as a commonly used model in analyzing online shopping behaviors of people. e-TAM had been formed along with the new components added by different studies based on e-commerce (Hernandez et al, 2009: 1233-1234).

Because of all these reasons and important points mentioned, this study will seek answer for the main research question: "Do attitudes of generations Y and Z towards online shopping differ within the scope of Extended-Technology Acceptance Model (e-TAM) ?"

1.2. Purpose of the Study and Research Hypotheses

The purpose of this study is to reveal whether the attitudes of generations Y and Z towards online shopping differ in the light of extended-Technology Acceptance Model (e-TAM). To this end, following questions will be answered:

a) Is there a difference between generation Y and generation Z regarding their attitudes towards online shopping with respect to sub-dimensions of e-TAM (e.g., usefulness, ease of use, compatibility, privacy, and security)?

b) Do the best predictor variables (such as usefulness, ease of use, compatibility, privacy, and security) differ individually regarding online shopping attitudes of generations Y and Z?

The following hypotheses were developed based on the literature review and research purposes to answer abovementioned questions:

H1. Attitudes of generation Z towards online shopping are statistically different than generation Y in terms of **perceived usefulness**.

H2. Attitudes of generation Z towards online shopping are statistically different than generation Y in terms of **perceived ease of use**.

H3. Attitudes of generation Z towards online shopping are statistically different than generation Y in terms of **compatibility**.

H4. Attitudes of generation Z towards online shopping are statistically different than generation Y in terms of **privacy**.

H5. Attitudes of generation Z towards online shopping are statistically different than generation Y in terms of **security**.

H6. The **best predictor variables** for online shopping attitudes of generation Y and Z differs.

1.3. Importance of the Study

In the literature, there have been many studies related with TAM and e-TAM in different disciplines (See Appendix A1, A2 and A3). One of the outstanding field in the business is the online shopping. Many researchers have tried to explore the attitudes, intentions or behaviors, and other shopping patterns of consumers towards online shopping in the light of TAM or e-TAM. On the other hand, many studies have been conducted to reveal the characteristics of different generations regarding shopping activities. However, in the literature there are limited studies that explore the attitudes of generations towards online shopping (Makhitha, 2014; Krbova, 2016). Almost any study, specifically comparing of generations Y and Z towards online shopping, have not been noticed. In this study, the differences between generations Y and Z's attitudes towards online shopping in the scope of e-TAM will be inspected. Therefore, this study is believed to contribute to literature significantly.

1.4. Assumptions

In the study, a few assumptions have been made that are as follows:

1. It is assumed that all participants answered the scale seriously.
2. It is assumed that all participants have provided accurate information about their age.
3. It is assumed that attitudes were best predictor of online shopping behavior.

1.5. Limitations

1. The population of the study isincludes only Anadolu University and Eskişehir Technical University students.
2. Participants of the study are limited to the university and college students who are either in generation Y or Z.
3. The age of students belong to different generations is close.
4. e-TAM scale dimensions are limited to usefulness, ease of use, compatibility, privacy, and security for online shopping.
5. The scale is limited to the scale items prepared by Vijayasarathy (2004).

1.6. Definitions

Within the scope of online shopping, the definitions of attitude, usefulness, ease of use, compatibility, privacy and security are given below (Vijayasarathy, 2003: 750-751):

Attitude: The degree to which consumers think that online shopping is good and enjoy it.

Usefulness: The degree to which consumers consider that online shopping would enable them to experience a faster shopping process comparing different products and services having helpful information about them.

Ease of use: The degree to which consumers think that online shopping process would be effortless.

Compatibility: The degree to which consumers consider that online shopping patterns correspond well to their preferences, demands and lifestyles.

Privacy: The degree to which consumers think that online shopping would not jeopardize their privacy.

Security: The degree to which consumers think that online payment is secure enough.

CHAPTER TWO

2. DIRECTION OF MARKETING ENVIRONMENTS AND RETAILING SECTOR

2.1 Recent Changes in Marketing World

It is a well-accepted fact that every organization, either for-profit or non-profit, implements marketing activities. In quite previous notions regarding marketing, term was used in the meaning of *product pushing, which* later turned into sense of *customer satisfaction engineering*. Term of marketing has been briefly defined as "a pervasive societal activity that goes considerably beyond the selling of toothpaste, soap, and steel." It has also been described as "finding and stimulating buyers for the firm's output." Accordingly, this phenomenon encompasses communication, distribution, improvement and modification of products, price-setting activities of products, chasing the altering demands of the consumers, other financial, production, purchasing or staff-based strategies. As for business organizations, one of the most prominent goals of them is to please suppliers, employees and potential consumers who show interest in their brands and outcomes (Kotler and Levy, 1969: 10-12).

Recently, emerging marketing environments pass through a transformation period in which business organizations struggle to survive as being hypercompetitive and defining their brand positioning well and determining target segments (Hung et al., 2007: 836). Moreover, convergence among corporations, technological innovation, and similar restructuring activities take place in business organizations. Besides, one of the most influential difficulties for the business organizations among many is variation of generations in the market conditions. For this reason, this is a hardness, which occupies the minds of marketing professionals pretty much in terms of loyalty of the potential customers, innovation-related moves, and productivity run (Bowes, 2012:3). Considering the fact that one of the biggest difficulties for business organizations is facing with heterogeneous masses or their varying demands, in this regard, segmentation of the marketing activities matter pretty much for the business organizations in reaching targeted potential customers and in understanding their behaviors as consumers (Steenkamp and Hofstede, 2002: 185). Within this context, marketing strategies of the business organizations are quite significant in terms of the great impact on the marketing performance (Zou and Çavuşgil, 2002: 40).

It is highly demanded by marketers and business organizations to obtain reliable data regarding consumer behavior patterns, which had been named as "consumer socialization" or "consumer development". These terminologies have been used for making prediction regarding economic activities and behaviors of both children and parents in certain communities to determine the next move in market conditions (McNeal and Yeh, 1997, 45).

Better understanding of the consumer behavior by marketers and business organizations is regarded as one of the most significant ways to succeed in the competitive market conditions. In this regard, observation of "consumer development" plays a critical role in predicting consumer behavior. Considering the claims that consumer behaviors are mostly formed in childhood period, marketing strategies focusing on children seems as the best way to follow the consumer development that began since the childhood and last till adulthood of the person. Consumer behavior patterns of the children have serious impacts on and determine the consumption preferences and behaviors of them even in the adulthood period. In this regard, what marketers are logically supposed to do is designating their strategies to grow their potential customers since birth till death (McNeal, 2007: 22).

2.1.1. Ever-increasing role of young people and their families in emerging markets

As for academic field, consumption issue of children as a research subject is not new which date back to decades ago. By the time 1980's and 1990's arrived, consumption culture of the children gained acceleration not only in academic environments but also in the media agenda (Cook, 2012: 1).

Given the fact that children do not have much difficulty in getting used to post-modern world and its volatile and disposable atmosphere, it sounds quite normal for them to easily adapt to consumption society using up games, fast food, media contents, toys and so on (Beastall, 2006: 99). More importantly, children begin to keep brands in their minds at much earlier ages than expected. Simply put, they notice specific brand names by the ages of three to four. This means that brands have always been crucial stimulus for children (Achenreiner and John, 2003: 206). Considering this done, consumption impulse has been cultivated in children's attitudes and behaviors as soon as they obtain the ability of conceiving.

Both marketers and parents play important roles in the formation of consumer behavior patterns of children. As for parents, who develop behavior of the children in general, they are the first factor in determining consumption behaviors of children since they grow them. Before children begin to socialize themselves, meet professional or social life practices, they are educated by their families first. Likewise, they initially meet or become familiar with the products or services their parents buy. This means that families act as pioneers in the formation of shopping patterns of their children (McNeal, 2007: 319-348).

In today's modern family structure, both parents are supposed to work which unable them to allocate enough time for the children. Hence, children are compensated by families with more free time, and money or much more permission to spend in digital media organs. In this regard, children have relatively more right to speak regarding family issues using that authority gap (Bassiouni and Hackley, 2014: 120).

In other words, role of children in family arrangement become relatively more dominant (Foxman et al., 1989: 482; Brown and Mann, 1990: 35-36). In the families, as one of the most significant components of consumption and consumer behavior phenomenon (Lee and Collins, 2000: 1181; Thomson et al., 2007: 182), children have been given more active roles in decision making processes and emerging changes so that they have been remarkably focused on by marketers and academic environments (Foxman et al., 1989: 482; Lee and Beatty, 2002: 24) since that dominance, over family, provides children some facilities to be more determinative in purchasing decision-making processes as well (Tinson and Nancarrow, 2005: 3). In this regard, marketers, considering children as potential consumers along with the privileges they obtain, expose them to more commercial messages via digital media devices (Bassiouni and Hackley, 2014: 120).

Besides, curiosity regarding the potential impact of youngsters in family purchasing decision-making and related processes have increased to great extent. In this regard, some studies come into prominence in the previous researches emphasizing family structures and roles of the children in purchasing decision-making involving relative impact of parents and teenage children on the family purchase decisions (Belch et al., 1985: 173). Accordingly, researches dating back to end of 1980's, shows that youths have serious impact on their family purchasing decisions encompassing shopping of magazine, traveling, videocassette recorders, grocery equipment (Foxman

et al., 1989: 482). On the other hand, subjects including the role and the impact that children have over family holiday decision making (Dunne, 1999: 181); relative impact of children on family purchase decisions (Kim and Lee, 1997: 307); influence of children in family purchase decisions (Lee and Collins, 2000: 1194); role and influence of children within family purchasing decision processes (Thomson et al., 2007: 182) have been investigated.

The truth is that "youth market" is not something that becomes important for marketers in only in the recent decades. However, young generations have always been crucial for the marketers with their remarkable potential. In accordance with that, marketers turned towards college students it is because they believed that students have a great population having serious impact on the changing trends, purchase preferences of parents and point of view of almost whole community regarding new goods. Also, students had been considered to be tended for having loyalty on brands even after they graduate. What is more, college students have been regarded more attractive to marketers nowadays since their spending power and population rates are higher even before previous times (Wolburg and Pokrywczynski, 2001: 33).

After all, children are important for marketers because of three crucial reasons. First of all, they have certain needs and certain amount of budget that shape their own economic activities. On the other hand, they strongly affect and determine economic preferences and spending of their parents. Lastly, future market spending and customer profile have been formed by today's children (McNeal and Yeh, 1997: 45).

In the Internet-based media environments, where information and commercials are not clearly distinguishable, children have been exposed to commercial ads even in very early ages. Along with the related or unrelated contents, as timely or untimely, children are targeted by marketers through Internet media and Websites. Nonetheless, children have been regarded as mostly unguarded masses against those commercially mixed contents which enable persuasion of parents by their children regarding purchasing decisions (Greenfield, 2004: 753-754).

2.1.2. Formation of e-marketing patterns in the light of information technologies

A strong and interacting relationship have been pointed out between information and technology. To clear up, ownership of information leads societies to have power in science and technology making. As a result, those societies dominate industries and

economic operations as well (Babaoğul and Bener, 2010: 103). Besides, market economies have been well-known with the tended characteristics towards constant technological change which mainly emerge as a result of high competition between business organizations (Ropke, 2001: 405).

In competitive market conditions it is quite crucial to be innovative to take part in electronic marketing platforms which based on information technologies. The change, backed by computer and information technologies, is believed to influence all marketing and disseminating patterns causing a transformation period from *single-source electronic sales channels*, which refrain consumers from reaching different suppliers so that they do not have the chance of benchmarking among the different goods and prices, towards electronic markets. Therefore, electronic markets emerged as a needed business platform where consumers may meet different suppliers to get the best offer, while it has been an obligation for businesses organizations to be a part of this new market environment if they want to survive (Malone et al., 1989: 166-167).

Information systems have been utilized in commercial and organizational environments to the great extents providing connection among customers, businesses and vendors (Bakos, 1991: 296). In this sense, information systems, used in organizations and businesses to execute such missions, are named as *Inter-organizational Information Sharing System* (IS). Keeping business parties linked with each other, IS technologies enabled information change in business activities of organizations. More interestingly, IS technologies had been well accepted in different business industries such as; finance, tourism, insurance, grocery, manufacturing, and wholesaling of some others. Organizations head towards IS technologies, mostly because of economic reasons such as; possibility of decrease in costs, boosting in efficient production, and other similar marketing tactics (Barret and Konsynkski, 1982: 93-94). More specifically, Bakos states that IS technologies form electronic market place or electronic market system. Accordingly, this system may enable both consumers and providers to minimize their costs so that consumers may get information regarding product details or providers may have the chance to communicate with consumers over products and prices in a more cost-effective way (Bakos, 1991: 296-297).

In recent decades, business organizations compete in a marketing environment where both virtual and physical conditions play roles. However, especially virtually-surrounded market formations come into prominence as major player which has been

quite influential in commercial value creation. Thus, virtual conditions, representing information-driven technologies and infrastructures, act as remarkable leverage in electronic commerce world, which is terminologically named as *marketspace*. Accordingly, *marketspace* corresponds to commercial markets where information technologies have dominance, while *marketplace* points out physically-designed commercial marketing environments. Considering the reality that business organizations generally intend to create value in their commercial activities, three important phases have been stated as new ways of value creation processes represented by information-based technologies. In this context, business organizations benefit from *visibility*, *mirroring capability* and *new customer relationship* channels. Thus, information technologies enable them to control physical operations in a relatively better manner by means of visibility. On the other hand, they have been facilitated to turn towards virtual operations instead of physical ones along with mirroring capability. Lastly, information technologies have been utilized by business organizations in terms of forming new customer relationships (Rayport and Sviokla, 1995: 75-78).

2.1.3. Advent of Internet and Web as a part of information technologies

The Internet has been defined as a network, which encompasses computer networks. Internet technologies have been most innovative and forceful device emerged to reach, regulate and share the information (Ainscough and Luckett, 1996: 36). First advent of the Internet dates back to period between 1960's (Brown, 2000: 12)-1970's by which ARPAnet, an *American Department of Defense-Originated Research and Defense Network* aiming improved exchange of information and communication facilities (Fox, 1995: 34). This technology, considered as great invention as electricity in terms of its importance and effect in the flow of history, had been firstly used along with the military and defense purposes. Afterwards, it was set to be utilized in scientific researches including Europe (Brown, 2000: 12). Especially along with the efforts of *The National Science Foundation* ARPAnet transformed into *NSFNET* so that Internet technologies reached in research centers and universities. Thus, today's well-known Internet came out (Fox, 1995: 34).

However, Internet had been associated only with some layers and groups of the societies until a certain period. Accordingly, it had been utilized commonly in academic and scientific environments since Internet, as a system, was found hard to use and find

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out. Hence, individual use of Internet was not that extensive till the appearance of Web technologies (Ainscough and Luckett, 1996: 36). In 1996, about 30 million people, who were able to use computer actively, seized an opportunity to access World Wide Web, and approximately 10 million people met with *Prodigy*, *America Online*, and *CompuServe* as commercial online services (Hagel and Armstrong, 1997: 4). To clarify a possible confusion between concepts of Internet and Web, an explanation and a certain differentiation are needed. In this regard, Web (WWW) and Internet are not the same but Web is comprised by Internet technologies. In other words, Web is the most advanced and progressive part of Internet (Fox, 1995: 34).

2.1.4. Changes in marketing communication in the scope of Internet and Web technologies

Daily life activities, on which technological changes have considerable impact, are believed to be effective on the many environmental issues (Ropke, 2001: 403-404). As for the consumer's point of view, it is quite necessary and important to elicit how and in which ways the new technologies influence people in their ordinary life practices. In other words, investigation of customers' technology interaction in the daily basis means a lot (Babaoğul and Bener, 2010: 103).

International world of commerce has been on the brink of a great transformation because of the emergence of Internet technologies. In this respect, not only business organizations but also consumers have been willingly ready to benefit from these technologies. Thus, as for business organizations, they have been enabled to serve in marketing environments in a more economical way while consumers obtain the facility of reaching pretty many options with regard to information, goods and services (Quelch and Klein, 1996: 60).

Fast growing rhythm of Internet technologies have been realized as a remarkable chance in terms of attending global markets along with innovative methods or as a new perspective because of the fact that Internet, on its own, has been accepted as a new market. Relatively, Web forms of Internet (WWW) have been regarded much in demand as a trading media tool it is because Web enables share of information and resources in the global scale (Hoffman, et. al., 1995:2).

As such, Web services have been important phenomenon for marketing world in terms of various reasons that triggered change. In this sense, one of the most crucial

changes that Internet technologies caused in marketing environments is the transformation of communication methods used to reach consumers. Web sites of businesses, firms or other commercial organizations are visited by consumers through Web addresses assigned or hyperlinks belongs to these organizations. Thus, consumers are enabled to find out profile details, bids, product selections presented by commercial organizations. In this regard, business organizations altered advertising and communication media preferences from conventional platforms towards computer-based, interactive ones. Hence, *decentralized* and *many to many* ways of marketing communication have been embraced. Furthermore, compared to traditional marketing channels, Internet-driven formations have been noticed as less costly and more economic in terms of advertising, marketing and dispatching of goods and services. In accordance with that, trading volume between business organizations and consumers changes in a positive direction since receiving and delivery of goods and services become easier thanks to the Web technologies (Hoffman and Novak, 1996: 50-51).

In today's personally-dominated or consumer-sided service sector, *service encounter*, which represent interaction process as face to face or by means of phone, mail or Internet technologies between consumers and business organizations or service suppliers (Bitner et al., 2000: 139), plays an important role with regard to *satisfaction* (Surprenant and Solomon, 1987: 87; Bitner et al., 1990: 72); *loyalty* (Gremler and Brown, 1999: 273); *purchase intention* and *word-of-mouth communication* (Bitner, 1990: 72, 80) of consumers and development of relationship between service providers and consumers (Czepiel, 1990: 18; Bolton, 1998: 46). Either customer services or free value-added services or products for sale may be regarded in the category of service encounters (Bitner et al., 2000: 140).

Service encounters are pointed out as quite effective on the perception of consumers with regard to general service quality and reputation of the service-based business organizations. Hence, proper and efficient organization of the service encounters is quite important for business organizations and their commercial goals (Lewis and Entwistle, 1990: 43). Not only business organizations but also consumers enjoy technological developments, which provide substantial innovation regarding encountering service-based relationships, despite the fact that especially consumers have some security and privacy concerns in such technology-driven activities. Besides, customization of service offerings has been another reason of why business

organizations head towards new technologies, which enabled personalized service forms (Bitner et al., 2000: 139-142). More specifically, business organizations are inclined to acquire information technologies due to competitive conditions and requirements of service sector. Thus, they create their own databases of information regarding consumers' personal preferences (Bettencourt and Gwinner, 1996: 17).Accordingly, Web technologies serve well to purposes of the marketers enabling them to communicate and interact with the customers, to collect data regarding their purchasing preferences, providing incentives such as; relevant information, promotions, ads and so on by means of customization and personalization strategies (Ansari and Mela, 2003: 2). Within this context, business organizations manage advertising and marketing communication activities as well as receiving feedbacks regarding customer preferences through their own Web sites which reduced interaction-based costs to the greatest possible extent (Rayport and Sviokla, 1995: 80).

2.1.5. Customization strategies under the influence of e-marketing patterns

Emergence of e-commerce has altered the way of relationship between suppliers and consumers. Accordingly, consumers became the more powerful side in this affiliation having remarkable facilities, which enabled them to reach more alternative goods with lower costs and wider-ranging products with competitive prices (Elofson and Robinson, 1998: 57).

In modern times, consumers prefer services that are generated in flexible conditions, which will be compatible with their personal needs and expectations. The adaptability of serving process to urgent and specific demands of consumers is a great advantage to please them, which is called as "*customization*" in the literature. This concept has been given other names as well such as; "*adaptation*" (Bitner et al., 2000: 142); "*personalization*" (Surprenant and Solomon, 1987: 86; Bettencourt and Gwinner, 1996: 11); "*discretion*" (Kelley, 1993: 104).

The ability of survival for as long times as possible matters for business organizations. In this context, surviving in competitive market environments requires to have proficiency in service sector as well (Bitner et al., 1994: 95). Thus, managerial, sectoral, employment and other business strategies of business organizations have been formed along with the new requirements of market conditions (Lewis and Entwistle, 1990: 41). In accordance with the necessities of service sector, business organizations

aim to interact with consumers along with flawless working methods. Otherwise, they would probably be exposed to extra costs including having negative impression, losing customer, and compensations for various other costs (Bitner et al., 1994: 95). Considering the reality that long-termed existence of service businesses has been seriously bound up with having good relations with consumers, business organizations turn marketing strategies towards customization (Thompson, 1989: 58). Hence, managers aim to operate service delivery systems prioritizing both high efficiency and customization strategies. They even believe that good service is possible only with personal service approaches or corresponds to a more customized way of marketing (Surprenant and Solomon, 1987: 86). Furthermore, general consumer profile has been changed towards more informed and meticulous buyers along with the developments in service sector. Thus, consumers became more demanding to be noticed about details such as competition-based facilities or discounts, rise and fall in prices, credibility and quality of products and services. In other words, they transform into wiser individuals as they are capable of determination what to purchase or what not to purchase (Lewis and Entwistle, 1990: 41).

Business organizations have been enabled to customize their products and services through telecommunication, computer technologies, robots, flexible factories, and other advanced technologies (Kotler, 1989: 13). Web technology is the trending means of customization utilized in recent times. In order to get higher profit rates, greater amount of cash, more consumer gratification, attention and loyalty, marketers regulate their strategies towards customized and individualized approaches. In this regard, they customize not only services but also communication methods used (Ansari and Mela, 2003: 1).

2.2. Internet Technologies and Transformation of Retailing Sector

In accordance with the developments emerged in Internet technologies, people are getting more inclined to adopt and utilize it. Considering the requirements of attaining any sort of information, Internet has become an inevitable source. In this regard, increasing usage of Internet indicates the same impact over the shopping activities of people. For this reason, Internet technologies enabled online shopping practices as one the mostly-preferred activities by consumers. Besides, age came into prominence as one of the leading factors in the admission of online shopping practices. In this respect, age-

based segmentation of people may contribute to determine the consumer behavior towards online shopping activities. In other words, generation-based segmentation of people might serve to the purpose of revealing consumer behavior patterns of different sub-groups of the societies (Lissitsa and Kol, 2016: 304-305).

2.2.1. Some early predictions regarding prospective outlook of retailing sector

McNair and May mentioned the likelihood of "*telecommunication shopping*" or "*teleshopping*" regarding the future of retailing. According to this, consumers would be enabled to buy nearly all of their daily simple needs utilizing television computer systems by the advent of 21th century. In this system, consumers would be able to see the product details such as; price, brand, variety, and so on before deciding to purchase (McNair and May, 1978: 81). In accordance with that foresight, it had been also estimated that non-store sales or purchases would be quite popular and well-accepted by 1990's so that consumers would not have to step in a retailing stores for shopping (Lumpkin and Hawes, 1985: 140).

Another inspiring perspective, offered during 20th century, belonged to Isaac Asimov who contended an electronic store would emerge by 2025 and facilitated by computer technologies. According to that vision, consumers start the shopping activities by calling or transmitting shopping lists to store by means of their own computers. Afterwards, orders would be automatically packed up and loaded on the vehicles for delivering to addresses. Besides, one of the most assertive foresight brought forward by Schneiderman claiming that people would be able to purchase considerable amount of their necessary commodities while, for example, they are at home. In this regard, they would not need to go stores personally. The idea, that e-shopping activities would suppress conventional retailing patterns, had been taken forward by some other scholars as well (Peterson et al., 1997: 329-330).

As for another argument, retailing sector was to be vanished. Accordingly, developments emerging in telecommunication technologies would be one of the main reasons in that disappearance. In this sense, transmission of orders and transfer payments from home, alternative delivery mechanisms of products instead of buyer's receive in person were regarded as possible by means of telecommunication technologies. In that notion, consumers would be enabled to shop great diversity of products and services decided by means of digital catalogues shown in videos.

Meanwhile, charge of the products and services would be paid concurrently through bank accounts of two parties. Additionally, price for delivery would depend on the time conditions and amount of ordering. Consumers would prefer purchasing in electronic retailing platforms in which they believe that receiving richer variety of products in a quite shorter amount of time is possible (Rosenberg and Hirschman, 1980: 103-105).

2.2.2. Historical progress of retailing sector

The transformation of retailing markets began in 1800s along with rotations from small shops towards department stores, which provided greater options of products, and cheaper prices. In this manner, consumers enjoyed greater scale of service spending lesser amount of time, which met their needs in the most proper way (McNair and May, 1978: 82).

Department stores showed up in three types including *discount department stores*, *conventional department stores*, and *national chains*. However, department stores lost power after a period of time in which range of negativities emerged such as ineffective financial decisions made by owners, lack of adaptability to changes in consumer market, inefficient management, delay of transition to computer technologies. In this sense, fast growth rates in super stores, self-services, life-style retailing and specialty stores caused serious falls in the shares of department stores in different countries following U.S including Japan, England, France, Germany, Australia, and Canada. In brief, stores based on mass marketing mentality fell into disfavor while the segmentation-driven marketing had been on the rise (Rachman and Fabes, 1992: 40-44).

Afterwards, consumers had been introduced with *chain stores*, which reached quite large shares in the market. Those stores had advantages such as; wholesale, variously categorized goods addressing every demand of consumers and so on. On the other side, *the mail order business* emerged as another considerable change in retailing sector. Accordingly, developments of railways and postal services facilitated that retailing mechanism. As a result, all those changes seen in retailing sector caused larger-scaled stores to be appeared removing individual sellers or small shops from the market environments (McNair and May, 1978: 83).

However, remarkable changes in general view of retailing sector (especially in food sector) accelerated along with the emergence of *supermarkets* by 1930s. Moreover, formations named as *discount houses* caused another crucial impact in the markets

receiving some significant shares of retailers' markets by 1950s. As for 1970s, idea of *"distribution centers"* uncovered as a new possible shopping system against conventional retailing methods. Accordingly, this vision of distribution centers, which based on distribution and provision of products to consumers as the similar model of today's e-shopping mechanisms, needed to be built on trustworthy recording of information, rapid service and correct communication methods with consumers. Thus, variety of products would be distributed to consumers as being based on their shopping practices through computer-type consoles that are electronically connected to the center of distribution (Doody and Davidson, 1967:1-7).

Besides, late 1960s and early terms of 1970s had been registered as remarkable years in which marketing activities significantly changed. Accordingly, innovation strategies conducted in retailing stores and emergence of extensive range of products have caused to that alteration (Lumpkin and Hawes, 1985: 139). In that period, *in-home shopping* methods such as mail, phone and catalog purchasing practices accelerated (Peters and Ford, 1972, 62). *Catalog Buying* (Reynolds, 1974: 47); or *Catalog Sales* (Lumpkin and Hawes, 1985: 139); *Mail-Ordering* (Spence et. al., 1970: 364); and *Telephone Shopping* (Cox and Rich, 1964: 32) provided remarkable benefits for consumers regarding their purchasing practices.

As for *Catalog Sales*, utilization of that method was trending upward by 1970s. However, along with the technological improvements, catalog sales had been combined with different technologies. In this sense, catalog sales began to be implemented through videodiscs after a while. Afterwards, consumers met with computers and telephones as pioneers of the popular devices of in-home shopping activities by the time 1980s arrived (Lumpkin and Hawes, 1985: 139-140).

Correspondingly, *Telephone Shopping* emerged as one of the most prominent and suitable way of shopping. In that method, consumers are just required to call the phone numbers of the providers and order products needed that are normally supposed to be delivered in two days. In this sense, telephone shopping raised sales and profit rates especially for department and specialty stores enabling consumers to shop without going in stores and coming face to face with sellers (Cox and Rich, 1964: 32). Thus, advent of the telephone shopping led *in-home shopping* practices to be popular and contemporary way of shopping along with its distinctive characteristics such as ease and rapidity of purchasing, necessity of shorter time and lesser endeavor given, avoidance

from crowded masses, addiction to way of living spend in outskirts and preference of arbitrary time spending, improvements in product variety and delivery facilities of in-home shopping activities (Gillet, 1970: 40-41). Besides, *Mail Ordering* shopping practices raised quite sharply by 1980's as commonly used in-home shopping method (Lumpkin and Hawes, 1985: 139).

By the time late 1980's and early 1990's arrived, shopping malls were controlling the retail sector it is because almost half of the sector was dominated by them (Eastman et al., 2009: 104). In those years, malls become center of interests for consumers who embraced those places as favorite shopping locations (Nicholls et al., 2002: 149). However, in time, malls has lost its supremacy as a result of the sharp falls in mall sales (Wakefield and Baker, 1998: 515). In that decline, one of the most important reasons was that consumers had more limited times allocated for shopping activities compared to previous times. Furthermore, the next one was that consumers adopted e-commerce practices quite fast (Nicholls et al., 2002: 149). Accordingly, electronic shopping environments satisfied various and changing demands of consumers in the most proper way ever (Eastman et al., 2009: 104).

2.2.3. Role of Internet technologies in the formation of e-commerce and online shopping patterns

As for today's commonly used technologies, phones, cell phones, mobile phones, Internet and mobile Internet technologies, ATM, PC or other touch-operated screens and interactive digital TV technologies have been pointed out (Aksoy, 2010: 52).

These new or digital technologies have been embraced by different environments such as education, security, health, business, communication, social life practices and various public services it is because they offer great ease of use, new working methods and other communication and information receiving or sharing facilities. As for businesses sector, changing preferences of consumers and solution-seeking of businesses for high competitive market atmospheres led to new innovative-based economic and production strategies to be implemented. In this sense, commercial sectors have been reshaped by consumer preferences and this move transformed technologies used in the sectors. Ultimately, technologies determined consumer preferences. Within this context, today's digitalized consumption patterns emerged (Aksoy, 2010: 46).

A bilateral interaction has been observed between business and technology environments. Each side determines their positions according to one another. As the Internet and communication technologies improve, consumers become more dependent on the new technologies which lead business organizations to increasingly invest in information technologies including self-cash desks, self-service innovations, interactive and touch screens, virtual stores and more other mobile applications. In this sense, marketing conditions and shopping activities take form accordingly which cause great increases in tendencies towards online shopping (Priporas et al., 2017: 374).

Any type of economic activity performed by means of electronic connections have been named as *electronic commerce* (e-commerce) which consists of various forms such as business-to-business (B2B), business-to-consumer (B2C), and government-to-constituent. B2C business differs from others as representing Web-based purchasing activities of consumers towards retail products and services (Slyke et al., 2004: 1).

Emergence of e-commerce, which is not used differently from *electronic business* and *electronic markets* in the literature, has been involved in the literature by 1970s. Technological changes including rising popularity of personal computers, developments in Internet (especially in Web technologies) and telecommunication networks, the mutual interaction and integration of these processes have enabled so-called e-commerce to be shown up (Wigand, 1997: 1-3).

In today's business world, e-commerce has been considered as the state-of-the-art technology that emerged because of the progresses occurred in World Wide Web (WWW) technologies. Increasing numbers of people take advantage of e-commerce environments in searching and shopping activities. Companies such as *Auto-by-Tel* (Liang and Lai, 2000: 1); *Amazon* (Bitner et al., 2000: 144); *eBay*, and *Travelocity* (Vijayasarathy, 2003: 747) have been regarded as prominent and pioneering business organizations serving in the e-commerce world. Furthermore, among the most fashionable activities performed in Internet, online shopping draws attention, as being third mostly preferred one just after Web browsing and instant messaging or e-mailing activities (Li and Zhang, 2002: 508).

Considering Internet as an e-marketing platform, it has differentiated from other means along with its characteristic features. Accordingly, Internet is able to stockpile, search, regulate, and distribute huge quantities of information in almost most convenient

and cheapest way possible. On the other hand, it allows people to make payments, distribute principal products and interact with each other regarding their experiences of purchasing. Especially information or digital-based products may be distributed as almost free of charge through Internet facilities. In other words, Internet is rather helpful in every phase of marketing activities (Peterson et al., 1997: 333-334).

Accordingly, World Wide Web as an Internet-driven mechanism enables people to reach numerous contents such as; sound, video, text, photographs and graphs by means of hyperlinks (Berthon et al., 1996: 24). Web services have been differentiated from previous technologies along with hypermedia characteristics, which facilitated people to surf in Internet through interfaces named as browser (Ainscough and Luckett, 1996: 36-37). These technologies, along with their two-way, multiple media, communication characteristics, become a quite efficient factor in daily practices so that people have been facilitated to discover more combining learning and entertaining activities in one medium (Brown, 2000: 13-14).

Considering the benefits of Web technologies regarding e-commerce activities, along with its multi-media supported infrastructures, preference of it as a network-based selling tool by business organizations seems quite rational (Fox, 1995: 33). Web technologies stand out lately along with its impact on e-commerce activities. In this sense, Web enables marketers to utilize virtual galleries displaying their product selections, provide order form and help consumers in online platforms, advertise and dispatch goods and services, attain feedbacks from consumers, reveal Web sites for the use, discovery and interaction of consumers. In Web-based commerce, marketers have been reached by consumers, marketing techniques are simple, doing business is affordable and unrestricted compared to traditional media forms, individual or organizational business forms are all equal in terms of taking advantage of Web technologies, consumers are enabled to be included in production processes in accordance with their advices, businesses are allowed to launch various samples of products and, form databases regarding preferences of consumers (Berthon et al., 1996: 24-28).

Besides, business organizations mainly focus on the gaining in return for their investments on Web platforms. In this regard, they are concerned about the quantity of Web users, lack of standards and lifetime of Web sites. Furthermore, commercial utilization of Web by consumers has been dependent on some factors including *ease of*

use, *ease of access*, *risk* and *price*. In this sense, ease of access to Web technologies means rapidity of access, facility of reaching service providers and having computer components such as modem, hardware and software for consumers. However, consumers seek for ease in setup of software, user-friendly programs within the scope of ease of use. Additionally, other risk related factors such as privacy and security emerge as the parameters that play role in adoption of Web technologies as commercial tools by consumers. Commercial activities of consumers on Web platforms have been substantially formed in accordance with security issue regarding flow of financial data through Internet environments. All these subject matters have serious impact on consumers and their commercial activities done by means of Web technologies (Hoffman, et. al., 1995:9).

By the time late 1980s arrived, financial markets had been equipped with computer technologies. What is more, fast development in telecommunication and search engine technologies, emergence of alternative charging methods and, appearance of markets with online database had been observed as other factors taking markets a step further (Feldman, 2003: 99-100).

A prominent example of electronic shopping system emerged in 1988 being called *Telaction*, which enabled customers to buy merchandises by means of cable television channels. Besides, another home shopping system named *Prodigy* launched by IBM, Roebuck and Sears allowing customers to purchase goods via individual computers. Likewise, Comp-u-store and Comp-U-Card platforms have been revealed as other representatives of electronic shopping platforms, which facilitated selecting, ordering and receiving products with most convenient prices for people through computers or telephones. All these innovations showed up in shopping practices are regarded as obvious tendencies towards electronic market formation (Malone et al., 1989: 167-168).

First appearance of the commercial Web sites occurred by the mid-1990's. Accordingly, huge commercial corporations, media companies, and retailers began to benefit from Web sites as a new market environment and a part of their online shopping strategies. In other words, Web environments have been regarded as serious commercial facility by business organizations (Feldman, 2003: 117). Commercial Web sites have been described in different categories in accordance with the functions they have. In this regard, *incentive site, search agent, mall, online storefront, content* and *Internet presence* constitute these categories (Hoffman, et. al., 1995:13-15).

CHAPTER THREE

3. ONLINE SHOPPING PATTERNS OF GENERATIONS ON THE BASIS OF EXTENDED-TECHNOLOGY ACCEPTANCE MODEL

3.1. Generations and Marketing

Regarding the investigation of relationship between societies and people, concept of generation has been regarded as one of the crucial intermediaries being utilized (Alwin and McCammon, 2007: 219). Although generation phenomenon has always been upward trending and remarkable issue, cultural, technological, intellectual or social movements caused this subject matter to be even more important in recent decades. Especially advances had seen in communication and media technologies in global scales led generations to be globally formed in which electronic-based communication and new media technologies played crucial role along with interactive characteristics. Karl Mannheim, who plays an important role in the studies regarding generations, initiated researches focusing on the actions that generations performed in historical transformations. Accordingly, Mannheim pointed out great historical incidents as determinant factors for the formation of generational consciousness (Edmunds and Turner, 2005: 559-560).

As for business world, generational cohorts matter especially in the segmentation of the markets for which age-based segmentation would not be sufficient alone. Generational cohorts, experiencing external incidents along with resembling aspects, and inspection of differences among them might be useful than ever in the prediction purchasing patterns of the consumers (Eastman and Liu, 2012: 93).

A generational cohort has implications pointing out a consumer class as well of which coming-of-age year has been considered as the base regarding the assumptions made for towards value range of that group of people. Results of the some researches elicited that generational background or characteristics determined the purchasing preferences of the certain generations. Accordingly, marketers may conduct their marketing segmentation strategies on the basis of age cohorts of the consumers, which refers to generational distinctions (Hung et al., 2007: 837, 850). In this context, inspection of generational discrimination might be a reasonable guide in the prediction of purchasing or, in general, consumer behaviors of the masses.

Scholars from academic and marketing environments, utilize Generational Cohort Theory in the segmentation of markets as based on values, beliefs, ideas, and attitudes

of generational cohorts (Brosdahl and Carpenter, 2011: 548). Marketing people organized and implemented their strategies taking specifically every generation into consideration so far. Accordingly, they update their tactics once more along with the recently emerged generations and the technologies commonly used by them (Dickey and Lewis, 2010: 191-195).

3.1.1. Generational Cohort Theory

Theory of generational cohort stems from the Karl Mannheim's existential-based studies in which it had been researched whether or not social knowledge of individuals independently obtained without the effects of location of social class. Focusing on the differences in behaviors and attitudes regarding age of the people, this theory left a substantial mark in the history of sociology (Rotolo and Wilson, 2004: 1093-1094). According to theory, every cohort acquires and represents similar thoughts, experiences, and values since they almost live in common periods experiencing quite similar incidents in nearly same terms (D'Amato and Herzfeldt, 2008: 931).

3.1.2. Characteristics of two societal concepts: Generation and cohort

In academic circles, both of terminologies *generation* (Egri and Ralston, 2004; Dou, Wang and Zhou, 2006) and *cohort* (Schewe and Meredith, 2004; Ryder, 1965) have been utilized to name sub-groups of societies. As for generation, it has been defined as "a group of individuals born and living at about the same time" or "a group that shares a common location in the social and historical process" (Alwin and McCammon, 2007: 224-225). In another definition, it refers to "an identifiable group that shares birth year, age, location, and significant life events at critical developmental stages divided by five to seven years into first wave, core group, and last wave" (Kupperschmidt, 2000: 66). In accordance with those descriptions, in brief, common experiences of generations enable them to have similar inclinations, preferences and attitudes (Costanza et al., 2012: 376).

Notion of generation consists of three crucial components, which are a common generational consciousness, or socio-cultural position, a common generational site or location, commonly experienced time period or epoch or historical location (Gilleard and Higgs, 2002: 373). Referring to group of people having similar values, attitudes, ways of living as well as being in the same ages, generations reflect the conditions of

specific and common epochs. Differentiating from each other in various and certain ways, different generations symbolize different characteristics. However, among many signs, birth date or age is regarded as most important attribute for the classification of generations (Chen, 2010: 132; Costanza et al., 2012: 376).

Nevertheless, cohort had been stated as group of people witnessing and experiencing same incidents such as first admission for a job or marriage in the same periods of time (Ryder, 1965: 845; Carlsson and Karlsson, 1970: 710). To put it differently, cohort has been attributed a relatively restricted meaning in which members have been evaluated in shorter periods of time (Hadju and Sik, 2018: 4).

This group of people, regarded as cohort, has not been considered in the same category with generation since every generation has been identified along with birth date it has. To clarify this, cohort is identified with the duration of external events experienced, while generation is described within the scope of age and years of birth. In this sense, examples of Great Depression or Depression cohort, Second World War Cohort, Post-war cohort would be good and meaningful to put the difference between the terminologies of generation and cohort (Schewe and Meredith, 2004: 52-54).

However, to avoid from a possible perplexity and to clarify important concepts of the theory, an explanation is needed. In this regard, terminology of "cohort" has been used under the name of conceptualization of "generation" for quite long terms. In this sense, generation has been even defined as "a group of people or cohorts who share birth years and experiences as they move through time together, influencing and being influenced by a variety of critical factors" (Kupperschmidt, 2000: 66); or "groups of individuals (i.e., cohorts) based on shared experiences at similar ages or cohorts of individuals created by shared experiences" (Costanza et al., 2012: 376). Accordingly, these two concepts have mostly been used in various many studies instead of one another (Ryder, 1965: 844, 853; Jurkiewicz and Bradley 2002: 148; Costanza et al., 2012: 376); as a well-matched terms (Alwin and McCammon, 2007: 225).

Nonetheless, concepts of *birth cohort* (Twenge et al., 2008: 876); *age cohort* (Jurkiewicz and Brown, 1998: 18; Jurkiewicz and Bradley 2002: 148); *generational cohort* (Jurkiewicz and Brown, 1998: 19; Jurkiewicz, 2000: 58) have also been employed within the same label of generation and cohort by different studies.

3.1.3. Generational characteristics

Despite the fact that generations have something in common in the general meaning, mismatches among them are big enough as well to be disregarded. In other words, various experiences obtained in different epochs constitute the demarcation lines of the generations in terms of the way they think, personal traits and beliefs they have, and so on (Bowes, 2012: 15). Stern (2002: 187) strongly highlight that generational variations are genuine and worth to be inspected.

Developments emerged in social, economic, political and technological meaning have caused notable changes in cultural structures which diversified behaviors of the generations who were born in different periods of time (Ayhün, 2013: 93). Culture, which is a non-stop changing and transforming process, forms the beliefs, values, attitudes and consequential phases for people also providing them a guide how to think, act, behave, communicate, perceive and so on. In this sense, culture transforms these manners not only in personal but also in communal basis. Given generation is a kind of national sub-culture, which represents generational identities such as; beliefs, behaviors, values accompanying a generation along with its life period (Egri and Ralston, 2004: 210), generational differences have been associated with cultural differences. Accordingly, when the cultural changes emerge young generations embrace new values too (Twenge, 2013: 11-14).

Besides, generations are well-accepted as active contributors to social change (Carlsson and Karlsson, 1970: 710). Especially after WWII, generational impact over social changes have been admitted. Accordingly, Auguste Comte came into prominence remarking that in the determination or formation social change, generational alterations were quite influential (Levickaite, 2010: 170). Nevertheless, generations and social structures may be assessed as two mutually interacting components which have remarkable influences on one another.

Characteristics that disclose generational structures have been ranged as "world view, values, and attitudes commonly shared by or descriptive of cohorts" (Kupperschmidt, 2000: 66). Besides, there have been some major characteristics that are needed to detect generational boundary or extent. In accordance with that, war-like shocking incidents, inequalities in dissemination of societal wealth, period of times that take the societies a step forward or back in socio-economic meaning, formation of holly places and blessed values to gather people together, growing or creating popular

statesmen or legendary heroes making real differences, common jobs done by people who have good relations (Sessa et al., 2007: 49).

Even though personal or individual-based differences still valid among generations, it is a fact that common periods time and birth of dates, shared experiences create common characteristics of generations too. Nonetheless, compared to personal values, preferences, behaviors or attitudes, generational traits are stated to be more generalizable and long lasting. As a matter of fact, almost every single details such as; the way that generations behave, spend money, spend time, socialize and values they believe in, look for in marriage, friendship or political party etc. are affected by aforementioned common characteristics. Even previous generations have serious impacts on the latter ones (Kupperschmidt, 2000: 66). Besides, criterions regarding division of generations differ among various parts of the world. Accordingly, birth year has been well accepted in U.S as demarcation regarding distinctions among generations, while those generational characteristics vary from countries to countries in Europe. However, developments of communication and networking technologies facilitated removal of borders regarding sharing of experiences, personal communication processes which led generational formations to more globalized paths (D'Amato and Herzfeldt, 2008: 931).

Even though first denominations of generations have been executed by the time 20th century arrived (Smola and Sutton, 2002, 364: 364), there has still not been a consensus or full agreement on the age ranges and the titles of generations so that different scholars describe same generations with different names, birth of dates and ages (Sessa et al., 2007: 49).

Considering generations, various categorizations have been made up until now. In this sense, generation phenomenon has been discussed by many scholars within different scopes of time periods and names (Costanza et al., 2012: 377), which make it hard to determine the borders or to demarcate (Cennamo and Gardner, 2008: 892). Accordingly, one of the most prominent studies belongs to Strauss and Howe (1991) who shed light on advent and progression of the generations and providing a well-accepted categorization by large-scaled researchers and scholars (Costanza et al., 2012: 379). In accordance with Strauss and Howe's study, existence of different generations have been pointed out encompassing years between 1860's and 2000's. In this sense, generations had been listed as *Missionary* (1860-1882); *Lost* (1883-1900); *G.I.* (1901-

1924); *Silent* (1925-1942); *Boom* (1943-1960); *Thirteenth* (1961-1981); *Millennials* (1982-2003) and *Unnamed* (2004 and later). As for Cennamo and Gardner's research (2008: 892), classifications of generations have been formed as *Baby Boomers* (1946-1961); *Generation X* (1962-1979); *Generation Y* (1980 and later). As for Williams and Page (2011), generations have been classified as *Traditionals* (1930-1945); *Baby Boomers* (1946-1964); *X* (1965-1976); *Y* (1977-1994); *Z* (1994 and later). McCready, (2011:12) discuss generations in four main groups as *Traditionalists* born between 1900-1945; *Baby Boomers* born between 1946-1964; *Generation X* born between 1965-1980; and *Millennials* born between 1981-1999. Keleş (2011) groups generations as *Baby Boomers* (1946-1964); *Generation X* (1965-1979); *Generation Y* (1980-1999); *Generation Z* (2000-2021). Furthermore, McCrindle and Wolfinger (2009) sum up generations in six groups as including Builders (1925-1945); *Boomers* (1946-1964); *Generation X* (1965-1979); *Generation Y* (1980-1994); *Generation Z* (1995-2009); *Generation Alpha* (2010-Later).

In academic sense, generations have been used commonly by scholars on a vast scale of studies from different fields. For example, Lamm and Meeks (2009) investigated the relation between workplace fun and individual workplace output as based on generational differences, while D'Amato and Herzfeldt (2008) studied different characteristics of managerial generations within the scope of talent retention, organizational commitment and learning. Besides, Sessa et al., (2007) studied generational distinctions within the working life practices. Additionally, Carlsson and Karlsson (1970) investigated the role that generations play in social change. Furthermore, Hajdu and Sik (2018) focused on distinctions regarding work values of generations.

Generations generally have been categorized in nine groups including *Missionary Generation* (1860-1882); *Lost Generation* (1883-1900); *G.I. Generation* (1901-1924); *WWII Generation* (1909-1933); *Silent Generation* (1934-1945); *Boom Generation* (1943-1960); *Generation X* (1961-1981); *Generation Y* (1982-1997); *Generation Z* (1998-2009). However, only generations Y and Z will be discussed in this study it is because, within the scope of this study, attitudes of Generation Y and Z towards online shopping have been investigated in the light of Technology Acceptance Model (TAM).

3.1.3.1. *Generation Y*

First entitlement of this generation had been made as *Generation Y* with the intention of differentiation from Generation X (Levickaite, 2010: 173). However, there have not been a single common label considered to be convenient for these people so that they have been called with following names including *Digital Natives* (Prensky, 2001: 3); *Echo Boomers* (Lamm and Meeks, 2009: 617); *The Echo-Boom or Nintendo Generation* (Alch, 2000: 42-44); *Yers* (Martin and Tulgan, 2006: 55); *Peter Pan Generation* (Levickaite, 2010: 173); *Millennials* (Howe and Strauss, 2000); *Trophy Generation or Trophy Kids* (Tulgan, 2009); *First Digitals, Digital Aboriginals* (Berk, 2009:5); Generation-Yers (Sessa et al., 2007: 52); *Dot.Com Generation* (Stein and Craig, 2000: 220); *The Net Generation* (Oblinger and Oblinger, 2005:1; Tapscott, 1998: 203); *Neters* (Clausing et al., 2003: 373). *Generation www* or *Generation E, Non-Nuclear Family Generation, The Nothing-is-Sacred Generation, The Feel-Good Generation, The Wannabees, Cyberkids, Searching-for-an-identity Generation, and The Do-or-Die Generation* (Tolbize, 2008: 4); *Digital Generation, Nexters or Next Generation* (Zemke, Raines and Filipczak, 2013: 120, 255); *GenMe* or *nGen* (Twenge, 2010: 201); *Why Generation, Gen Wired, We Generation, DotNet, First Globals, Ipod Generation,* and *iY generation* (Williams and Page, 2011: 8).

As for birth years of these people, Bolton et al, (2013: 247) determines period of 1981-1999, while Alch (2000: 43) claims 1977-1997 as the time range of birth. In brief, period between 1982-1983 is regarded as the commonly accepted starting years, while there is no consensus over ending date, which supposedly comprises a period between 1994-2003 (Smola and Sutton, 2002: 365; Sessa et al., 2007: 51; Strauss and Howe, 1991: 338).

Generation Y has been regarded as the continuation (Berk, 2009: 5); children (Alch, 2000: 42); and relatives of Boomers and Generation X (Martin and Tulgan, 2006: 55-56). This generation emerged in an atmosphere formed by advanced technologies, economic turbulences, serious illnesses and terrorism such as Oklahoma City bombing, September 11 attack (Kyles, 2005: 54-55; Sessa et al., 2007: 51). As Twenge (2013: 11-15), compared to former ones, Generation Y is regarded as more intense version of "generation me". Nonetheless, these are people who are more egocentric, apolitical, less interested in social projects or activist organizations. Furthermore, these people have been considered as friendly and social masses who always act with great confidence,

having serious ability in executing multi-tasks intending to make good impression on their environment (Reynolds, 2005: 14). In this sense, this generation has been known as quite active in social activities (Smola and Sutton, 2002: 365).

This generational cohort has mostly been characterized with self-reliant, creative, media-savvy, enthusiastic, clever, opponent, interacting, adaptable, and accommodating people. They are socializing themselves constructing online communities, able to overcome social issues, like shopping, playing games, researching, helping adults regarding Internet use. These people are also regarded as good in building their own businesses. They are quite materialistic and care a lot about appearance (Tapscott, 1998: 204).

Generation Y represents the human profile who tends to be independent and spend time dealing with the technology and respective developments. Also, they have been regarded as people who love spending money, attend recreational activities, travel, have new experiences, follow dreams and allocate time for their social environment. People, belong to this generation, are less bound by the rules but more sensitive about their own privacy. Compared to others, this generation is considered as different in terms of the positive atmosphere they grow in (Ayhün, 2013: 95-101).

Beyond that, this generation has been represented by positive, optimistic and mostly tolerant people (Strauss and Howe, 1991: 338-342) as well as quite sufficient technology knowledge and standing out as pioneers in social responsibility projects (Martin and Tulgan, 2006: 55-56). People of this generation have grown up along with video games, computer games and applications, reality TV shows, Facebook, Twitter, Skype, iPhones, smart phones and so on. According to a research conducted in America in 2007 regarding technology usage of Generation Y, quite remarkable results had been obtained. Accordingly, over 90 percent of them have computer, cell phone and actively use Internet. Moreover, almost 50 percent of them are active media content creators, downloads music and film on Internet, uses Websites as news source. For this reason, they are even called as generation "born with a chip" (Berk, 2009: 3-8). More specifically, these people have been known as first generation who are more competent in usage of a mouse compared to a pen (Stern, 2002: 190).

Given the fact that Generation Z has not yet been included in the professional working life, Generation Y is regarded as the most qualified and highly educated ones

in labor force of modern times. In this regard, most of them have bachelor degree, while remarkable amount of them hold master's degree (Wesner and Miller, 2008: 91-92).

In brief, characteristics of generation Y can be summarized with the following details below:

- Born between 1981-1998
- Children of Baby Boomers and generation X
- Experienced terms of advanced technologies, economic chaos, serious illnesses, and terrorism.
- Named as "generation me" more than any other generation
- Relatively more egocentric, apolitical, and less activist
- Social, friendly, confident, impressive, creative, media-savvy, adaptable, materialistic, well-educated, and multi-tasking
- Interested in new technologies, spending money, attending in recreational activities, traveling
- Competent in technology usage, social networks and other internet-based technologies

3.1.3.2. *Generation Z*

There was not a real consensus on how this generation should be named. In this regard, Generation Z has been entitled with various names too such as *New Silent Generation*, *The Post Millennials* (Bassiouni and Hackley, 2014: 116); *Children of Internet, GSM-based Generation, Media Generation, iGen, .com Generation or Instant Online* (Berkup, 2014: 223-224); *Emoji-onal Generation* (Puiu, 2016: 69); *Generation M* (Roberts, Foehr and Rideout, 2005); *i. e. Generation, Generation Next, The Internet Generation*, *iGeneration, Net Generation, 21st Century Generation, The dot-com kids, Digital Natives, Generation Media* (Levickaite, 2010: 173); *Digital Generation* (Sezgin, ?: 1); *Zeds* (McCrindle and Wolfinger, 2009: 65); *Tweens, Baby Bloomers, Generation XD, Generation 9/11*. These people are also called as the *new traditionals* or *conservatives* (Williams and Page, 2011: 10).

Advent of this generation has been associated with the late 1990s (Sezgin, no date: 3) or more specifically period of 1990-1999 (Tulgan, 2013), while end date have been stated as 2009 (McCrindle and Wolfinger, 2009: 65). Despite the fact that

Generation Z has been considered as the youngest generation, they grow up quite rapidly. As a result, they get involved in life practices such as education, marketing environments, and so on earlier than expected (Levickaite, 2010: 173). Even adolescence period begins earlier for them compared to other generations (McCrindle and Wolfinger, 2009: 66).

Generation Z have been considered as distinctive from previous generations because they have been in a constant change process along with the contributions of technological developments (Puiu, 2016: 67). As being considered prospective children of generation X, they are fast, practical, dissatisfied and result-oriented consumers who born into and considers technology as an obligation or requirement rather than just an innovation. This generation's most remarkable characteristics are being tech-savvy, innovative and connected to the world globally, addicted to social media, multi-skilled. They have relatively the highest motor skills (Berkup, 2014: 223-224).

In summary, general traits of generation Z can be given in order that are as follows:

- Born between 1999-2009
- Children of generation X
- Youngest generation
- Involved in education, marketing and other life practices earlier than expected
- Practical, dissatisfied, result-oriented
- Tech-savvy, innovative, global, multi-skilled
- Highly competent in technology usage and social media

Considering the general characteristics of both generations Y and Z, it is obvious that they are both technologically competent people who use innovative devices in their daily lives. Furthermore, they adapt to new developments faster embracing them in the daily routine. Interestingly enough, they prefer individual life styles. On the contrary to generation Z, generation Y experienced more problematic conditions through their lives. However, generation Z is born in a world in which relatively better conditions, socio-economic and educational developments have been emerging.

3.2. Technological Competences of Generations Y and Z

Compared to previous generations including generation X, Baby Boomers, or Silents, generations Y and Z might be indicated as the digital natives along with Marc Prensky's criterions (Prensky, 2001: 2). Accordingly, generations Y and Z are competent enough in usage of digital or technological language, while other generations may be regarded as digital immigrants who struggle to adapt to that new language. In this sense, for example, generation X can be named as digital adaptives who are at least aware of technological advancements trying to keep up with that. The situation regarding or labels given to generations ahead of generation X even more negative it is because they remained quite far away from such innovative developments (McCrindle and Wolfinger, 2009: 52).

3.2.1. Generation Y

This generation has been accepted as the firstly emerged global and technologically competent masses. Almost all of this generation does everything they need such as daily activities, business or money affairs through online technologies (Berkup, 2014: 222-223). Given two main assumptions made regarding Generation Y, Bennett et al (2008: 777) state that members of this generation have large-scale of knowledge and quite enough ability of using information and communication technologies (ICT); thereby, they are supposedly differentiated from previous generations regarding the ways of getting information.

One of the most remarkable distinctions of this generation is to be exposed to technology as soon and common as possible so that they grew up with computer technologies. Especially to communicate with people, they benefit from these technologies (Bolton et al, 2013: 247-248). For the reason that Generation Y get involved in technology world in a fast-paced, they have always been familiar with and passionate about new technological developments (Wesner and Miller, 2008: 93). A major part of university students of Generation Y, as an example, considers technology as a part of daily life in which they easily use. According to them, technology is regarded as useful in teaching, learning, self-development, socialization, and in doing similar things faster (Oblinger and Oblinger, 2005: 2-3).

This generation get used to take advantage of digital technologies such as cell phones, computers, videogames, music players, video cams, e-mail, Internet, instant

messaging tools and so on so that they have been enabled to be native speakers of the digital language of aforementioned technologies (Prensky, 2001: 2). Members of this generation have some superior qualifications in technology use so that they are visually good communicators and analysts. They also have exploration-based learning abilities, multitasking and fast-changed attention skills. Furthermore, digital media literacy, interaction, staying connected and networking, immediacy in exchange of information (Oblinger and Oblinger, 2005: 3-11).

As for social media usage of Generation Y, people of this generation are noticed as active user of social media platforms. They mostly play games, consume, share and search for various media contents, and even work through social media tools. Considering the reality that social media usage of people gives serious implications regarding behaviors that may affect whole society including business, consumers, customers, workers and so on, social media practices of Generation Y have been pointed out as quite important issue. Accordingly, development of consumer identity, consumption habits, attitudes of consumers towards firms and brands are all influenced by social media usage of this generation (Bolton et al, 2013: 245-246).

Unlike the acceptance of e-mail as the most common method of communication by Baby Boomers and Generation X, Generation Y prefers social media because of the interactive characteristics. Within this context, marketers should consider this fact in marketing activities towards Generation Y (Dickey and Lewis, 2010: 191). Even in work environment, they differentiate from other generations bringing digital technologies to their shifts, actively using social media platforms such as Facebook, Myspace and interacting with others (Twenge and Campbell, 2008: 862).

In short, some technology-related qualifications and abilities of generation Y can be summarized with the following features given below:

- First technologically competent people
- Native speaker of digital language of new technologies
- Literate in digital media
- Effective user of online technologies
- Having high ability in the usage of information and communication technologies
- Grew up with computer technologies

- Communicating with people through computer technologies such as cell phones, computers, video-cams, email, and other internet-based instant messaging tools.
- Commonly usage of new technologies in many activities such as learning, self-development, socialization etc.
- Competent in social media usage

3.2.2. Generation Z

In the current era, young people, who actually represent generation Z, live in a quite rich atmosphere full of great range of media technologies so that an average member of this generation uses various media devices in different places such as in different rooms of the house, outside, even in bed. In other words, a great part of their lives is occupied with a wide variety of media tools (Roberts, Foehr and Rideout, 2005: 57).

This generation is generally associated with the richest range of digital communication technologies in their private living areas which is seen for the first time compared to other generations (Bassiouni and Hackley, 2014: 116). Furthermore, this generation has a very good understanding and ability towards technologies. However, they have mostly been identified with mobile phones, computer, MP3, I-Pod, DVD and other mobile technologies (Ayhün, 2013: 102).

For this generation, technology and technological development mean nothing more than a daily routine since they see technology as an indispensable part of their life just as they talk, eat, or learn. In other words, just as they are born, their addiction to the technology begin simultaneously (Koulopoulos and Keldsen, 2016: 2).

Generation Z makes a remarkable difference as being quite competent in the usage of technological and digital language. Since they are born, they met only with environments full of user-generated, hyperlinked, and wireless technologies. Therefore, reaching any sort of information through just a couple of clicks became possible for these people (McCrindle and Wolfinger, 2009: 66).

Besides, they generally avoid realities of life especially through advanced technologies (Wood, 2013: 1); such as Internet and other online environments. Simply put, they spend most of their time on YouTube, Facebook, Snapchat, Instagram and

others (Puiu, 2016: 68-69) since, for them, socialization means getting involved in life through smart phones or keyboards (Sezgin, no date: 3).

Briefly, technological-based characteristics of generation Z may be summed up the following attributes given below:

- Effective usage of media technologies even in the private life areas such as in the bed.
- Busy all the time with media devices
- Mostly associated with mobile phones, computers, I-Pod, smart phones, keyboards and other innovative technologies in the daily routine
- Technology addicted.
- Competent user-generated, hyperlinked, and wireless technologies.
- Socialization through social media platforms such as YouTube, Facebook, Snapchat, Instagram, and others.

In view of technological competences and qualifications of both generations Y and Z, they are always one-step ahead of previous generations such that they are regarded as native users of the new media and information technologies. Compared to one to another, generation Z is more tended to use new technologies it because memmers of this generation do not know any world possible before digitalization. For this reason, generation Z may be considered as more tech-savvy or technology addicted it is because they do not have any private life area isolated from digital technologies.

3.3. Characteristics of Generations in the Scope of Marketing Environment

Every generation has its own original characteristics in terms of the background, experiences, values, attitudes, and way of living obtained, as the same diversity is valid for the consumption patterns of different generational cohorts. In this respect, segmentation of the generations as different consumption groups of people sounds rational (Arıker and Toksoy, 2017: 486). Considering the reality that generations represent different environments of communities who born in similar years, that is, having similar ages (Williams and Page, 2011) marketers headed towards these populations in their trading strategies. For the reason that generations experience different circumstances during their lives, they have been believed to act in different ways as well regarding consumption, purchasing and shopping patterns (Yaşa and Bozyiğit, 2012: 29-33; Lissitsa and Kol, 2016: 304).

Marketing people have been deliberatively tended to differentiate people in terms of their purchasing actions. Therefore, they implement segmentation strategies over markets taking various criterions into consideration. In this sense, age has been pointed out as one of the most important and widely-used criterions in the determination of market segmentation (Yaşa and Bozyiğit, 2012: 29-33).

Having good relations with consumers requires better understanding of them (Williams and Page, 2011: 2). Nowadays in the business world, marketing people should develop a better or more sophisticated understanding towards consumers who are dispersed and more diverse. Within this context, detailed analysis of generations matters than ever before (McCrindle and Wolfinger, 2009: 176). For this reason, marketers, in time, began to benefit from generations as a roadmap in their marketing strategies (Altuntuğ, 2012: 207-208).

3.3.1. Generations Y and Z

Youth culture of the recent times, which is represented by Generations Y and Z, has been transformed by the changes emerged in politics, marketing, technology, and cultural formations. In this regard, recently-formed youth culture has been considered quite different compared to previous times. In accordance with such disparities, Generations Y and Z have been evaluated as diverse from other generations in the general terms (McCrindle and Wolfinger, 2009: 4).

Accordingly, within the scope of the study, importance of generations Y and Z in the marketing field has been elicited in this section since especially for Generations Y and Z it has been observed that classical marketing methods obviously do not work. More specifically, Generations Y and Z represent the first individuals who are exposed commercial messages through new media technologies. Considering the fact that attention span of those generations relatively shorter, increasing diversity of messages because of the facilities of new media served well for the purpose of marketers enabling them to send messages time after time (McCrindle and Wolfinger, 2009: 176-179).

3.3.1.1. *Generation Y*

From the standpoint of marketers, generation Y, which is forecasted to be three times larger than generation X in terms of population rates, is considered quite different and worth to be studied along with its extraordinary characteristics. Considering high

population growth rates of generation Y, it is estimated that, in the near future, this generation will have serious impacts on economic activities with its purchasing attitudes and behaviors (Wolburg and Pokrywczynski, 2001: 33-34).

Along with the serious changes that marketing environments had been exposed to, this generation gained ground as a consumer segment (Reynolds et al., 2008: 19). Generation Y draws attention as the one experiencing effect of consumer culture by 1980s and 1990s. This generation, as being strongly influenced and formed by information era, has been described along with its consuming inclination. People of this generation have been associated with consumption phenomenon, as the consumers have initially been empowered by the participation of generation Y into consumption processes so that members of this generation played an important role in market atmospheres as active consumers. Besides, this generation has been pointed out as the first generation that embraced consumption culture and made it as one of daily routines (Altuntuğ, 2012: 204-209). In accordance with, members of this generation have been labeled by marketing professionals as the first generation who embraced consumption culture and made it as one of the daily routines (Stern, 2002: 190).

Furthermore, economic perspective of this generation is not far away from digital model so that they welcome warmly the changes towards electronic commerce. Hence, they already overwhelmed their parents (Baby Boomers) in terms of purchasing power. In this respect, they are estimated to be named as the largest population regarding purchasing power in markets by this century. Furthermore, it is predicted that they will affect and determine directions of different sectors such as real estate, construction, finance and so on. However, according to some assumptions, this generation will follow the path of their ancestors (Boom Generation and Generation X) in terms of purchasing habits. Accordingly, as Boom Generation (parents) had been observed spending most of their budget on jeans, music, fast food, highest rates of spending of Generation Y have been performed in clothing, entertainment, food respectively (Alch, 2000: 43-44).

As for Generation Y, quickness in everything they deal with is considerably important for them. They can quickly switch from one activity to another or from a media device to a different one. Hence, technology is a quite efficient factor for any activity they take part in or any product they purchase (Berk, 2009: 9-11). As being born into technologically advanced social conditions, this generation prefers instant pleasures. Moreover, they form preferences and interests at very early ages, which make

them main target for marketers. Besides, traditional ways of marketing do not suit to these people, they; instead, wish to have customized goods and services experiencing them on their own. Entertainment, clothes, footwear, sports equipment, accessory species have been regarded as their domains of interests, which should be provided, with constant updates of offering. On the other side, advertisement and marketing activities are better to be made through Internet sites, video games, TV or radio programs, e-mail, voice mail, videos, e-cards, banner adverts, screensavers, pop-ups, online chat, interactive television and other digital and visual technologies (Williams and Page, 2011: 8-10).

3.3.1.2. *Generation Z*

As for generation Z, it represents masses that opened their eyes into economical and financial crises (Altuntuğ, 2012: 207-208). Besides, this generation has been known along with their determinative impact over consumption practices. Accordingly, they have been regarded quite active in the forthcoming direction of shopping environments in terms of the leading control they have. Also, they consume fast and change their preferences even faster for another product in accordance with their interests. This is why, marketers attribute a special meaning to these masses (Altuntuğ, 2012: 204-209).

Compared to the childhood terms of the other generations, children of the generation Z have been observed as the individuals who mostly expose marketing activities since their very early ages. In this context, they have been named as the biggest consumers ever (McCrindle and Wolfinger, 2009: 66). As the new potential consumption of 1990s, generation Z has been noticed by marketing managers. In this regard, consumption or purchasing attitudes, perceptions, intentions and behaviors of this generation regarding online shopping matters for marketing professionals and their future marketing strategies (Arıker and Toksoy, 2017: 485). As a matter of fact, they have great impact over their parents regarding purchasing decision-making (Puiu, 2016: 70).

The fact is that generation Z does not need parental help or approval regarding investigation of products and brands they are interested in since they take advantage of Internet technologies as a great opportunity to obtain any information during their purchase activities. In accordance with facilities that Internet technologies provide, they

may check views, experiences, preferences and any other detail visiting related sites such as; blogs, forums and so on (Bassiouni and Hackley, 2014: 118).

Having different and distinctive characteristics from earlier generations, this generational cohort is believed to have a probable disparity in purchasing and consuming behaviors. As they constantly live in a virtually designed world, their consumption patterns have been formed along with the inclinations, which lead them to follow shopping world through technology-based environments (Priporas et al., 2017: 376).

Along with the increasing number of technological channels in marketing, which caused higher competition, raising expectations and provided more opportunities, consumption patterns have changed as well in the light of online selling, customization and similar returns. In accordance with these developments, Generation Z found its own way of consumption (Puiu, 2016: 68).

Especially economic, socio-cultural and technological changes caused this generation to be superior from other generations as having sort of trend-maker profile. Members of this generation have come into prominence as effective component of purchasing decision-making processes. For this reason, marketers predict that this generation will form forthcoming consumption patterns and consumer behaviors (Altuntuğ, 2012: 206). As having greater options of product and services compared to previous generations, generation Z is much more interest in and has greater confidence in e-commerce practices (Wood, 2013: 1).

Beyond that, they mostly prefer to make shopping themselves. Also, sometimes, their parents purchase for them as well. Marketers show a special interest to girls in this generation because of the purchasing potential they have. What is more, these people have been characterized with liberal social values and been fond of new media technologies, virtually gained friends and instant pleasures. In this sense, they prefer as fast customer services as possible (Williams and Page, 2011: 10-12).

3.3.1.3. *Comparision of marketing characteristics of generations Y and Z*

To discover marketing based qualities of the generations Y and Z below given characterstics will be useful. Accordingly:

Generation Y:

- Against to classical marketing methods
- Receiving commercial messages through new media technologies
- Shorter attention span
- High population growth rate
- Inclined to consume and associated with consumption
- Have an important role in markets
- First generation to embrace consumption culture
- Exposed to consumption culture in the daily routine
- Tended to e-commerce
- Huge purchasing power in the market
- Leading generation in different sectors of the economies
- Quickness is important in purchasing activities
- Getting involved in purchasing activities through new technologies

Generation Z:

- Against to classical marketing methods
- Receiving commercial messages through new media technologies
- Shorter attention span
- Early meeting with economical and financial crises
- Early meeting with marketing activities
- Influential on the consumption practices of their parents and in general
- Leading generation in the future direction of shopping world
- Fast shopper and biggest consumer ever
- Enjoying facilities of Internet technologies in their shopping activities
- Trend maker
- Decision makers in purchasing activities
- Have confidence in e-commerce practices
- Self-shoppers

As it can be seen clearly through marketing characteristics of generations Y and Z, these generations have both similarities and differences in terms of their potential in the marketing environments. In this sense, both generations prefer new marketing methods. In addition, they pay attention to quickness in marketing communication and

consumption processes. In other words, their preferences fit to e-commerce or online shopping practices. On the other hand, genetation Z is come into prominence with unique characteristics. For example, this generation is quite dominant in trend making and purchasing decision-making phases. Besides, these people relatively more competent in purchasing activities it is because they are one-step ahead of other generations with their great confidence and influential traits over others in terms of shopping preferences.

3.4. Consumer Behavior in the Light of Relations among Attitude, Intention and Behavior

3.4.1. Consumer behavior and attitude

Shopping behavior may differ according to socio-demographic characteristics such as gender, age, education and so on. According to a research done by Brosdahl and Carpenter, (2011) among different generations including the silent generation, the 13th generation, the Baby Boomers and the Millennials, male consumers as a market segment act differently in shopping orientations compared to other generations. Furthermore, Moye and Kincade (2003) examined female consumers in terms of shopping orientation. As a result, four different shopping segments emerged as *confident apparel shopper, decisive apparel shopper, extremely involved apparel shopper, highly involved apparel shopper.*

Seock and Bailey (2008), found that male and female customers have varieties in terms of their shopping orientations. Along with the emergence of Internet technologies consumers have been facilitated to reach greater range of suppliers, goods and brands just clicking on Web pages since they have been enabled to meet Internet retailers through Web sites (Cheung and Lee, 2005: 327-328). Especially, emergence of World Wide Web has enabled commercial world to take part in the Internet-surrounded environments, which provide different new possibilities for both marketing people and consumers. Accordingly, especially consumers obtained more advantages in terms of having expert advice, reaching customized services, meeting quicker processing and delivery of orders comparison of product, services and stores, paying lower transaction costs, getting rid of obligation of talking a salesperson. However, disadvantages such as fulfillment of orders, protection of customer information, methods of payment (Vijayasarathy, 2003: 747); low trust or perceived risk situations (Javadi et al., 2012,

83) are difficult to ignore. Nevertheless, consumers have become more powerful compared to suppliers, as they have not been before (Geissler and Zinkhan, 1998: 386).

On the other side, evolutionary developments in digital technologies caused remarkable changes in consumer behaviors as well as in the consumer types. Accordingly, 6 major digital consumer profile came out containing *influencers, communication insanes, information and news followers, the ones wishing to expand their social environment, emulators, functional users*. Therefore, marketing people intend to reach to more details regarding their varying customer potential profiles including life style and routines they have or platforms and sites they spend time in (Aksoy, 2010: 50-52). Accordingly, some theoretical models have been utilized in or adapted to researches regarding the predictions of purchase intentions and behaviors. One of the most prominent models belongs to Fishbein (1967) and has been called as *Extended or Behavior Intentions Model*, which firstly emerged as an adapted version of Dulany's (1968) *Propositional Control Theory*, intending inspection of relationship between attitudes and behaviors in the general meaning. In this respect, Fishbein's Extended or Behavior Intentions Model had been utilized in different studies concerning purchasing intentions and behaviors (Ryan and Bonfied, 1975: 118, 125).

Scholars are in agreement with the notion that spending potential of the consumers is quite changeable and hard to predict (Juster, 1960: 604). Hence, primary studies in the history emerged as being conducted to make inferences regarding purchase likelihoods (Ferber and Piskie, 1965: 322; Gabor and Granger, 1972). Besides, some other pioneering researches in the field had been implemented along with the data collection about consumer expectations. Regarding consumer expectations and measurement of them, *Thomas Juster* came into prominence along with *Juster Scale* (Juster, 1969). However, measurement of expectations has been figured out to be insufficient on the prediction of behaviors soon. In this sense, inspection of attitudes and plans of the consumers have been commenced by George Katona with the aim of detection of consumer eagerness for spending (Adams and Juster, 1974: 11).

Besides, before that, scholars generally attempted to uncover purchasing behavior patterns taking only demographic and socio-economic characteristics of the consumers into consideration. However, this way of working has not been considered as good enough in the predictions of purchasing behaviors as well. Hence, they have also turned towards purchasing attitudes and intentions of consumers believing that focusing on

these concepts would give better results in terms of prediction of consumer purchasing behaviors (Day et al., 1991: 18).

Beyond that, changing marketing environments along with the Web technologies created need for further investigations regarding customer attitudes. This requirement emerged in order to reveal how important customer behavior is in the marketspaces in just the same way that it was crucial in the marketplaces since attitudes are able to determine loyalty or fidelity behaviors of customers towards brands, products, and services. To put it differently, despite the great facilities provided by Internet technologies, one of the biggest endeavors of the companies, serving online, is ability to obtain as much more customer as possible (Lu and Lin, 2002: 1-2).

3.4.2. Attitude

The reason of emergence of attitude as a quite well known concept has been associated with assumption that attitudes have some connections with behaviors (Wicker, 1969: 41). However, there has not been a common or globally accepted definition for the concept in spite of vast amount of researches conducted so far. The concept of attitude have generally been described in the scope of evaluation, affect, cognition, and behavioral inclinations (Olson and Zanna, 1993: 119). Likewise, Insko and Schopler (1967: 361-362) making remarkable contributions in accordance with the same idea, describe attitudes as "evaluative feelings of pro or con, favorable or unfavorable, with regard to particular objects". Also, they underline that "the objects are considered to be either concrete representations of things or actions, or abstract concepts". In the literature, among many other definitions, notion of attitude has also simply been defined as a reaction given to any object or premise stimulant. Whether or not that stimulant is visible, it is generally regarded an external and independent one (Breckler, 1984: 1191). In another definition, attitude has been characterized as assessment, which implies beliefs, decisions and opinions regarding any attitude object (Breckler and Wiggins, 1989: 253) of the person towards any entities (Ajzen and Fishbein, 1977: 889).

In fact, notion of attitude has been assessed along with the terms of ideology and value since they have some common characteristics. Accordingly, those three concepts (attitude, ideology, value) have been based on the structure of subjective, conscious or unconscious evaluations over different conditions and phenomenon. According to that

perspective, they are not independent from and affect each other. To generally compare those three notions, ideologies are considered as most intangible one which is followed by values straight after. Differing from two others, attitudes are distinctive as either being based on direct experiences (Doll and Ajzen, 1992: 754) or as being more tended to be compatible for both tangible and intangible circumstances. Formation of values, ideologies, and attitudes have been associated with and are claimed to be rested on the structure of beliefs, feelings and past behaviors (Maio et al., 2006: 283-292).

3.4.3. Relationship between attitude and behavior

The mystery of the relationship between attitudes and behaviors, and the degree to which attitudes may be an effective factor in the estimation of behaviors have been wondered and researched by academic environments for quite long terms. In the very previous studies such as La Piere (1934); Corey (1937) the idea of perfect or high level accordance between attitudes and behaviors have been objected while in some researches done by Allport (1935), Green (1954) attitude had been pointed out as a factor having consistency or potential of prediction regarding responses given to social objects (Fazio and Zanna, 1981: 162). Moreover, some other scholars such as Campbell (1950); Doob (1947); Fishbein and Ajzen (1974); Weigel and Newman (1976) attributed predictive characteristics as well to the attitudes describing the concept as effective element over behaviors.

In addition to above studies, some other researchers elicited similar results implying the presence of relationship between attitudes and behaviors. In accordance with that, in these studies such findings including *bilateral and causal connection* (Insko and Schopler, 1967: 374); *uncertain relationship* (Festinger, 1964: 417); *weak relationship* (Wicker, 1971: 29); *meaningful and predictive relationship* (Seligman et al., 1979: 78); *predictive relations in case of institutionalized and routinized circumstances* (Crespi, 1971: 327); *considerable relationship* (Goodmonson et al., 1971: 171); *attitudes are function of the evaluations creating meaningful relationship* (Fishbein and Coombs, 1974: 112); *significant relation* (DeFleur and Westie, 1958: 673); *attitude regarding an object is constantly relevant to multiple-act criteria while it has no regular relation with single-act criteria* (Fishbein and Ajzen, 1974: 59); *consistency between attitudes and behaviors rest on the perceived typicality of target person* (Lord et al., 1991) had been obtained.

As for the categorization of subjects, investigation of attitude-behavior relationship have been applied into and observed through different topic of studies including Wicker (1969) *attitudes of students concerning psychological experiments*; Kelly and Mirer, (1974); Fishbein and Coombs (1974) *voting behavior*; Seligman et al., (1979) *attitudes of home owners regarding their energy usage and electric consuming behaviors*; Goodmonson et al., (1971) *attitudes regarding organ transplantation*; Himelstein and Moore, (1963) *racial attitudes*; DeFleur and Westie, (1958); Warner and DeFleur, (1969); Linn, (1965) *relationship between verbal attitude and behavior*; Title and Hill (1967); Corey (1937) *relationship between attitudes and behaviors*; Fendrich, (1967); Bray, (1950); Kutner et al., (1952) *relationship between racial attitudes and behaviors*; Carr and Roberts (1965) *measurement of attitudes toward social action*; Freeman and Ataoev, (1960) *relationship between attitudes and cheating behaviors*; Potter and Klein (1957) *evaluation of relationship between maternal attitudes and behaviors*.

3.4.4. Relationship among attitude, intention, and behavior

Values, ideologies and attitudes have impacts on behaviors or formation of behaviors (Maio et al., 2006: 295). Beyond that, relation between attitudes and intentions is more determinative on behaviors. Accordingly, actions or behaviors can be predicted through attitudes as long as intentions and behaviors have meaningful or serious connections in between. In this regard, prediction of behaviors through attitudes is generally based on existence of consistency between the attitudes and behaviors for the objects in question. Thus, however, the idea has just been rested on intuitional base or foresights, if attitudes are positive for an object, people will behave in a positive way as well regarding same entity. In brief, according to one of the most acceptable conclusions can be drawn, in case there is not high and consistent relation between attitudes and behaviors, then correspondence between attitudinal and behavioral entities would be low and weak. In other words, prediction of behaviors inspecting attitudes are not easy unless detecting high correspondence and powerful relation in between (Ajzen and Fishbein, 1977: 888-913). On the other side, as for Fazio and Zanna's study (1981: 195), they elicited the results that despite the fact that there is not a perfect compatibility between attitudes and behaviors, attitudes still may provide meaningful contribution in the predictions of behaviors.

Besides, to examine the nature of the human behavior, it has been stated that behavior is a goal-driven act (Insko and Schopler, 1967: 364) so that most of the people behave in accordance with some purposes. In other words, nature of the human being has been tended to behave strategically one way or another. Thus, people act, in time, without making conscious tactics because they routinely get used to perform same behaviors. Whether or not people behave in daily routine without conscious actions, their behaviors still represent specific goals. In this regard, it is highly possible to conclude that intentions have strong dominance over actions and behaviors (Ajzen, 1985: 11).

3.5. Technology Acceptance Model (TAM) and Online Shopping Attitudes of Consumers

Regarding the inspection and prediction of behaviors, various theories have been elicited including *Theory of Reasoned Action* by Fishbein and Ajzen (1975); *Mode Model* by Fazio (1990); *Theory of Planned Behavior by Ajzen* (1985); and *Eagly and Chaiken's Composite Model* by Eagly and Chaiken (1992) [(Olson and Zanna, 1993: 131-133). However, in our study, only Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB) have been rewieved among four of these theories since TRA and TPB form the basis for *Technology Acceptance Model* on which this study rests on theoretically.

3.5.1. Theory of Reasoned Action

Advent of the *Theory of Reasoned Action* (TRA) came out in 1975 along with the purpose of prediction of behaviors, which emerge under the control of the will. According to theory, people act deliberatively so that they are generally aware of their behaviors and possible results. Besides, *intention*, which may change in accordance with involvement of new information, time or personal differences, plays a critical role while the actions are implemented. More specifically, intentions determine the direction of the behaviors so that if intentions change, behaviors change too. Furthermore, according to theory, intentions have been determined by two factors: personal and social influence. Accordingly, personal factor explains the attitude towards actions or behaviors since this factor represents the assessment of people regarding the implementation of the action or behavior in question. Moreover, factor of social

influence clarifies the subjective norms that people obtain as a result of the social enforcements or doctrines. In summary, theory tells that behaviors come out or are implemented by people in case they are regarded favorable either assessed in the scope of personal or social influence (Ajzen, 1985: 12-22).

This theory has been utilized in the scope of different research subjects by various scholars involving Norman and Tedeschi (1989) *adolescent smoking decisions*; Stasson and Fishbein (1990) *perceived risk of driving and intentions regarding seatbelt wearing*; Steffen (1990) *implementation of testicle self-exam*; Strader and Katz (1990) *nursing students' career*.

3.5.2. Theory of Planned Behavior

Theory of Planned Behavior (TPB) emerged in 1985 as extended version of TRA. It supposes that estimation of the behavior-oriented performances can be possible through inspection of the intentions and perceptions of control that people have for that behavior. On the other hand, TPB reveals three independent factors that determine intention. Accordingly, first factor is *attitude towards behavior* that stands for evaluation level of people as positive or negative towards subject behavior. The latter one is s*ubjective norm* that correspond to perceived societal oppression while implementing the behavior. The last but not least, *perceived behavioral control* has been named as factor which means perceived ease or hardness while implementing the behavior (Doll and Ajzen, 1992: 755).

Furthermore, theory suggests that actions and behaviors happen as a result of or being rested on well-organized plans. According to the theory, for the accomplishment of plan, people are supposed to have a reasonable plan as well as having other proficiencies such as sufficient ability, information, time, facilities and strength of will. In accordance with that, people would struggle to implement a behavior only if they think they have much more benefits in the case of accomplishment of the behavior than disadvantages in any failure (Ajzen, 1985: 36).

3.5.3. Technology Acceptance Model (TAM)

In the literature, it is possible to see different theories focusing on the explanation of user adoption and acceptance of new technologies. The theories among the most well-known are as follows: *Diffusion of Innovations* (Rogers, 1995), *Perceived*

Characteristics of Innovations (Moore and Benbasat, 1991; Plouffe et al., 2002) *Social Cognitive Theory, Theory of Reasoned Action, Theory of Planned Behavior, Technology Acceptance Model* (Davis, 1989; Davis et al., 1989), *Unified Theory of Acceptance and Use of Technology, Expectation Confirmation Theory* are the fundamental theories for the explanation of technology usage.

Among others, Technology Acceptance Model (TAM) seems as the mostly well-accepted theory (Agarwal and Prasad, 1999: 362). Advent of the TAM has been based on Theory of Reasoned Action (TRA), which has been put forward, by Fishbein and Ajzen in 1975. Being accepted as intention-based model, TRA has been regarded as very effective to explain human behaviors. For this reason, TRA has been considered as suitable for the researches of factors regarding computer usage behavior. Concerning user acceptance of information systems and computer usage behavior, Davis (1986) made a great contribution to the field with the introduction of Technology Acceptance Model (TAM). Davis's model (TAM) aimed to explain acceptance of information systems and computer usage behavior as an adaptation of TRA. However, compared to TRA, which is the theoretical foundation of TAM, TAM has been relatively more specific theory focusing just in the behaviors regarding acceptance of information systems and usage of computer technologies. The original TAM claims that *perceived usefulness* and *perceived ease of use* two main factors, which determine the computer acceptance behaviors (Davis et al, 1989: 983, 985).

Perceived Usefulness: This sub-dimension refers to the extent to which users considers that utilizing the technology in question may contribute to their performances positively (Ha and Stoel, 2009: 565; Venkatesh, 2000: 344).

Perceived Ease of Use: The sub-dimension representing the extent to which consumers expect that using a certain technology would be effortless (Ha and Stoel, 2009: 565; Venkatesh, 2000: 344).

What TAM basically suggests is that perceived usefulness and perceived ease of use may designate the behavioral intention of the users towards specific technologies so that final behavior would be formed accordingly. To put in order, perceived ease of use would affect perceived usefulness within the scope of usage of a certain technology (Venkatesh, 2000: 343).

Among the many previous researches conducted in the literture, TAM have been utilized and validated in the inspection of technology admission of users (Ha and Stoel,

2009: 565-566). From this point of view, many studies focused on the various technology acceptance patterns including *acceptance of telemedicine technology* Chau and Hu (2001); *acceptance of desktop video conferencing* Townsend et al., (2001); *acceptance of online games* Hsu and Lu, 2007); *adoption of email* (Huang et al., 2003); *acceptance of banking technologies* Dalcher and Shine, 2003); *acceptance m-commerce technology* (Bruner and Kumar, 2005).

Moreover, acceptance of information technology is a conspicuous issue, which has been investigated with great interest in recent times. Researchers care especially about usage and acceptance of those technologies by users. Accordingly, some theoretical approaches specifically study acceptance and usage of information technologies by users. Among them, Technology Acceptance Model (TAM) draws attention as one of the most prominent and commonly used approaches (Venkatesh, 2000: 342-343).

It is because TAM has been used so common in the researches regarding acceptance and usage of information technologies (Bhattacherjee and & Sanford, 2009: 389), Web sites, as mandatory interface for online shopping and an example of information technologies, can be regarded as in the research area of TAM. Accordingly, analysis of online shopping activities in the scope of TAM seems acceptable (Gefen et al, 2003:53-54). However, two fundamental components of TAM, *perceived ease of use* and *perceived usefulness*, had been extended by some researchers who worked in the area of online shopping since they believed that TAM would be insufficient in explaining the online shopping practices without extension (Yılmaz and Tümtürk, 2015: 360).

Hence, extended-Technology Acceptance Model (e-TAM) emerged as a commonly used model in analyzing online shopping behaviors of people. In this sense, e-TAM had been formed along with the new beliefs added by different studies based on e-commerce (Hernandez et al, 2009: 1233-1234). Accordingly, beliefs added include *Trust* and *Satisfaction* by Kim et al., (2003); *Perceived Benefits* by Davis (1989); Moore and Benbasat (1991); *Perceived Performance* by Davis et al, (1989); Davis (1989); *Confirmation* by Bhattacherjee (2001); *Familiarity and Trust* by Gefen (2000); *Satisfaction* by Spreng et al,. (1996); Fornell (1992); *Perceived Risk by* Kohli (1989); *Willingness to Purchase* by Mathieson (1991); *Trust* by Portz (2000); *Compatibility,*

Security, Privacy, Self-efficacy, and *Normative Beliefs* by Vijayasarathy (2004) who named this new model as "augmented or enhanced TAM".

Among the rising tendencies towards online consumption, detection of the factors that affect the attitudes of consumers regarding online shopping is getting harder. Therefore, it is believed that technology acceptance of the consumers may have some implications with regard to acceptance of online shopping by consumers it is because online shopping is an innovative method of retailing based on Internet and Web technologies. Hereunder, TAM may be regarded as a basis in the inspection of acceptance patterns of online shopping (Ha and Stoel, 2009: 565-566). Beyond that, considering the fact that many scholars including Kim et al,. (2003); Jarvenpaa, et al., (2000); Gefen, (2000); Spreng et al,. (1996); Kohli, (1989); Fornell, (1992); Portz (2000); Vijayasarathy, (2004) who examined online purchasing patterns taking e-TAM as the basis; e-TAM can be a groundbreaking solution in the prediction of consumption patterns towards online shopping.

3.5.4. Online shopping and varying consumer profile in the light of extended-Technology Acceptance Model (e-TAM)

Online shopping which provide products and services for customers via Web sites, can be defined as exchange process of time, effort and money to buy products and services (Chiu et al, 2009, s.348).

Consumers find online shopping as advantageous since they believe that this way of shopping enable them to save time and energy have suitable price, easiness and many different choices reaching to huge amount of information regarding products and services (Lin, 2007: 433).

3.5.4.1. *Online shopping in the distinction of online shopping attitude and behavior*

The relationship between attitudes and behaviors is a long-term discussion in which ability of attitude in the prediction of behaviors has been examined (Wilson et al., 1984: 5). In this regard, various researches have inspected the relationship between attitudes and behaviors or actions that include *examination relationship between attitudes and actions* by Wicker (1969); *measurement of attitudes and prediction of behaviors* by Tittle and Hill, (1967); *attitudes and prediction of behavior* by (Kraus, 1995); *prediction of behavior through attitudes* (Bray, 1950).

Beyond that, prediction of behaviors through attitudes have been correlated with some specific subjects which include *prediction of energy consumption through the attitudes of home owners* (Seligman et al., 1979); *measurement of the relationship verbal attitudes and behaviors regarding racial discrimination* (Linn, 1965); measurement *relationship between attitudes and human organ transplantation* (Goodmonson and Glaudin, 1971); o*bservation of relationship between attitudes and cheating behavior* (Freeman and Ataoev, 1960); *Analysis of relationship between attitudes and voting behavior* (Fishbein and Commbs, 1974);

On the other side, regarding consumers' attitude towards shopping, many researches have been done such as *attitude of consumers towards tablet self-service for fashion retailing* by Chandrawati and Lau (2016); Li and Zhang (2002); *consumers' attitudes towards online shopping* by Liao and Cheung (2001*)*; Al-Debei et al., (2015); Shergill and Chen (2005); *generational differences of male attitudes and orientations toward shopping* by Funches et al., (2017); *attitudes of consumers in the scope of trust to a Web site* by Martin and Camarero (2008);

Furthermore, variations among generations regarding shopping have been examined by diverse researches including *generational differences in household apparel expenditures* by Norum (2003); *differences of generations towards mall attributes and shopping value* by Jackson et al. (2011); c*omparison of generation Y and Baby Boomer regarding shopping behavior* by Parment (2013); *generation millennials and e-commerce* by Puwalski (2010); *generational comparison regarding shopping orientations* by Broshdal and Carpenter (2011); *comparison of Czech Republic and Slovakia in terms of generation Y and its attitudes towards online shopping* by Krbova (2016). Besides, regarding examination of consumers' e-commerce or online shopping acceptance some remarkable studies came out including *e-commerce adoption* by Gefen and Straub (2000); Ahn and Lee (2001); *e-shopping acceptance* by Ha and Stoel (2008); *Web retailing adoption* by O'Cass and Fenech (2003).

Simply put, online shopping is a multi-phased structure in which consumers are first supposed to embrace Internet as the shopping medium. Thereafter, phase of consumer attitude comes which represent view of consumers towards a certain Internet store. The next stage is consumer intention, having positive relationship with consumer attitude, which refers to eagerness to buy or to make extra purchases. Moreover, online shopping decision making is another step which directly affect phase of purchasing

behavior that ends with ordering and making payments for specific goods and services (Li and Zhang, 2002: 512-513).

To differentiate online shopping attitude and behavior which are the important phases of online shopping process in terms of the implications of this study intended to be revealed, the processes in which goods and services are purchased by means of Internet technologies have been described as *online shopping behavior*. In such a process, consumers act towards shopping as a result of noticing needs for some specific goods and services (Javadi et al., 2012, 81-82).

However, *online shopping attitude* implies psychological state of mind of consumers regarding purchasing action of them via Internet. The importance of the consumer attitude is that it has remarkable impact over intentions towards online shopping, which determines online shopping decision making as positive or negative. Afterwards, final behavior "online purchasing" or "online purchasing transaction" appears if consumers are satisfied with the goods and services they are interested. In this sense, satisfaction of the consumers, defined as degree that perceptions of consumers regarding online shopping experience meet their expectations, determine the direction of all other phases of this structure (Li and Zhang, 2002: 508-513).

3.5.4.2. *Technology orientation of the consumers and acceptance of online shopping*

Cultural perceptions and social structures are quite influential in the formation of technologies in everyday life. Likewise, technological formations transform societies and daily life practices (Ropke, 2001: 413). Typical society definition of the present times varies as involving *post-industrial or post-modern, late capitalism or information, consumption, electronic or digital societies*. Common characteristic of these societies is that they are all formed through and surrounded by communication, consumption and technology-oriented factors (Aksoy, 2010: 48).

As the area of usage of Internet technologies expand, variety of activities made through it diversifies. Accordingly, people make use of Internet technologies along with range of intentions such as source for having information, entertainment, for building career, social status, and education or for business establishment (Lissitsa and Kol, 2016: 305). Hereunder, Internet, nowadays, has been commonly used in business activities as well meeting business organizations and consumers in virtually-designed common marketing environments. Regarding the predictions of future online shopping

patterns, good comprehension of such Web-based purchasing activities matters (Swaminathan, 1999: 1-2).

In recent terms, Internet has become a huge global market in which various and great amount of goods and services have been provided. Thus, major e-commerce environments emerged. Business to consumer (B2C) is a commonly used e-commerce method by consumers who benefit from such practices along with various purposes such as inspection of prices and reviews of the goods, selection of goods and services, making orders and payments. B2C channels dominate the modern business world meeting consumers with countless online stores, brands, goods and services (Javadi et al., 2012, 81).

In this respect, one of the mostly utilized fields of Internet is online shopping for which Internet adoption of people is quite essential (Lissitsa and Kol, 2016: 305). Internet technologies take part right in the center of online sopping activities. Companies utilize this technology intending to reduce marketing costs, distribute information, get feedback, conduct scales and sell products. Likewise, consumers benefit from the Internet to compare prices, delivery conditions, and characteristics of the product, to purchase product and services and so on (Shergill and Chen, 2005: 79-80).

However, compared to old times, new consumer profile differ from traditional ones since they benefit from high technologies such as cable TV, network, satellite and Web technologies, phones as daily basis (Babaoğul and Bener, 2010: 106). Moreover, shopping tendencies and habits of the consumers are quite changeable. Online shopping represents a new era in which traditional shopping manners are not enough to make inferences regarding online shopping patterns which leads to conduct further researches over consumers' approaches towards online shopping (Wang et al., 2007: 297).

As the electronic commerce came out as a Web-based shopping formation, security issues had been involved among concerns of the consumers (Jarvenpaa, et al., 2000: 45-46). In this respect, compared to the traditional commerce activities, issue of Trust matters by far in electronic commerce patterns since commerce practices, based on Internet technologies, rely on confidence of the consumers more than ever. Accordingly, consumer trust plays and important role in the intention towards purchasing and formation of purchasing decision (Kim et al., 2003: 353).

In addition, satisfaction matters because it forms the post-purchasing feelings of the consumers. Accordingly, those feelings emerge in the comparison processes of goods and services purchased referring to the degree to which whether the expectations and desires of consumers have been met or not. Also, satisfaction encompasses feelings regarding information obtained in the communication processes with suppliers (Spreng et al,. 1996: 15).

On the other side, usefulness, ease of use, compatibility, privacy and security are important in terms of online shopping patterns as well. More specifically, usefulness represent the degree to which consumers consider they would reach to helpful information, be able to compare goods and services, and do shopping activities in a faster way through online shopping. To put it simply, consumers would react in a positive way towards online shopping if they believe that online-based purchasing activities are useful for them. As for *ease of use* that determines the perspective of the consumers towards perceived usefulness, it refers to the degree to which consumers think that online shopping would be effortless activity. In other words, if consumers believe that online shopping is easy enough, they will use it.

Additionally, compatibility is a sign that displays adaptation degree between online shopping and shopping preferences, lifestyle, and demands of the consumers. This means that if consumers are convinced that online shopping will meet their need, then they will act positively towards it. Besides, privacy refers to the degree to which consumers consider that their private issues would be concealed during online shopping activities. In accordance with that, if consumers believe that their personal secrets will be kept as confidential, then their reaction will be positive towards it. Lastly, when it comes to security, it represents the degree to which consumers think that online payment would be safe. To put it differently, consumers look for a guarantee for secure payment transactions that will lead them to buy online (Vijayasarathy, 2004: 750-751).

Beyond that, the fact is that people with younger ages use online environments much more than older ones as using chatting, instant messaging, entertainment, surfing, obtaining information or downloading of music. Besides, older people mostly use these technologies in job seeking, reaching government sites and so on. As a result, different age groups of people have different intentions of Internet usage (Hargittai and Hinnant, 2008: 604).

Likewise, compared to women, men have more interest in technology and been regarded as more active users of it. On the other side, usage of Web technologies, as one of the most important information technologies, are believed to be as another differentiation area where women and men may reflect various usage patterns (Slyke et al., 2002: 83-85).

Considering the fact that Web technologies become vital trading channel for business organizations, which use infrastructure of Web technologies, online shopping practices are need to be analyzed by marketers in terms of the attitudes and behaviors that consumers have towards this Web-based shopping style. Business organizations need that investigation since they are supposed to form their strategies such as online advertising, design of Web sites, product variety or segmentation of the market according to attitudes and behaviors of the potential customers towards online shopping (Theo, 2002: 259-260).

CHAPTER FOUR

4. METHOD

This section provides the model of the research, population and sample, data collection instrument, data gathering and data analysis.

4.1. Research Model

The purpose of this study is to elicit whether the attitudes of generations Y and Z towards online shopping differ in the context of extended-Technology Acceptance Model (e-TAM). In accordance with this purpose, theoretical framework of our research is based on the study of Vijayasarathy (2004). As mentioned before, the researcher combined core factors of TAM with normative beliefs that is an important element of Theory of Reasoned Action (TRA) and self-efficacy which is one of the key component of Theory of Planned Behavior (TPB) to predict people's intention to do online shopping. The Figure 4.1 describes the model of Vijayasarathy.
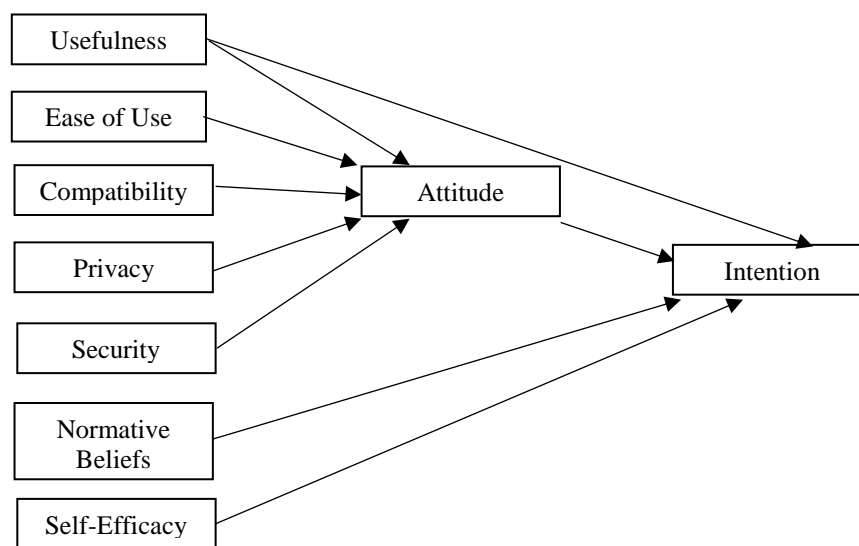
Figure 4.1. *Research model of Vijayasarathy (2004)*

The Figure 4.1 indicates that usefulness, ease of use, compatibility, privacy and security are dimensions of attitude towards online shopping whereas usefulness, normative beliefs, self-efficacy, and attitudes are sub-dimensions of intention to online shopping. In our research, we focused on the consumers' attitudes regarding sub-dimension of e-TAM. Therefore, we paid attention to Vijayasarathy's model related to attitude. The Figure 4.2 displays our research model.
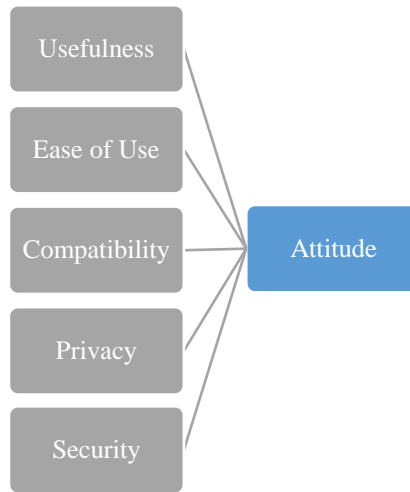
Figure 4.2. *Research model*

In our model, we define usefulness as the consumers' subjective probability that usage of technology affects attitudes to doing shopping (Davis, 1986). We describe ease of use as the degree to which the consumers anticipate the Internet to be free of effort through shopping (Davis, 1989). In our model, compatibility refers overlapping of doing online shopping with existing potential consumers' ideas and need (Moore and Benbasat, 1991). Privacy is related to consumers' beliefs in the protection of privacy (Vijayasarathy, 2004). Security addresses consumers' beliefs in the security of online payment (Vijayasarathy, 2004). The final variable of the model is attitude that is considered as consumers' ideas about online shopping (Ajzen and Fishbein, 1980). In conclusion, our model proposed that usefulness, ease of use, compatibility, privacy and security are sub-dimensions of attitude towards online shopping in the light of e-TAM.

4.2. Population and Sampling

The research population is composed of college and undergraduate students of Anadolu University and Eskişehir Technical University. Number of students who registered in 2018-2019 academic year is provided in the respective Web sites of the universities. Table 4.1 displays the number of enrolled students regarding their faculties and gender. As seen in Table 4.1 the research population is composed of 28881 college and undergraduate students.

Table 4.1 *Research population*

	Faculty	Female Students	Male Students	Total
Anadolu University	Faculty of Economics and Administrative Sciences	1766	2486	4252
	Faculty of Education	2430	1406	3836
	Faculty of Communication Sciences	677	870	1547
	Faculty of Fine Arts	386	374	760
	Faculty of Pharmacy	497	316	813
	Faculty of Humanities	1147	1005	2152
	Faculty of Law	984	967	1951
	Faculty of Health Sciences	307	109	416
	Faculty of Tourism	274	454	728
	State Conservatory	122	107	229
	School for the Handicapped	64	64	128
	Eskişehir Vocational School	316	460	776
	Yunus Emre Vocational Health School	528	152	680
	Total	**9498**	**8770**	**18268**
Eskişehir Technical University	Faculty of Science	763	642	1405
	Faculty of Aeronautics and Astronautics	186	812	998
	Faculty of Architecture and Design	1097	457	1554
	Faculty of Engineering	1245	2050	3295
	Faculty of Sport Sciences	255	515	770
	Porsuk Vocational School	306	884	1190
	Vocational School of Transportation	305	1096	1401
	Total	**4157**	**6456**	**10613**
Total		**13655**	**15226**	**28881**

In this research, we used purposive and convenience sampling methods that are commonly used as nonprobability sampling methods. In the purposive sampling method, the research participants might be chosen because of having similar or different characteristics (Vogt, 2007:81). On the other hand, in the method of convenience sampling, also defined as opportunity sampling, researchers study with individuals who are easy to be reached along with economically affordable ways in a shorter period of time (Cresswell, 2013:158).

The research sample included preparation school students and senior students (fourth class of university students). Preparation school students are generally at the ages of 18-20 while senior students are generally at the age of 23 and older. In other words, senior students generally belong to generation Y because they were born in the period of 1981-1998 (Alch, 2000:43; Smola and Sutton, 2002: 365; Sessa et al., 2007:51) while preparation school students represent generation Z because they were born in the period of 1999-2009 (McCrindle and Wolfinger, 2009:64; Tulgan, 2013). In our research, we eliminated the preparation school students and senior students who are not in the respective age range. We determined the sample by purposive sampling and

convenience sampling method. Because of the fact that sample of our research, belong to same sub-group of society having similar income, education level and socio-economic conditions. On the other hand, the research sample, who were students in Anadolu University and Eskişehir Technical University, were easy to be reached. In our study, we collected data from 652 preparation school students and 532 senior students. However, 101 preparation school students were in older ages than 20 and 19 senior students were in younger ages than 21. Therefore, we eliminated 120 students from our sample. In addition, 34 students were excluded because whose scales were not filled out properly. In this case, our sample decreased to 1030 students. Table 4.2 displays the information of the sample.

Table 4.2. *Demographic information of research sample*

| UNIVERSITY | FACULTY | GENERATION | GENDER | | TOTAL |
			Male	Female	
Anadolu University	Pharmacy	Y	15	21	36
	Humanities	Z	6	5	11
		Y	16	6	22
	Education	Z	5	14	19
		Y	26	43	69
	Fine Arts	Z	0	3	3
		Y	12	25	37
	Tourism	Z	4	2	6
		Y	34	17	51
	Law	Z	0	3	3
		Y	29	23	52
	Economics and Administrative Sciences	Z	54	38	92
		Y	67	52	119
	Communicational Sciences	Z	21	32	53
		Y	3	0	3
	Health Sciences	Z	1	3	4
Eskisehir Technical University	Sports Science	Y	33	9	42
	Vocational School of Transportation	Z	6	12	18
	Aeronautics and Astronautics	Z	34	11	45
	Architecture and Design	Z	7	36	43
	Engineering	Z	122	75	197
		Y	1	0	1
	Science	Z	28	27	55
		Y	12	37	49
	Total	Z	288	261	549
		Y	248	233	481

Table 4.2 presents that of the total sample, 536 are male, 494 are female. In addition to this, 549 students belong to generation Z, 481 students belong to generation Y. What's more, 580 are students of Anadolu University, 450 are students of Eskisehir Technical University. Ages of students who belongs to generation Z are ranging between 17 and 20. Their age average is 18,91 (sd= 0,764). On the other hand, the age of generation Y is varying between 23 and 34 and their age average is 23,77 (sd= 1,524). Family income rate of students belong to generation Z is ranging between 1.800 and 18.000 Turkish Liras (TL) and the average of their family income rates is TL 4.768,20 (sd= 2450,075). In addition to this, students' income rate is varying between TL 500 and 3.000 and its average is 903,80 (sd= 425,452) Turkish Liras. On the other hand, family income rate of students belong to generation Y is varying between TL 1.800 and 20.000 and its average is 4.921,05 (sd= 2972,850). Furthermore, students' income rate is varying between TL 500 and 6.500 and its average is TL 1.152,51 (sd= 425,452). When we examine the family income rate of students belonged to generation Y and Z, we can infer their families' income rate are similar. However, their own income rate is quite different.

4.3. Data Collection Instrument

To collect data, we adapted the scale developed by Vijayasarathy in 2004 to better reflect the individuals' attitudes towards online shopping. This part summarizes adaptation process of the original scale.

4.3.1. The original scale

The original scale items, provided in Appendix B, composed of three sections: The first section included 19 items (seven-point Likert type; 1-strongly disagree; 7-strongly agree) having eight sub-scales, which are usefulness, ease of use, compatibility, privacy, security, attitude, self-efficacy and intention. The usefulness, ease of use and intention sub-scales have three items while other five have two items. In addition, there are three formative items to evaluate normative beliefs. For these items, respondents are expected to identify three people who are special and valuable for themselves. Then they rank options which vary from 1 (very unlikely) to 7 (very likely) for each determined individuals whether they advise online shopping or not.

The second section of scale has six items to evaluate Internet use. Three of them are multiple-choice question and the other three are open-ended questions. The final section of the scale composed of five items that are multiple-choice question.

Vijayasarathy developed the scale in four stages.

- In the first stage, the researcher formed item pool related to online shopping regarding TAM, TRA and TPB.

- The second stage was pretesting the scale. The 52 individuals, who were academicians, students and other consumers, responded to scale. Based on their feedback on items and length of the questionnaire some items in the scale were eliminated.

- The third stage was pilot study. The pilot sample composed of 30 individuals.

- In the fourth stage, researchers collected scale from 260 individuls. Nine of them were blank or incomplete. Therefore, nine of them were dropped and the remaining 251 scales and 30 scales from the pilot study were combined. For convergent and discriminant validities, principal component analyses (PCA) yielded a 8-factor solution with 17 items (one of the usefulness items and one of the ease of use items were dropped). The scale explained 80.2% of the total variance. For reliability analyses, Cronbach's alpha scores were calculated for each sub-scales (α_{use} =.87; $\alpha_{ease.}$ =.88; α_{comp} =.94; α_{pri} =.80; $\alpha_{sec.}$ =.90; $\alpha_{attitude}$ =.92; $\alpha_{efficacy-}$ =.84; $\alpha_{intention.}$ =.88). The analyses showed that all sub-scales of the scale and the whole scale was reliable.

4.3.2. Scale adaptation process

There is no appropriate scale regarding e-TAM that is prepared in Turkish to collect data. Using a scale without any adaptation to a local culture may produce unreliable outcomes because of differing cultural context. Furthermore, if the original scale is well-proven and have a high score for reliability and validity, a culturally and linguistically adapted scale to a different culture may still contribute to the literature substantially. Online shopping is a universal theme so the attitude towards online shopping might be similar in different cultures. After a thorough investigation we decided to adapt a scale developed by Vijayasarathy.

The scale is appropriate with our research purpose. Therefore, first we got permission of the author (see Appendix C). Then we followed the steps in Figure 3.3. We combined the strategies suggested by Harkness, Villar, and Edwards (2010) and Hambleton and De Jong (2003) to adapt a scale.
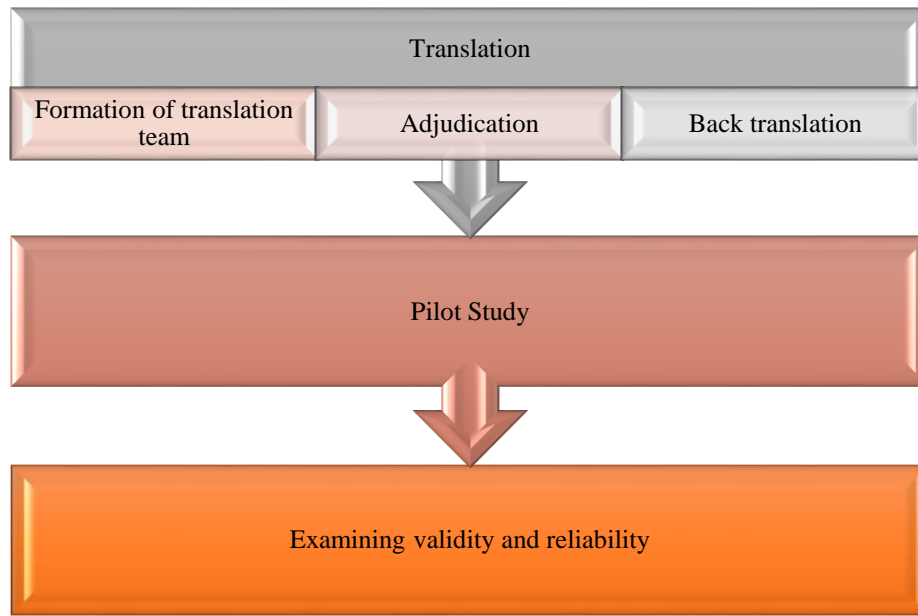
Figure 4.3. *Scale adaptation process*

4.3.2.1. *Translation*

Translation is the most crucial part of the adaptation process. Because of the fact that in this part, items are adapted from source language to target language. A well-organized team translation might built a quality checks and integrate all refinement to arrive a good translation (Harkness, Villar and Edwards, 2010:125). Therefore, we formed a team to translate scale. The team consists of two scholar from the field (researchers of this study) and three other doctorate students who speak English as native studying in Turkey. One of the researchers, as being independent from others, has implemented the first translation of the scale. Afterwards, three post-graduate students translated the scale from English to Turkish. Later on, advisor of the research translated the scale to target language. Two researchers have benchmarked all versions of translations and reorganized accordingly. In other words, adjudication process of scale has been completed. In the last part of translation, back translation session has been performed. The target scale text is translated back into the source language as

English. The differences between the two source language versions are compared. Both of the versions have the same text. In other words, back translation showed that the translation process meet the language validity of the scale. Finally, we completed the translation process and formed the scale in target language. Then we conducted the pilot study.

4.3.2.2. *Pilot study*

The pilot study has been conducted with freshman, sophomore and junior students (first, second and third year students) in the fall semester of 2018-2019 academic year in two weeks.The pilot study included 360 undergraduate students at Anadolu University and Eskişehir Technical University. However, 10 responses were eliminated because of insufficient data. Table 4.3 displays the information of the pilot group. Of the total students, 173 are female, 177 are male; 38 are first year, 111 are second year, and 201 are third year students. 278 students are registered to Anadolu University, and 72 are registered to Eskisehir Technical University. Students' age is ranging between 18 and 53 and their age average is 21 (sd= 2.45). Student' family income is varying between 2020 and 18000 Turkish Liras. The average of family income is 4924 Turkish Liras (sd= 1829,47). Students' family income rates vary to a great deal. However, 171 participants whose family income rate is under mean. What's more, 119 students' family income is approximately 5000 Turkish Liras. In this case, we can infer that students' family income rates is more or less homogeneous. On the other hand, students' income is ranging between 150 and 5000 Turkish Liras. The average of student income is 1010 Turkish Liras (sd= 572,08). When we analyzed the frequency of students' income rates, it can be concluded that students' income rates is more or less homogeneous. In conclusion, our pilot sample is similar characteristics such as societal status and having similar income.

Table 4.3 *Demographic information of pilot sample*

| UNIVERSITY | FACULTY | CLASS | GENDER | | |
			Female	Male	Total
Anadolu University	Pharmacy	2	5	0	5
		3	21	11	32
	Humanities	2	1	0	1
		3	1	0	1
	Education	2	2	1	3
		3	5	2	7
	Fine Arts	2	3	3	6
		3	1	1	2
	Tourism	2	5	5	10
		3	3	3	6
	Law	3	12	7	19
	Economics and Administrative Sciences	2	8	14	22
		3	39	36	75
	Communicational Sciences	1	21	17	38
		2	7	8	15
		3	15	16	31
	Health Sciences	3	1	0	1
Eskisehir Technical University	Sports Science	2	1	8	9
		3	0	1	1
	Vocational School of Transportation	2	0	1	1
		3	0	4	4
	Aeronautics and Astronautics	2	0	2	2
		3	0	2	2
	Architecture and Design	3	2	0	2
	Engineering	2	0	8	8
		3	4	20	24
	Science	2	7	3	10
		3	9	4	13
	Total	1	21	17	38
		2	51	60	111
		3	101	100	201

Within the scope of pilot study, confirmatory factor analysis was implemented to examine validity of scale. Moreover, Cronbach's Alpha was calculated in order to examine reliability of the scale. First, the results of exploratory factor analyses are shared and then the results of reliability analysis are presented in this part.

4.3.2.3. *Examining validity and reliability*

4.3.2.3.1. *Validity of the adapted scale*

Our research model, which includes usefulness, ease of use, compatibility, privacy and security sub-dimensions of attitude towards online shopping, is examined with confirmatory factor analysis. In other words, the structure of scale consists six factors

with fourteen items tested with confirmatory factor analysis. The analysis was carried with 350 participants who included in pilot study by Lisrel 9.1 program.

We checked the suitability of the data for factor analysis before performing confirmatory factor analysis. The preliminary analyses of factor analyses are as follows: missing values, normality, linearity, outliers, sample size, multicollinearity and singularity (Çokluk, Şekercioğlu, and Büyüköztürk, 2010: 205).

First, we explored missing values with descriptive analyses. Of the total pilot sample, five students did not respond some questions in the scale. The number of missing values was under the 5 percent of sample. Therefore, these participants' scales were excluded from the analyses (Tabachnick and Fidell, 2012: 63).

Second, we examined normality, one of the preliminary analyses of factor analysis. To examine normality we analyzed Q-Q plots and box plots. These graphs displayed normal distribution for all items. In addition to this, skewness and kurtosis values were analyzed for normality. It was found that skewness values range between -1.69 and 1.22 while kurtosis values vary between -.94 and 2. According to Trochim and Donnelly (2006:48) if these values range between -2 and +2, the data is normally distributed. The analyses were performed to ensure no violation of the assumption of normality.

Third, the linearity assumption was tested with scatter plot matrices. For this assumption the relationship between the two variables could be linear. Because of the fact that the shapes in the matrix formed by the variable pairs are close to the ellipse, there was no violation of the linearity assumption (Pallant, 2005: 118).

Fourth, outliers in multivariate situations were examined. In or der to determine multivariate outliers, Mahalanobis distance and Cook's distance values were examined. Tabachnick and Fidell (2012: 952) purported that the critical value for 14 variables is 36.123 (p <.001). The responses of 19 students were excluded from the data because of having higher Mahalanobis distance value than the critical value. Pallant (2005: 152) declared that cases with larger than 1 for Cook's distance is a potential problem about being outliers. In our study, the maximum value for Cook's distance is .03, suggesting no major problems. In order to identify multivariate outliers items score were transformed to z score. Tabachnick and Fidell (2012:760) remarked that the cases whose z scores are out of between -3.3 and +3.3 are outliers. Therefore, we excluded 85 students' response from the data set.

Fifth, we queried the appropriateness of research sample size for factor analysis. After eliminating outliers from our data, the sample size decreased to 241. According to Kline (1993:74), to do factor analysis, the ratio of sample size to variables should be 10. In our research the ratio of sample size to variables (241/14 > 10) was higher than 10. In addition, Kline claimed that samples of 100 are quite sufficient for factor analysis. In this case, we could declare that our sample size was appropriate to perform confirmatory factor analysis.

Finally, multicollinearity and singularity assumption were analyzed. Multicollinearity occurs when the variables are highly correlated. Singularity exists when the correlation between two variables is 1 (Pallant, 2005:142-143). For the assumption of multicollinearity and singularity, firstly correlation coefficients were analyzed. According to Pallant (2005: 179), most of these variables could be higher than .30 for factor analysis. The correlation coefficients of all items varied between .043 and .758. On the other hand, most of them were above .30. In this case, we can infer that there is no violation assumption of multicollinearity and singularity assumption and the data was suitable for factor analysis. Besides, tolerance values and variance inflation factor (VIF) values were analyzed to assess multicollinearity. The tolerance values ranged between .216 and .507. The VIF values varied between 1.973 and 4.627. Tolerance values were greater than .10 and VIF values were less than 10 so we can imply that there is no problem in the context of multicollinearity (Akbulut, 2010:75).

After the performed analyses ensures no violation of the assumption of preliminary analysis, confirmatory factor analysis was conducted in two phases namely evaluating the measurement model and evaluating the structural model. The concern in evaluating measurement is whether latent variables (usefulness, ease of use compatibility, privacy, security and attitude) are adequately caught by observed variables (14 items in scale) or not. On the other hand, the focus of the evaluating the structural model phase is whether our research model fit the data or not.

In the evaluating the measurement model, firstly t values, which related latent are adequately caught by observed variables, were analyzed. These values exceeded the critical value (2.56) and were significant (p<.01) in the model (Çokluk, Şekercioğlu and Büyüköztürk, 2010: 304). Then we assessed the model by looking at χ^2 and we found that the independence model and hypothesized model were significantly different ($\chi^2(72)= 221.28$, p < .01). In the confirmatory factor analysis a nonsignificant $\chi2$ is

desired. However, this values depends on sample size so other fit indices should be taken into consideration (Tabachnick and Fidel, 2007:695).

Furthermore, error variance of variables was examined. For the scale of usefulness the error variance of three items as .29, .24 and .36. For the scale of ease of use, the error variance of three items as .65, .45 and .18. For the scale of compatibility error variance of two items were .20 and .11. For the scale of privacy error variance of two items were .00 and .47. For the scale of security error variance of two items were .33 and .07. For the scale of attitude error variance of two items were .20 and .15.

In sum, error variance of all items except the first item of ease of usefulness was small as expected. Then the modification indices were analyzed. If the first item of ease of use scale was excluded, there is a high decrease in $\chi 2$, which means that the model would be better. Furthermore, when we excluded this item, the good of fitness would be better than before. In addition, this item's factor loading was .60 that was acceptable. However, other item's factor loading was greater than .80. We can infer that this item was more problematic than others were. What's more, if we exclude this item, the value of Cronbach's alpha decreases from .907 to .896. In fact, decreasing in Cronbach's alpha is not desired. However, the decreased value is high and acceptable. In the original scale, this item was also dropped because of having small factor loadings. Therefore, we excluded this item from our sample and performed the confirmatory factor analysis again. We analyzed firstly t values exceeded the critical value (2.56) and were significant (p<.01) in the model.). Then we assessed the model by looking at $\chi 2$ and found that a significant improvement in fit between the independence model and hypothesized model ($\chi^2(60)= 123.28$, p < .01) because of decrease in $\chi 2$. We again examine the error variance again and found same values that mentioned previously. In addition to this, we also analyzed the suggestions of modification. However, in this case, there was not a significant change. Therefore, we did not any modification because of having adequate good of fit indices.

Overall, the results for the six factors with 13 items structure model of attitudes towards online shopping supported. The path diagrams of the model, including factor loadings, error variance and factor covariance were displayed in Figure 4.1. As seen in the Figure 4.4, the final scale included 13 items measuring six factors termed as usefulness, ease of use, compatibility, privacy and security and attitude.

Usefulness sub-scale was measured by three items whereas the rest of them (ease of use, compatibility, privacy and security and attitude) were measured by two items. All items in the scale have high factor loadings and low error variance. We can infer that all items contribute to scale. In other words the validity of scale was proven with confirmatory factor analysis. What's more, in the model usefulness, ease of use, compatibility, privacy and security are sub-dimensions of attitude and the model was validated by results of confirmatory factor analysis.

Chi-Square=123.28, df=60, P-value=0.00000, RMSEA=0.066
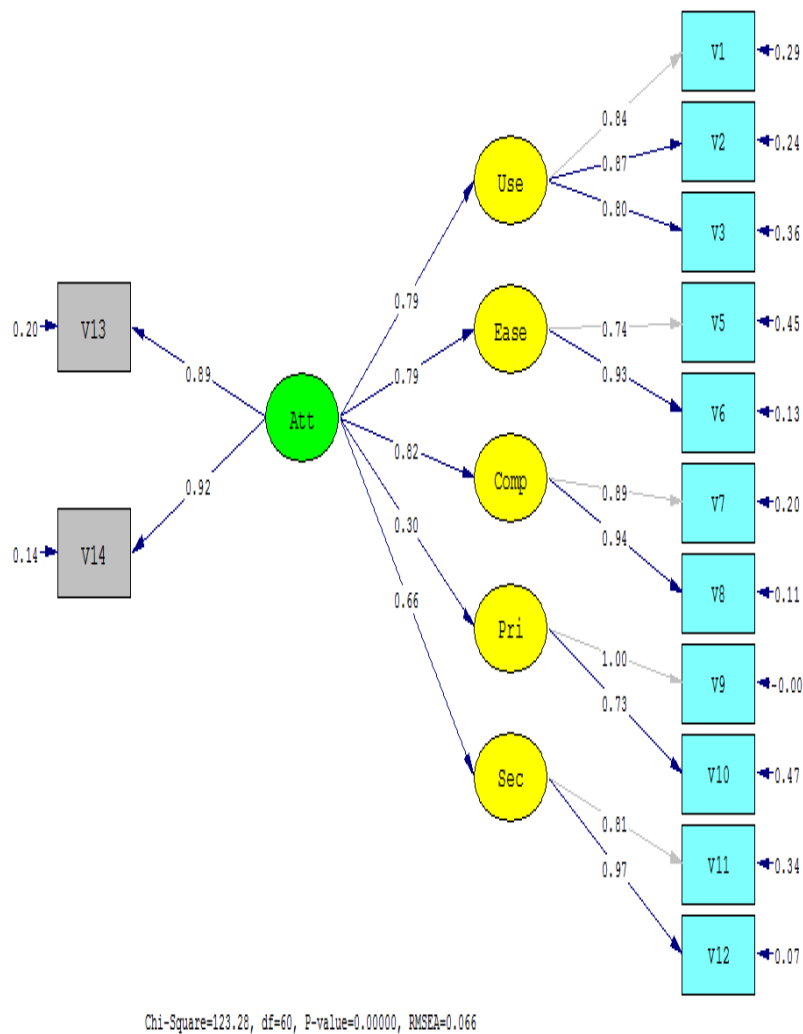
Figure 4.4. *Path diagram of the final 13-item-six-factor structure model*

In the evaluation of the structural model, we investigate whether our research model fit the data or not by assessing good of fit indices. To evaluate the structural model there are many good of fit indices in the literature. However, there has not been a consensus on which good of fit indices should be interpreted to evaluate model. For

example, Brown (2006: 113) claimed that RMSEA, SRMR, CFI and NNFI values must be reported for the evaluation of model. On the other hand, Şencan (2005: 412-413) suggests assessing chi-square, GFI, AGFI and PGFI values. According Kline (1993: 161) the reported good of fit indices values could be determined with respect to research aims. In our research, we examined the commonly used good of fit indices. Table 4.4 displays the results and limitations of good of fit indices.

Table 4.4. *The statistics of goodness of fit*

Index	Findings	Cut-point	Judgement	Source
χ^2	123.28; p>.05			
χ^2 /df	2.05	$0 \leq \chi^2$ /df ≤ 3	Perfect fit	Kline (2005)
RMSEA	.06	$0 \leq$ RMSEA ≤ 0.06	Good fit	Thompson (2004)
RMR	.09	$0 \leq$ RMR ≤ 0.10	Poor fit	Byrne (1994)
SRMR	.05	$0 \leq$ SRMR ≤ 0.05	Perfect fit	Brown, 2006
NFI	.97	$0.95 \leq$ NFI ≤ 1.00	Perfect fit	Hu and Bentler (1999)
NNFI	.98	$0.95 \leq$ NNFI ≤ 1.00	Perfect fit	Hu and Bentler (1999)
CFI	.99	$0.95 \leq$ CFI ≤ 1.00	Perfect fit	Thompson (2004)
GFI	.93	$0.90 \leq$ GFI ≤ 0.95	Good fit	Tabachnick and Fidell (2007)
AGFI	.90	$0.90 \leq$ AGFI ≤ 0.95	Good fit	Tabachnick and Fidell (2007)

As seen in Table 4.4, five indices including χ^2 /df, standardized root mean square residual (SRMR), normed fit index (NFI), non-normed fit index (NNFI) and comparative fit index (CFI) showed perfect fit. In addition to this, the root mean square error of approximation (RMSEA) value was calculated as .06 that indicate a good fit. Goodness of fit index (GFI) and adjusted goodness of fit index (AGFI) values were larger than .90 so they indicates a good fit. Root mean square residuals (RMR) was equals to .10 that is typically considered poor but acceptable. The most of the values of all indices met goodness-of-fit standards and the results indicated that the model, which proposed usefulness, ease of use, compatibility, privacy and security are sub-dimensions of attitude, is well fitted.

4.3.2.3.2. *Reliability of the adapted scale*

As mentioned before, the scale consists of 13 items and 6 subscales. All subscales, except usefulness, have two items. Although it is generally claimed that a subscale must have at least three items, having two items for a subscale is acceptable (Worthington and Whittaker, 2006). In order to examine the reliability of scale and its subscales, we

considered the internal consistence with Cronbach's alpha. Table 4.5 displays the results corrected item-total correlation, Cronbach's alpha if item deleted and Cronbach's alpha.

Table 4.5. *The scale's and subscales' reliability analysis*

N = 241	Items	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
Scale	V1	,663	,887	
	V2	,604	,889	
	V3	,584	,889	
	V5	,539	,891	
	V6	,655	,885	
	V7	,682	,884	
	V8	,714	,882	,896
	V9	,379	,901	
	V10	,284	,905	
	V11	,607	,888	
	V12	,671	,885	
	V13	,799	,880	
	V14	,820	,877	
Usefulness	V1	,746	,839	
	V2	,821	,778	,876
	V3	,728	,861	
Ease of Use	V5	,666		,797
	V6	,666		
Compatibility	V7	,833		,909
	V8	,833		
Privacy	V9	,724		,839
	V10	,724		
Security	V11	,787		,881
	V12	,787		
Attitude	V13	,834		,906
	V14	,834		

As noted before, according to Vijayasarathy (2004), all subscales of the scale has a good internal consistency, with a Cronbach alpha coefficient reported of higher than .80. In the current research as seen in Table 4.5 for the whole scale Cronbach alpha coefficient was .896. According to Pallant (2005: 90) the ideal value for Cronbach alpha is .70. Therefore, we can say the internal consistency of scale is high. On the other hand, if all items, except item 9 and 10, are excluded from the scale, the Cronbach alpha coefficient decreases. Omitting item 9 and 10 does not cause a dramatic increase in the Cronbach alpha coefficient. These findings are indicators of the internal consistency

(Akbulut, 2010: 81). In addition to this, all items' corrected item-total correlations values ranged between .284 and .820. This findings show that all items were related to each other and the scale. Moreover, the Cronbach's alpha coefficient of all subscales was higher than .70 (α_{use} =.876; α_{ease} =.797; $\alpha_{comp.}$ =.909; $\alpha_{pri.}$ =.839; $\alpha_{sec.}$ =.881; $\alpha_{att.}$ =.906). Overall, internal consistency results showed all items contributed the scale and scale is reliable.

Taking the results of validty and reliability analysis into consideration, the total scale composed of 13 items. The usefulness subscale composed of three items whereas ease of use, compatibility, privacy, security and attitude subscale has three items included two items. The adapted scale is provided in Appendix D.

4.3. Data Gathering and Data Analysis

The research was conducted with preparation school students and senior students in the spring of 2018-2019 academic year in four weeks. In both phases, researcher collected the data in the courses of students by taking permission from the instructors in different faculties or volunteer students in the canteens of both Anadolu University and Eskişehir Technical University. The data analysis of the research composed of independent sample t-test and multiple regression analysis. In order to examine whether attitudes of generations Y and Z towards online shopping statistically differ within the scope of sub-dimensions of e-TAM, independent sample t-test was performed. Standard multiple regression analysis was used to find the best predictor (usefulness, ease of use, compatibility, privacy, and security) regarding online shopping attitudes of generations Y and Z.

CHAPTER FIVE

5. FINDINGS

5.1. Descriptive Statistics

In our research, we analyzed Internet usage of participants. We asked, "How long have you been using the Internet?" to participants. Table 5.1 represents the frequencies of Internet usage of generation Y and Z. As seen in the table, three participants belong to generation Y answered that they did not use Internet. However, among participants belong to generation Z no one answered "I don't use the Internet". The mean of Internet usage of generation Y was calculated as 5,14 (sd= 0,99) whereas the mean of Internet usage of generation Z was found as 4,91 (sd= 0,97).

Table 5.1. *The frequencies of Internet usage*

	Generation Y		Generation Z	
	Frequency	**Percent**	**Frequency**	**Percent**
I do not use	3	0,63	0	0
Less than 2 years	1	0,21	4	0,77
Between 2 and 4 years	25	5,27	40	7,68
Between 5 and 7 years	93	19,62	126	24,18
Between 8 and 10 years	130	27,43	180	34,55
10 years or more	222	46,84	171	32,82
Total	474	100,00	521	100,00

We also asked to participants "Approximately how many hours do you use your internet per week?" to determine the Internet usage per week. Table 5.2 shows the descriptive analysis. As seen in the table, the mean of Internet usage per week of participants belong to Y and Z are quite close.

Table 5.2. *The descriptive statistics of Internet usage per week*

	N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Generation Y	473	0	400	30,63	27,640
Generation Z	519	3	256	31,60	22,038

Moreover, in our research we intended to analyze the descriptive statistics for online shopping. For this purpose we asked to participants two questions as follows:

- In the last three months, how many times have you purchased products and services online?

- How much did you spend on your online purchases in the last three months?

Table 5.3 depicts the descriptive statistics for above two questions.

Table 5.3. *The descriptive statistics of online shopping*

		N	Min.	Max.	Mean	sd.
Generation Y	**Online shopping in last three months**	474	0	90	4,97	7,341
	Cost	474	0 TL	9000 TL	412,63	774,534
Generation Z	**Online shopping in last three months**	519	0	100	4,75	7,449
	Cost	519	0 TL	12000 TL	413,16	914,194

As can be seen in the Table 5.3, the minimum value for online shopping in last three months is zero for both participants belonged to generation Y and Z. The maximum value for online shopping in last three months is 100 for participants belonged to generation Y whereas 90 is the maximum value for online shopping in last three months for participants belonged to generation Z. The mean of online shopping rate in last three months for generation Y and Z is 4,75 (sd= 7,45) and 4,97 (sd= 7,34) respectively. They are quite close. On the other hand, the minimum cost rate for online shopping in last three months is zero for both participants belonged to generation Y and Z. The maximum value for online shopping in last three months is 12000 for participants belonged to generation Y whereas 9000 is the maximum value for online shopping in last three months for participants belonged to generation Z. At first look, the maximum cost rate seems incorrect for social status of students. However, these participants revealed that they bought pc computer and mobile phone from the internet so the cost was high. Finally, the means of online shopping cost rate in last three months for generation Y and Z are 412,63 (sd= 774,534) and 413,16 (sd=914,194) respectively.

5. 2. The Test of the Hypotheses 1 through 5

In order to test hypotheses 1 through 5, we used independent samples t-tests. In other words, to test the hypothesis ranging between H1 and H5 we performed independent samples t-test separately for each hypothesis to explore the differences between generation Y and Z's attitudes towards online shopping.

First, missing data were evaluated with descriptive statistics. We deleted the responses of 29 participants who did not answer one or two items in the scale. Therefore, sample size decreased from 1030 to 1001. Then, we examined normality,

one of the preliminary analyses of parametric tests with Q-Q plots and box plots. These graphs displayed normal distribution for all items. Furthermore, skewness and kurtosis values were analyzed for normality. It was found that skewness values were ranging between -1.75 and .12 whereas the kurtosis values were varying between -.67 and .52 According to Trochim and Donnelly (2006:48) if these values range between -2 and +2, the data is normally distributed. Final assumption of independent sample t test is equality of variances. In order to the test the variance equality of scores for generation Y and Z, Levene's test was performed. According the results of Levene's test refer that equal variances assumed for ease of use (F= .066, p >.05), compatibility (F= .000, p >.05), privacy (F= 1.43, p >.05), security (F= 3.866, p >.05) and attitude (F= .837 p >.05) on the contrary equal variances not assumed for usefulness (F= 12.045, p >.05).

The results of independent samples t-test for the differences in attitudes and its sub-dimensions of generations Y and Z towards online shopping were displayed in Table 5.4. In comparison of the differences, .008 value, which is obtained by dividing the traditional .05 significance level with the number of analysis (6), was accepted as the level of significance. This way is known as Bonferroni adjustment. Because of the fact that we performed independent samples t-test for 6 dependent variables separately, the chance of a Type 1 error, which means finding significant results although the results are not significant, increases. With the help of Bonferroni adjustment, we reduced the chance of Type 1 error.

Table 5.4. *The results of independent samples t-test for the differences in attitudes*

	Generations	N	$\bar{X}$	SD	df	t	p	η^2
Attitude	Z	527	10,562	2,782	999	,402	,688	-
	Y	474	10,490	2,903				
Usefulness	Z	527	17,260	3,735	922,268	-,333	,739	-
	Y	474	17,340	4,500				
Ease of Use	Z	527	10,372	2,858	999	-2,691	,007	,007
	Y	474	10,854	2,806				
Compatibility	Z	527	9,235	3,263	999	-,633	,527	-
	Y	474	9,365	3,208				
Privacy	Z	527	7,729	2,994	999	-,855	,392	-
	Y	474	7,895	3,137				
Security	Z	527	8,981	2,527	999	,126	,900	-
	Y	474	8,960	2,791				

As seen in Table 5.4, although generation Z had (M= 10.562, SD=2.782) more positive attitudes towards online shopping than generation Y had (M= 10.490, SD= 2.903) there was not any significant difference in attitudes towards online shopping for generation Y and generation Z ($t_{att.}$ (999) = .402, p= .688). Furthermore there was not any significant difference in usefulness, compatibility, privacy and security for generation Y and generation Z (t_{use}(922.268) = -.333, p= .739; $t_{comp.}$(999) = -.633, p= .527; $t_{pri.}$(999) = -.855, p= .392; $t_{sec.}$(999) = .126, p= .900). On the contrary, generation Y (M= 10.854, SD= 2.806) has more tendency to online shopping because of the ease of use than generation Z has (M= 10.372, SD= 2.858). There was a significant difference in score for generation Y and Z in terms of ease of use ($t_{ease.}$ (999) = -2.601, p < .008, η^2= .007). However, the magnitude of the differences in the means was very small (η^2= .007). Therefore, the statistical difference was not regarded as meaningful enough. Overall results showed that there was not a difference in attitudes of generations Y and Z towards online shopping within the scope of sub-dimensions of e-TAM (See Table 5.5).

Table 5.5. *The results of Hypotheses 1 through 5*

Hypothesis No	Content	Test Results
1	Attitudes of generation Z towards online shopping are statistically different than generation Y in terms of perceived usefulness	**Rejected**
2	Attitudes of generation Z towards online shopping are statistically different than generation Y in terms of perceived ease of use	**Accepted**
3	Attitudes of generation Z towards online shopping are statistically different than generation Y in terms of compatibility	**Rejected**
4	Attitudes of generation Z towards online shopping are statistically different than generation Y in terms of privacy	**Rejected**
5	Attitudes of generation Z towards online shopping are statistically different than generation Y in terms of security	**Rejected**

5.3. The Test of the Hypothesis 6

Our second research question is related to whether the best predictor (usefulness, ease of use, compatibility, privacy, and security) differs regarding online shopping attitudes of generations Y and Z or not. In order to test the sixth hypothesis (e.g. the best predictor variables for online shopping attitudes of generation Y and Z differs) we conducted standard multiple regression for generations Y and Z separately. Therefore, we split the data into two regarding generations (549 participants belonged to generation Z while 481 participants belonged to generation Y). In this part, firstly the

results of standard multiple regression for generations Z were presented. Then, the results of standard multiple regression for generations Y were shared.

5.3.1. Findings of regression analysis for generation Z

Before performing the regression analysis, the preliminary analyses were tested to examine the convenience of the data. The preliminary analysis of multiple regression are outliers, sample size, multicollinearity, singularity, normality, linearity, homoscedasticity and independence of residuals (Akbulut, 2010:68-69).

First, missing values and abnormal responses were examined with descriptive analyses and 28 students were detected. Because of the fact that the number of missing values was under the 5% percent of sample (Tabachnick and Fidell, 2012: 63), these students' scales were excluded from the analyses. Then we examined outliers in multivariate situations. In order to determine multivariate outliers, Mahalanobis distance, Cook's distance and centered leverage values were examined. The critical value for six variables is 22.46 for $p < .001$ (Tabachnick and Fidell, 2012:952). The values for Cook distance should not be greater than 1, centered leverage values should be below .02 mostly and should not be above .05 (Pallant, 2005:152). With respect to these criteria, 10 students were determined as multivariate outliers. Therefore, we excluded 10 students' response from the data set. The sample size decreased to 511. Stevens (1996: 72) suggests that about 15 participants per predictor (independent variable) are required for social science research. In the analysis of five predictive variables, 511 participants were sufficient for regression analysis (511> 5x15). Then we examined multicollinearity and singularity assumption with correlation coefficients. The correlation coefficient between variables (attitude, usefulness, ease of use, compatibility, privacy, and security) ranged between .125 and .704. These values were lower than the .90 correlation coefficient which is accepted as the limit value (Pallant, 2005: 142). On the other hand, to assess multicollinearity tolerance values and variance inflation factor (VIF) values were examined. The tolerance values varied between .553 and .801. The VIF values ranged between 1,203 and 1,809. Tolerance values were greater than .10 and VIF values were less than 10 so we can imply that there is no violation assumption of multicollinearity and singularity assumption (Akbulut, 2010: 75). Finally, we examined the normality, linearity, homoscedasticity and independence of residuals assumption. This assumption is related to the distribution of variables and

the relationship between variables (Tabachnick and Fidell, 2012: 125). Figure 5.1 displays that normality, linearity, homoscedasticity and independence of residuals assumption was met. Furthermore, in order to examine the independence of residuals, the Durbin-Watson value was calculated and found as 1,915. According to Field (2005: 221), this value should not be between 1 and 3. Therefore, we can declared that there is no violation assumption of normality, linearity, homoscedasticity and independence of residuals.

Figure 5.1. *Histogram, P-P plot and scatterplot of residuals for generation Z*

Table 5.6 displays the results of standard analysis performed to determine best predictor of attitude towards online shopping for generation Z. Table 5.6 shows the calculated R, R^2, adjusted R^2, R^2 change, F change (F_{ch}), degrees of freedom (df), unstandardized regression coefficients (B), standard error (SE), the standardized regression coefficients (β), t values and significance levels (p) which were obtained from ANOVA.

Table 5.6. *The multiple regression analysis to predict generation Z's attitudes towards online shopping*

Model	Variables	R	R^2	ΔR^2	R^2_{ch}	F_{ch}	Sd	B	SE	β	t	p<
1	Constant	0,802	,642	,639	,642	181,443	5/505	,300	,411		,730	,466
	Usefulness							,228	,028	,294	8,211	,000
	Ease of Use							,129	,033	,131	3,890	,000
	Compatibility							,342	,029	,404	11,822	,000
	Privacy							-,004	,027	-,005	-,164	,870
	Security							,207	,034	,188	6,057	,000

R= .80, R^2= .64, ΔR^2= .64 , $F_{(5,505)}$= 181.443, p<.001

As it can be seen in Table 5.6 standard multiple regression analysis involved all of the independent variables (usefulness, ease of use, compatibility, privacy, and security) being entered into the equation at once. Our model, which includes of usefulness, ease of use, compatibility, privacy, and security to predict attitudes of generation Z towards online shopping, is significant (R= 0,80; R^2= 0,64; p <0,001). All independent variables explained 80% of the variance in attitudes of generation Z towards online shopping.

According to standardized regression coefficients, of these five variables, compatibility made the largest unique contribution (β =.404). Then usefulness made the second largest contribution (β =.294) to attitudes. The security made the third largest contribution (β =.188) to attitudes. The ease of use made the fourth largest contribution (β =.131) to attitudes. The privacy made the least contribution (β =.005) to attitudes. When the t test results for the significance of the regression coefficients were examined, it was observed that usefulness, ease of use, compatibility and security were significant predictor (p <.001) whereas privacy did not make a statistically significant contribution (p= .870). According to results of multiple regression analysis, regression equation for predicting attitudes of generation Z towards online shopping is as follows:

Attitudes = 0,3 + 0,342xComp. + 0,228xUse.+ 0,207xSec. + 0,129xEase – 0,004Pri.

5.3.2. Findings of regression analysis for generation Y

As mentioned before, we investigated whether the best predictor differs regarding online shopping attitudes of generations Z and Y or not. Therefore, we performed standard multiple regression analysis for generations Z and Y. In the previous part, the results of multiple regression analysis for generations Z were shared. In this part, the results of multiple regression analysis for generations Z were displayed. Then overall results were evaluated.

Findings of regression analysis for generation Y were discussed in the same steps as in the previous section. Firstly, we examined the preliminary analysis. In other words, we tested the convenience of second data set. In the second data set, there were 481 students belonged to generation Y. Of the total sample, seven students were detected as having missing or abnormal responses. Therefore, their responses were deleted from the data set. Then multivariate outliers were examined with Mahalanobis distance, Cook's distance and centered leverage values. The critical Mahalanobis value

for six variables is 22.46, p <.001 (Tabachnick and Fidell, 2012:952). The values for Cook distance should not be greater than 1 on the other side centered leverage values should be below .02 mostly and should not be above .05 (Pallant, 2005:152). Five students were determined as multivariate outliers regarding these values. For this reason, the responses of six students were excluded from the data set. The sample size decreased to 469 participants which were sufficient for regression analysis because the sample size was higher than 15 participants per predictor (469> 5x15) which was suggested for social science research (Stevens, 1996: 72). In order to analyze multicollinearity and singularity assumption, Pearson correlation was performed. It was found that the correlation coefficient between variables ranged between .102 and .692. This finding means that there is no violation assumption of multicollinearity and singularity assumption because the correlation coefficients were lower than .90, which is accepted as the limit value for multicollinearity, and 1 which is accepted as the limit value for singularity (Pallant, 2005: 142). Tolerance and VIF values were also analyzed to assess multicollinearity. The minimum tolerance value was .564 and the maximum tolerance value was .831. On the other hand, the minimum VIF value was 1,203 and the maximum VIF value was 1,772. These findings also contributed to meet multicollinearity assumption because tolerance values were greater than .10 and VIF values were less than 10 (Akbulut, 2010:75). Finally the normality, linearity, homoscedasticity and independence of residuals assumption was examined with histogram, p-p plots and scatter plot. Figure 5.2 shows that there is no violation assumption of normality, linearity, homoscedasticity and independence of residuals. We also examined the Durbin-Watson value to examine the independence of residuals. The Durbin-Watson value was found as 1,858. Because of the fact that this value was between 1 and 3, the assumption of independence of residuals was met. Overall, all preliminary analysis showed that there is no violation all assumption of regression analysis. In other words, the data set was convenient for regression analysis.
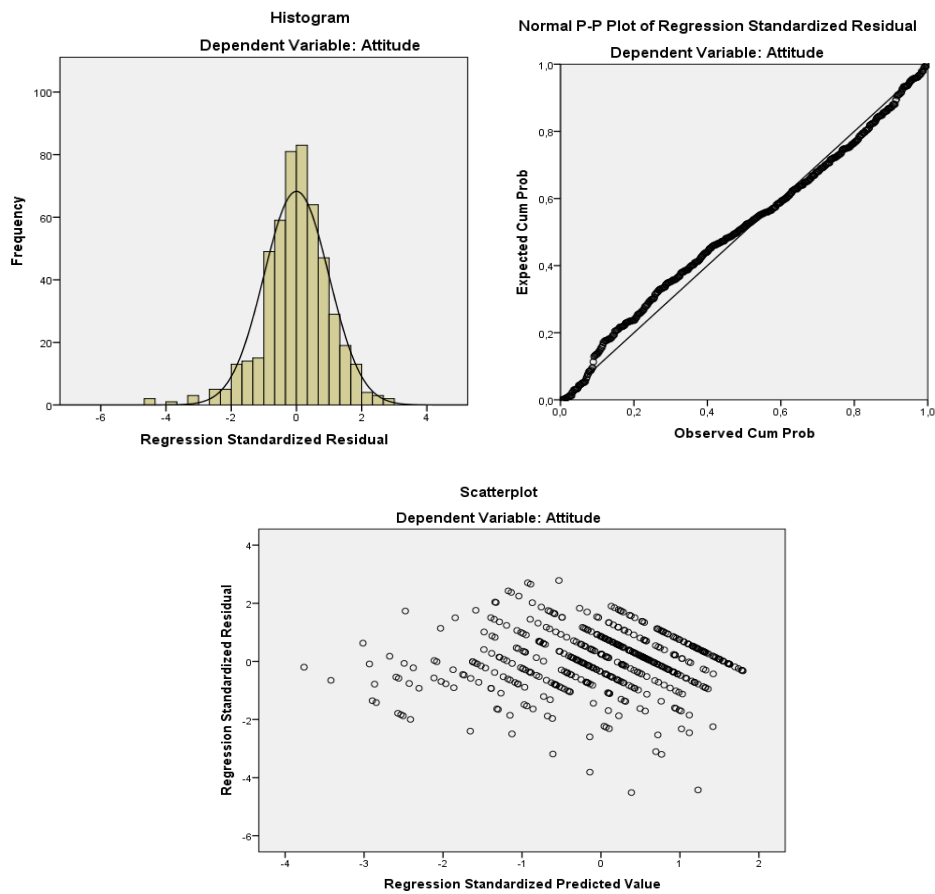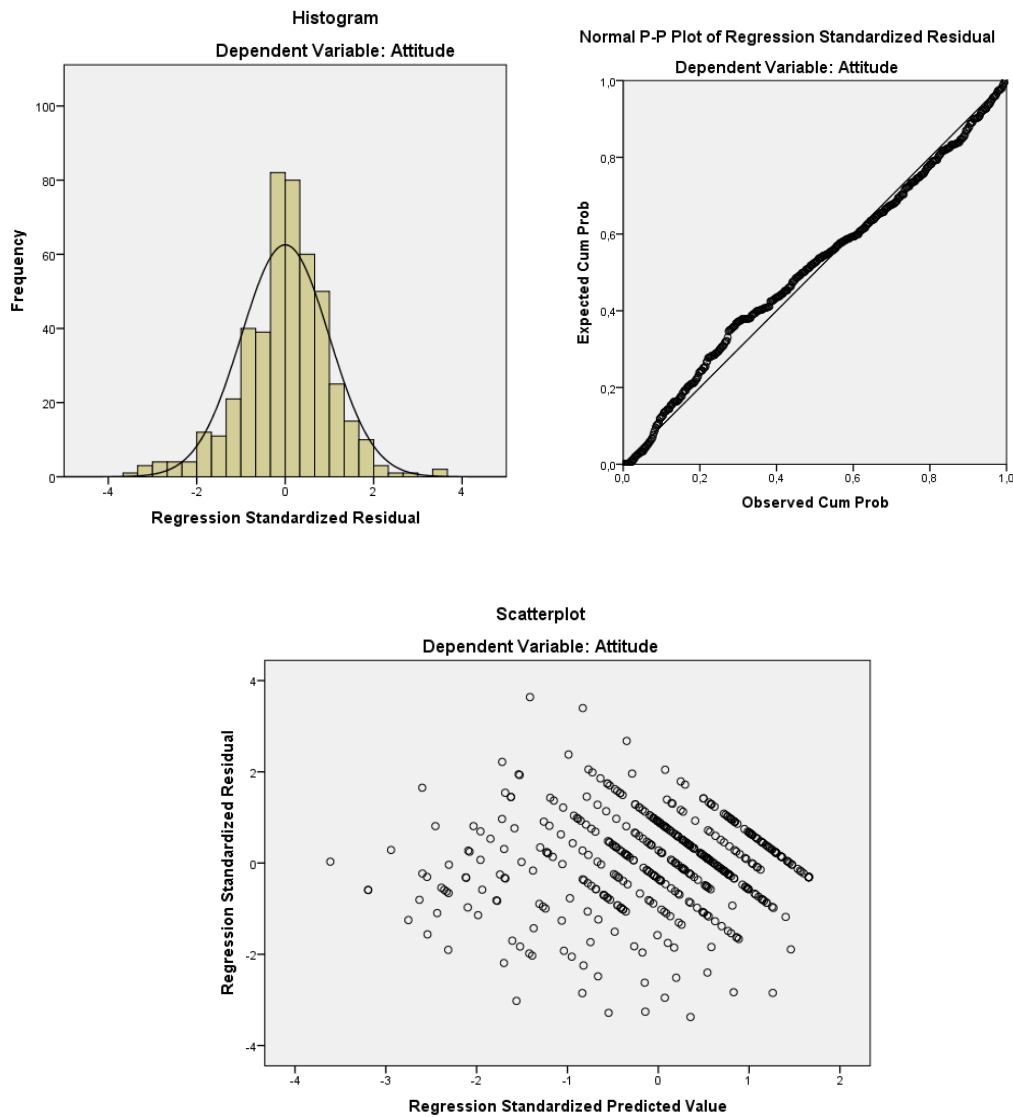
Figure 5.2. *Histogram, P-P plot and scatterplot of residuals for generation Y*

Table 5.7 shows the results of standard analysis performed to determine best predictor of attitude towards online shopping for generation Y. Table 5.7 displays the calculated R, R^2, adjusted R^2, R^2 change, F change (F_{ch}), degrees of freedom (df), unstandardized regression coefficients (B), standard error (SE), the standardized regression coefficients (β), t values and significance levels (p) which were obtained from ANOVA.

Table 5.7. *The multiple regression analysis to predict generation Y's attitudes towards online shopping*

Model	Variables	R	R^2	ΔR^2	R^2_{ch}	F_{ch}	Sd	B	SE	β	t	p<
1	Constant	0,826	,683	,679	,683	199,205	5/463	-,102	,372		-,273	,785
	Usefulness							,245	,022	,372	10,981	,000
	Ease of Use							,133	,036	,129	3,689	,000
	Compatibility							,299	,030	,330	10,121	,000
	Privacy							,019	,026	,021	,730	,466
	Security							,220	,033	,211	6,559	,000

R= .83, R^2= .68, ΔR^2= .68 , $F_{(5,463)}$= 199.205, p<.001

In our research multiple regression analysis involved all of the independent variables (usefulness, ease of use, compatibility, privacy, and security) being entered into the equation at once because we performed standard multiple regression. As can be seen in Table 4.6, our model, which includes of usefulness, ease of use, compatibility, privacy, and security to predict attitudes of generation Z towards online shopping, is significant (R= 0,83; R^2= 0,68; p <0,001). All independent variables explained 83% of the variance in attitudes of generation Y towards online shopping. This value is higher than explained variance in attitudes of generation Z towards online shopping.

When the standardized regression coefficients of these five variables were analyzed, it was found that usefulness made the largest unique contribution (β =.372). Then compatibility made the second largest contribution (β =.330) to attitudes. Usefulness and compatibility made almost same contribution. The security made the third largest contribution (β =.211) to attitudes. The ease of use made the fourth largest contribution (β =.129) to attitudes. The privacy made the least contribution (β =.021) to attitudes. According to the t test results for the significance of the regression coefficients, it was found that usefulness, ease of use, compatibility and security were significant predictor (p <.001) whereas privacy did not make a statistically significant contribution (p= .466). Regarding results of multiple regression analysis, regression equation for predicting attitudes of generation Y towards online shopping is as follows:

Attitudes = -0,102 + 0,245xUse. + 0,299xComp. + 0,220xSec. + 0,133xEase +0,19Pri.

Taking all multiple regression analysis for generation Z and Y into account, we can infer that, the relative importance order of the predictor on generation Y and Z's attitudes towards online shopping was almost the same. The relative importance order of the predictor on generation Z's attitudes towards online shopping was as follows: compatibility, usefulness, security, ease of use and privacy while the relative importance order of the predictor on generation Y's attitudes towards online shopping was as follows: usefulness, compatibility, security, ease of use and privacy. That's to say, only the first predictor which made the largest contribution was different. Participants belong to generation Z considered compatibility to prefer online shopping while participants belong

to generation Y paid attention to usefulness for online shopping. In addition to this, for both generation Y and Z privacy did not make a statistically significant contribution but other variables made statistically significant contribution to attitude. In sum, the best predictor variable differed regarding online shopping attitudes of generations Y and Z.

CHAPTER SIX

6. DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

6.1. Discussion

The purpose of this study is to reveal whether the attitudes of generations Y and Z towards online shopping differentiate in the scope of extended-Technology Acceptance Model (e-TAM). Technology acceptance is an indispensable requirement for online shopping. Especially, Web technologies refer to one of the most prominent and important tools in the utilization of online shopping practices. Therefore, in the both international and national literature, most of researchers focused on Technology Acceptance Model (TAM) in the inspection of consumers' attitude, intention and behavior towards online shopping (See Appendix A1, A2 and A3).

The present study basically focus on Technology Acceptance Model (TAM) and its enhanced version named as extended-Technology Acceptance Model (e-TAM) in the inspection of online shopping attitudes of generations Y and Z. In the extended version of TAM (eTAM), sub-dimensions differ from studies to studies as each research adds or excludes some factors according to its subject or scope. In this respect, in the previous researches covered in the both national and international literature, focusing on the different premises of e-TAM regarding attitudes towards online shopping preferences, various results came out.

However, in this study, attitudes of generation Y and Z towards online shopping have been discussed in the scope of e-TAM model proposed by Vijayasarathy (2004). Part of Vijayasarathy's enhanced model (e-TAM), which only comprises attitudinal patterns regarding online shopping, consists of 5 sub-dimensions *including perceived usefulness, perceived ease of use, compatibility, privacy*, and *security* that are main benchmarks in hypotheses of our research.

Accordingly, within the scope of our study, we tested 6 hypotheses that are as follows:

H1. Attitudes of generation Z towards online shopping are statistically different than generation Y in terms of *perceived usefulness*.

Perceived usefulness can be defined as the degree to which consumers believe online shopping would contribute to their productivity regarding shopping activities (Shih, 2004: 354) enabling them to reach helpful information, compare and buy goods and services in a faster manner (Vijayasarathy, 2004: 750). There is a positive relationship between information systems and attitudes of users towards adoption of them (Park et al., 2004: 14). Considering web sites, which is the main tool of online shopping, as an information system, it can be concluded that consumers may increasingly use online shopping environments if they are served well by web sites of business organizations. Study of Çelik (2009) came up with that *perceived usefulness* can be predictive on the attitudes of consumers towards online shopping. Furthermore, Ha and Stoel (2009) found that *usefulness* is a significant predictor of attitudes with regard to online shopping. In addition to this, Barkhi et al., (2008) suggest that *perceived usefulness* is influential in the utilization of online shopping. What is more, Tümtürk (2015) revealed that *perceived usefulness* has serious impacts on attitudes of consumers regarding online shopping. Moreover, Vijayasarathy (2004) elicited that *perceived usefulness* may be regarded as a strong predictor of online shopping attitudes of consumers.

Within the scope of our study, we assumed that perceived usefulness is influential on the attitudes of consumers based on the findings of above given researches. For this reason, we performed independent t test to compare online shopping attitudes of generation Y and Z regarding perceived usefulness. We found that there is not any significant difference in perceived usefulness for generations Y and Z in the online shopping preferences.

H2. Attitudes of generation Z towards online shopping are statistically different than generation Y in terms of *perceived ease of use*.

As the consumers think that information systems are easy to use, they increasingly adapt to utilize it (Park et al., 2004: 14). Considering the fact that online shopping environments are based on information systems, that is, web technologies, consumer would utilize online shopping if they think that it is effortless. Çelik (2009) detected that *perceived ease of use* can predict attitudes of consumers towards online shopping. Besides, Tümtürk (2015) discovered that *perceived ease of use* influences attitudes of consumers regarding

online shopping. In addition, Vijayasarathy (2004) disclosed that *perceived ease of use* affects online shopping attitudes of consumers strongly.

In the beginning our study, we also assumed that perceived ease of use has an impact on the attitudes of consumers based on the findings of above given researches. Therefore, we performed independent t test to compare online shopping attitudes of generation Y and Z regarding perceived ease of use. Interestingly it was found that generation Y has more tendency to use online shopping because of the perceived *ease of use* than generation Z has. Despite the fact that difference was statistically significant but the magnitude of the difference in the means was very small.

H3. Attitudes of generation Z towards online shopping are statistically different than generation Y in terms of *compatibility*.

Compatibility has been associated with the degree to which consumers believe that a new technology (here represented by online shopping web sites) would correspond to their necessities and norms. In this case, if consumers believe that online shopping is in harmony with their requirements and preferences, then they would benefit from it (Vijayasarathy, 2004: 750). O'Cass and Fenech (2003) comes up with the finding that *compatibility* affect attitudes towards online shopping. Moreover, Vijayasarathy (2004) elicited that *compatibility* may be considered as a powerful predictor with respect to online shopping attitudes.

As for compatibility, we assumed that compatibility is a factor affecting the attitudes of consumers. In our data analysis, independent t test was conducted to compare online shopping attitudes of generation Y and Z with respect to compatibility. The results showed that there is not any significant difference in compatibility for generations Y and Z in the online shopping preferences.

H4. Attitudes of generation Z towards online shopping are statistically different than generation Y in terms of *privacy*.

Privacy has been referred to the degree to which consumer doubt that online shopping units would not be sensitive about their privacy. Thus, consumers may be concerned about their personal information and ill usage of it by strangers (Vijayasarathy, 2004: 751).Vijayasarathy (2004) and Keisidou, et al., (2011) found that privacy does not have a remarkable impact on attitudes towards online shopping attitudes of consumers.

In our research model we accepted that privacy is one of the effective factor on the attitudes of consumers. Accordingly we used independent t test to detect if there is any statistical difference in online shopping attitudes of generation Y and Z in terms of privacy. Any significant difference in the online shopping preference has not found for generations Y and Z.

H5. Attitudes of generation Z towards online shopping are statistically different than generation Y in terms of *security*.

Perceived security, which is quite significant in the internet-based market spaces, have been associated with the extent to which consumers consider that online purchasing activities are secure enough for them. For this reason, business organizations invest in advanced technologies to provide secure business environments to their potential customers (Barkhi et al., 2008: 180, 181). O'Cass and Fenech (2003) and Liao and Cheung (2001) comes up with the result that *security* affects attitudes of the internet users towards online shopping as an important factor. Besides this, Barkhi et al., (2008) revealed that *perceived security* is effective in the usage of online shopping. However, it is not considered as an important predictor for online shopping attitude. Nonetheless, Keisidou, et al., (2011) suggest that *perceived security* positively affects attitudes towards online shopping (books). Lastly, Vijayasarathy (2004) elicited that *security* is a strong factor in the prediction of online shopping attitudes of consumers.

We began our research assuming that security is influential on the online shopping attitudes of consumers. In accordance with that we benefitted from the independent sample t test. Analysis revealed that there is not any significant difference in security for generations Y and Z in the online shopping preferences.

Considering the results of hypotheses, ranged between H1 and H5 except H3, which showed that there is not a significant difference in the online shopping attitudes of generations Y and Z in terms of sub-dimensions of e-TAM, age closeness, similarity in socio-economic conditions can be main reasons of these results. However, results also show that perceived ease of use is relatively more important for generation Y than generation Z over the attitudes towards online shopping. The reason for this result might be because of the fact that generation Z is considered more tech-savvy and competent in the

usage of it compared to generation Y. This means that generation Y minds ease of use in the technology more than generation Z.

H6. The *best predictor variables* for online shopping attitudes of generation Y and Z differs.

In our study, we performed multiple regression analysis for generations Y and Z separately to find the order of the predictors on generations Y and Z's attitudes towards online shopping. It has been found that the relative importance regarding the order of the predictors on generation Z's attitudes towards online shopping are as follows:

- Compatibility
- Perceived usefulness
- Security
- Perceived ease of use
- Privacy

Whereas the relative importance with regard to order of the predictors on generation Y's attitudes towards online shopping are as follows:

- Perceived usefulness,
- Compatibility
- Security
- Perceived ease of use
- Privacy

In this case, only the first predictor variable, which made the largest contribution, was different. Participants belonged to generation Z considered *compatibility* as most important factor to prefer online shopping whereas participants belonged to generation Y paid attention *to usefulness* most regarding the preference of online shopping. However, in most of the studies from the literature, generally *perceived usefulness* was found as best predictor of attitudes towards online shopping (eg. Çakır, 2009; Henderson and Divett, 2003; Koufaris, 2002; Vijayasarathy, 2004). Therefore it can be inferred that the finding related to best predictor of generation Y's attitudes towards online shopping was consistent with other research findings which focus on participants belong to generation Y or possibly generation X. In this case, it can be inferred that the best predictor variable of online

shopping attitude for generation Y and possibly generation X is *perceived usefulness* whereas *compatibility* is the best predictor variable for generation Z towards online shopping.

The reason for that preference regarding both generations might be that generation Z already accept online shopping practices it because they believe that web technologies and online shopping environments are easy to use, secure enough and would make meaningful contribution to them while they shop. Also, maybe generation Z already admits a little portion of violation of privacy since they are born into environments of social networks, which obtain their bunch of personal information in the first place. This is why, generation just care about compatibility considering whether online shopping would fit to their way of life, serve for their priorities and necessities or not.

As for generation Y, these people most probably mind benefits of online shopping activities and related technologies used before anything else. On the other side, this generation is also tech-savvy and get used to utilize information technologies and internet which prevent them to scare from privacy and security issues of online shopping environments in which they already spend time long periods of time. Thus, they do not consider whether usage of such platforms would be easy to use or not since they already use all of them. For this reason, they merely care about perceived usefulness.

6.2. Conclusion

The aim of this study is to elicit and compare attitudes of generations Y and Z towards online shopping in the light of extended-Technology Acceptance Model (e-TAM). In this respect, Vijayasarathy's (2004) e-TAM model is benefited from in the inspection of online shopping attitudes of generations Y and Z.

Accordingly, multiple regression analysis has been conducted separately to discover the order of the predictors regarding generations Y and Z's attitudes towards online shopping. Results showed that best predictor variable is different in terms of online shopping attitudes of generation Y and Z. Thus, members of generation Z point out *compatibility* as most significant factor in the preference of online shopping while generation Y minds *perceived usefulness* in the online shopping activities.

Besides, independent t test has been implemented to discover if there is any statistical difference in online shopping attitudes of generation Y and Z with regard to sub-dimensions (*perceived usefulness, perceived ease of use, compatibility, privacy* and, *security*) of e-TAM. Overall results showed that there is not a significant difference in the online shopping attitudes of generations Y and Z. In addition to this, sub-dimensions of e-TAM including *perceived usefulness, compatibility, privacy* and *security* do not show any statistical difference for online shopping attitudes of generations Y and Z. However there is a very small statistical difference in perceived ease of use regarding generation Y. Thus perceived ease of use is relatively more important for generation Y than generation Z over the attitudes towards online shopping.

General results of this study imply that young generations actively and effectively get involved into online shopping platforms. Generations Y and Z, who represent current youths and university students of recent times, are rather inclined to shop online. In this sense, it is possible to state that these youngsters form the potential consumers of the today and future in terms of online shopping patterns. Considering this fact, commercial world and marketing environments should take into account recent inclinations of the young generations in the implementation of their marketing strategies to thrive in a sustainable way. Regarding the outcomes of this study, which gives important implications about the way things are going in terms of attitudes of potential consumers, even online shopping intentions and behaviors of the consumers might be interpreted since literature review points out to such a relationship structure between shopping attitude, intention, and behaviors. According to *Attitude to Behavior Theory,* attitudes direct behavior which means that purchasing decisions of the consumers have been exposed to serious impacts by their attitudes. Therefore, purchasing behavior towards online shopping comes out as a result of positive attitudes of consumers regarding the product or service in question Barkhi et al., (2008). Within this context, in the same line, Tümtürk (2015), Limayem et al., (2000), and Vijayasarathy (2004) states that online shopping attitude is quite influential over online shopping intention. Besides, Çelik (2009) suggest that consumer attitudes have a significant impact on the consumer intentions which eventually affect the real consumer behavior towards online shopping in a positive way. This is why, inspection of attitudes towards online shopping matters to notice the implications regarding online shopping behavior.

In brief, this study is believed to make contributions to field along with its various and unique perspectives. In such a fast changing world atmosphere by means of new technologies, marketing environments and professionals are having difficulty in the prediction of consumption patterns of especially young generations who are exposed to a constant change process in the light of advanced digital technologies. In this sense, regarding online shopping acceptance patterns as linked with the adoption of Internet-driven technologies of the young consumers, this study offers some implications, which will be useful for the marketing world.

As a result, business organizations should be striving to invest in innovative technologies such as internet and Web to be able to get up to date in terms of online shopping trends and changing marketing conditions in the light of technology. Accordingly, inspection and understanding of implications that are obtained from marketing conditions in which young are dominant and leading factors, matters for business organizations.

6.3. Recommendations for Future Studies

Based on the research process, the findings and the results, in future studies the following may be taken into consideration:

– Comparison of the attitudes of generation X, Y, and Z.
– Comparison of the attitudes of participants having different socio-economic status
– Study of gender differences in attitudes towards online shopping.
– Study of the relationship between the attitudes, intention and behaviors for online shopping.

Also, a mix design might be used theoretically.

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APPENDIX

APPENDIX A1. International-based Researches Regarding Technology Acceptance Model (TAM)

Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
Schifter & Ajzen	1985	Journal	Health sector (Weight loss)	To investigate whether attitudinal and personality variables predict the success in attempted weight reduction in the context of TPB.	Intention, perceived control, subjective norm, attitude	Quantitative method	83 female college students	Scale	Regression analysis
Davis	1989	Journal	Technology usage	To develop and validate new scales for core variables of TAM.	Perceived ease of use and perceived usefulness	Quantitative method	152 users and four application program	Questionnaire	Regression analysis Factor analysis
Davis, Bagozzi & Warshaw	1989	Journal	Technology usage	To explore whether measures of TAM predict peoples' computer acceptance.	Subjective norms, perceived usefulness: ease of use	Mixed Method	107 full-time MBA students	Telephone interviews and question	Structural equation model
Davis	1993	Proceeding	Technology usage	To explore users' acceptance or reject of information systems.	Perceived ease of use:usefulness, system design features, attitude and actual use	Quantitative method	112 professional and managers	Questionnaire	Regression analyses
Igbaria	1993	Journal	Technology usage (computer technology)	To investigate why users prefer microcomputer technology.	P.usefulness, intention and attitude	Quantitative method	519 managers	Scale	Structural equation model
Phillips, Calantone & Lee	1994	Journal	Art mining technology	To test the effect of TAM on the ground of demand certainty and uncertainty.	P. utilities:ease of adoption, attitude, intention and cultural affinity	Quantitative method	303 respondents interested art mining technology and equipment	Scale	Structural equation model

Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
Davis & Venkatesh	1996	Journal	Technology usage	To test the reliability and validity of Davis' scale.	Perceived ease of use and perceived usefulness	Quantitative method	195 students	Questionnaire	Factor analysis and correlational analysis
Taylor &Todd	1995	Journal	Technology usage	To compare TAM and TPB model with respect to information technology usage.	Perceived usefulness, perceived ease of use, attitude, behavioral intention, usage behavior	Quantitative method	786 potential users of a computer resource center	Two scales	Structural equation model
Chau	1996	Journal	Technology usage	To modify and extend TAM considering perceived usefulness and modifies.	Perceived long-term usefulness: short-term usefulness: ease of use and intention	Quantitative method	285 administrative/clerical staff in a large organization	Questionnaire	Structural equation model
Straub, Keil & Brenner	1997	Journal	Technology usage	To test and compare TAM model across Japan, Switzerland and the United States.	Perceived usefulness and perceived ease of use	Quantitative method (Cross-country study)	393 airline travelers (USA:99, Japan: 142, Switzerland: 152)	Scale	Regression analysis
Gefen & Keil	1998	Journal	Technology usage	To extend TAM.	P. ease of use, perceived usefulness, perceived developer responsiveness and self-reported use	Quantitative method	196 subjects	Questionnaire	Structural equation model
Agarwal & Prasad	1999	Journal	Technology usage	To investigate the relationship between individual differences and IT acceptance.	Individual differences, beliefs about usefulness, beliefs about ease of use, attitude, behavioral intention	Quantitative method	230 users of an information technology innovation.	Scale	Structural equation model
Lederer, et.al.	2000	Journal	Work related tasks (WWW)	To test the effects of TAM on work-related tasks with the World Wide Web as the application.	Usage, ease of use, usefulness	Quantitative method	163 people	e-mail Scale	Exploratory and confirmatory factor analysis

Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
Venkatesh & Davis	2000	Journal	Technology usage	To extend TAM regarding social issues.	P. ease of use:usefulness, subjective norm, voluntariness, image, job relevance, experience, result demonstrability and intention	Quantitative method	Four different systems at four organizations (N = 156)	Scale	Regression analysis
Bhattacherjee	2001	Journal	Online brokerage	To search the reasons of consumers' intention to use B2C e-commerce services in the light of TAM.	P.usefulness, satisfaction, continuance intention, loyalty incentives and confirmation	Quantitative method	172 computer users	Online questionnaire	Exploratory and confirmatory factor analysis
Chau & Hu	2001	Journal	Health sector	To examine physicians' acceptance of telemedicine technology in the light of TAM and TPB.	P.usefulness: ease of use, attitude, subjective norms: behavioral control and behavioral intention	Quantitative method	400 physicians	Scale	Structural equation model
Chen, Gillenson &Sherrell	2004	Journal	Online shopping (virtual store)	To examine the reasons of consumers' use of a virtual store in the light of TAM.	P. ease of use:usefulness, compatibility, attitude, intention and actual use	Quantitative method	253 registered users of a non-profit organization	Online scale	Structural equation model
Horton et.al.	2001	Journal	Banking and engineering sectors.	To test TAM in explaining intranet usage in two organizations.	P.usefulness: ease of use, intention to use and self-reported usage	Two quantitative research	386 employees in a bank 65 engineer	Scale	Exploratory factor analysis
Shim, Eastlick, Lotz & Warrington	2001	Journal	Online shopping	To investigate the predictors of consumers' intention towards online shopping in the light of TAM.	Attitude, subjective norm, perceived behavioral control, intention	Quantitative method	684 households with personal computer owners in 15 U.S. metropolitan areas	Online scale	Structural equation model

Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
Koufaris	2002	Journal	Online shopping	To explore online consumer behavior regarding TAM, Flow and Environmental Psychology.	Perceived ease of use:usefulness:control, enjoyment, concentration, challenges and skills (related to flow theory)	Quantitative method	280 people	Questionnaire	Regression analysis
Liaw	2002	Journal	Technology usage	To develop a model for individuals' use of Web technology.	Technology experience, behavioral self-efficacy:usefulness:enjoyment and behavioral intention	Quantitative method (Semi-experimental method)	260 students	Questionnaire	Structural equation model
Lu & Lin	2002	Journal	Marketing	To explore the customer behavior in the market-space in the light of TRA.	Beliefs, attitude & customer loyalty	Quantitative method	145 subjects	Questionnaire	Structural equation model
Selim	2003	Journal	Education (Course Website Acceptance Model)	To test whether usefulness and ease of use effect acceptance of course Websites of university student or not.	Usage, ease of usage and usefulness	Quantitative method	403 undergraduate students	Scale	Structural equation model
Corbitt, Thanasankit & Yi	2003	Journal	e-commerce	To explore the related factors to trust in terms of B2C and identify the relationship of these factors.	Perceived trust, risk and other factors related to e-commerce	Quantitative method	80 individuals	Online scale	Correlational analysis Exploratory factor analysis
Dahlberg, Mallat & Öörni	2003	Journal	Mobile payments system	To investigate why central consumers' mobile payment system in the context of TAM.	Perceived ease of use, perceived usefulness, perceived trust, external factors, attitude and intention	Qualitative methods	61 individuals	Focus group interviews	Content analysis

Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
Gefen, Karahanna, & Straub	2003	Journal	Online shopping (CDs, book)	To extend TAM by integrating trust in online shopping.	Perceived usefulness, perceived ease of use and intended use	Quantitative method	213 students	The questionnaire contained the standard TAM scales of PU and PEOU adapted from Davis' scales (1989)	Confirmatory factor analysis
Henderson & Divett	2003	Journal	Supermarket use	To examine the applicability of TAM in electronic commerce setting such as supermarket shopping.	Perceived ease of use and perceived usefulness	Quantitative method	247 individuals	Questionnaire	Regression analysis
Hu, Clark & Ma,	2003	Journal	Education	To investigate technology acceptance decision-making of public school teachers	Perceived ease of use, perceived usefulness, subjective norm, job relevance, compatibility, computer self-efficacy and intention	Quantitative method (Longitudinal study)	130 teachers attending an intensive 4-week training program	Scale	Structural equation model
Legris, Ingham & Collerette	2003	Journal	Review	To conduct a meta-analysis for the sub-dimension of TAM.	Perceived usefulness, perceived ease of use, intention and attitudes	Quantitative method	22 research	-	Meta-analysis
Liu & Wei	2003	Journal	e-commerce	To propose a model for explaining consumers' e-commerce	Perceived ease of use, perceived usefulness and perceived risk	Quantitative method	308 university students	Scale	Structural equation model
O'Cass & Fenech	2003	Journal	Using Web site (WWW)	To investigate adoption of the Web for retail usage by Internet users in the light of TAM.	Perceived usefulness, perceived ease of use and attitude	Quantitative method	392 people	Web based scale	Structural equation model

Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
Pavlou	2003	Journal	e-commerce	To find consumers' e-commerce acceptance's predictors which are related to consumers in on-line transactions and sub-dimensions of TAM.	Perceived ease of use, perceived usefulness, perceived risk, trust and intention	Quantitative method	103 students and 155 on-line consumers	Scale	Exploratory and confirmatory factor analysis
Venkatesh, Morris, Davis & Davis	2003	Journal	Work related system	To contrast eight models related to acceptance of work related system and to integrate models as in one model and to test the unified model in four different study.	Performance expectancy, effort expectancy, behavioral intention, use behavior	Quantitative method (Longitudinal study)	1st study: 54 people 2nd study: 65 people 3rd study: 58 people 4th study: 34 people	Scale	Structural equation model
Ahn, Ryu & Han	2004	Journal	Online shopping (Website of a shopping mall)	To investigate the effect of online and offline features of online shopping on the customers' acceptance behavior.	P. ease of use, perceived usefulness, intention and attitude	Quantitative method	932 Web users	Scale	Structural equation model
Chen & Tan	2004	Journal	Online shopping (virtual store)	To construct a model to explore consumers' acceptance of virtual stores.	P. ease of use: usefulness, compatibility, attitude, intention and actual use	Quantitative method	253 registered users of a non-profit organization	Online scale	Structural equation model

Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
Hansen, Jensen & Solgaard	2004	Journal	Online shopping	To explore the validity of TAM and TRA in foreseeing consumers' online grocery shopping behavior.	Attitude, subjective norm:behavioral control, behavioral intention	Quantitative method	1222 Danish and 1038 Swedish consumers	Web-based scale	Structural equation model Regression analysis
Heijden & Verhagen	2004	Journal	Online shopping (books)	To find the predictors of online book shopping and to relationship between these predictors and online shopping attitudes and intentions in the light of research based on TAM.	P. usefulness: ease of use, enjoyment, familiarity, settlement and intention	Quantitative method	61 people for pilot study 312 undergraduate students	Scale developed by researchers	Exploratory factor analysis Regression analysis
Hsu & Chiu	2004	Journal	Users electronic service acceptance (WWW)	To extend TAM in the behavioral control beliefs of Internet users in e-service acceptance by adding new two factors as: general Internet self-efficacy and Web-specific self-efficacy.	Subjective norm, perceived usefulness:playfulness: risk, attitude, intention:behavioral control and self-efficacy	Quantitative method	239 MBA students of a university in Taiwan	Scale	Structural equation model
Klopping & McKinney	2004	Journal	Online shopping	To analyze TAM and TRA for consumers' behavior regarding technology adoption process.	Perceived ease of use, perceived usefulness, actual usage and intention	Quantitative method	263 undergraduates	Scale	Structural equation model

Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
Martins & Kellermanns	2004	Journal	Education (Web-Based Course Management System)	To construct a model for determining predictors of business school students' acceptance of a course management system.	Perceived usefullness, perceived ease of use, attitude and intention	Quantitative method	243 students	Questionnaire	Structural equation model
Park, Lee & Ahn	2004	Journal	e-Commerce	To validate the e-Commerce Adoption Model which integrates TAM and theories of perceived risk in the USA and Korea.	Perceived usefullness, perceived ease of use and perceived risk	Quantitative method (Cross-country study)	443 people (USA: 176, Korea: 267)	Scale	Structural equation model
Shih	2004	Journal	Online shopping (extending TAM)	To develop an extended model for explaining consumer acceptance of online shopping.	P.usefulness, perceived .f use, attitude, satisfaction:quality and user acceptance	Quantitative method	242 people	Questionnaire	Structural equation model
Thatcher & George	2004	Journal	Online shopping (www)	To analyze which factors effect loyalty of consumers.	Social involvement, trust, satisfaction and other variables	Quantitative method	100 samples	Scale	Structural equation model
Vijayasarathy	2004 a	Journal	Online shopping	To examine whether Internet shopping intention differentiates with respect to cost and tangibility.	Beliefs, attitude, subjective norms, intention and product type (TRA)	Quantitative method	750 individuals	Scale	ANCOVA MANCOVA
Vijayasarathy	2004 b	Journal	Online shopping	To develop a model that extends TAM for online shopping	Usefulness, ease of use, compability, privacy, security, normative beliefs, self-efficacy, attitude and	Quantitative method	281 consumers	Scale	Regression analysis

Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
				and to test the extended model by users and non-users of the Internet.	intention				
Bruner & Kumar	2005	Journal	Mobile commerce	To examine TAM in mobile commerce regarding hedonic factors.	Perceived ease of use, perceived usefulness, fun, visual processing, attitude and intention	Quantitative method	212 students	Scale	Structural equation model
Holsapple & Sasidharan	2005	Journal	Review (e-commerce)	To search the importance level of trust in B2C e-commerce.	Perceived ease of use, perceived usefulness, trust, subjective norms, intention and self-efficacy	Quantitative method	-	-	Review analysis
Ma, Andersson & Streith	2005	Journal	Education	To elucidate the ways of encouraging students to use computer technology in schools.	Perceived usefulness, perceived ease of use, subjective norm and intention	Quantitative method	84 student teacher	Scale	Structural equation model
Shang, Chen & Shen	2005	Journal	Online shopping	To investigate the role of intrinsic motivations in consumers' acceptance of electronic shopping.	Perceived ease of use and perceived usefulness	Quantitative method	478 members of a mailing list compiled by a major computer magazine in Taiwan	Scale	Logistic regression
Yu, Ha, Choi & Rho	2005	Journal	t-commerce	To extend TAM to clarify the factors which effect the t-commerce of potential users' adoption.	P. ease of use, perceived usefulness: enjoyment, trust, attitude, normative belief of family and friends, and subjective norm	Quantitative method	886 experienced users and 115 inexperienced users	Questionnaire	Structural equation model
Burton-Jones & Hubona	2006	Journal	Using cc mail	To test whether 'perceived ease-of-use' and 'perceived	Perceived usefulness, perceives ease of use	Quantitative method	125 employees of a U.S. Government agency	Scale	Structural equation model

Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
				usefulness' constructs influence other external factors on behavior of using cc mail.					
Hong, Thong & Tam	2006	Journal	Technology usage (mobile Internet)	To investigate the effectiveness of three prospective models for explaining the usage behavior of Internet technology.	Perceived ease of use, perceived usefulness, confirmation, satisfaction and intention	Quantitative method	1826 mobile Internet users,	Scale	Structural equation model
Kim	2006	PhD Dissertation	Sensory enabling technology	To propose an extended model called as a sensory enabling technology acceptance model (SE-TAM) and to investigate this model in the online apparel shopping process in different technology settings (2D larger view and alternate views, 3D rotation views, and Virtual Try-on).	Perceived ease of use, perceived usefulness, perceived entertainment and attitude	Mixed method	354 people	Online scale Focus group interview	Structural equation model Regression analysis
King & He	2006	Journal	Review	To conduct meta-analysis for TAM as applied in different disciplines.	All factors	Quantitative method	88 research paper	-	Random effect basis

Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
Lim, Sia, Lee & Benbasat	2006	Journal	Online shopping (Books)	To examine the effect of trust in actual buying behavior of consumers who visits an Internet store for the first time.	Trust, attitude and actual buying	Quantitative method (Experimental)	133 undergraduate students	Questionnaire	Structural equation model
Pavlou & Fygenson	2006	Journal	Online shopping (vendors Web site)	To develop and extended TPB model for explaining consumers' online shopping process.	Attitude, subjective norm, perceived behavioral control, intention, behavior and control believes	Quantitative method	312 Internet consumers	Scale	Structural equation model
Porter & Donthu	2006	Journal	Internet usage	To extent TAM and validate the extended model.	Perceived usefulness, perceived ease of use, access barriers and attitude	Quantitative method	539 people	Scale	Structural equation model
Chen, Chen & Kazman	2007	Journal	eCRM (electronic Customer Relationship Management)	To extend TAM for the eCRM context.	Perceived usefulness, perceived ease of use, behavioral intention and satisfaction	Quantitative method (Experimental)	122 subjects who were beyond to Generation X	Scale after computer education	Structural equation model
Garrity, O'Donnell, Kim, & Sanders	2007	Journal	Online shopping	To integrate TAM and extended nomological network of success factors that draws on motivation and flow theory taking both intrinsic and extrinsic motivating factors into account for online shopping.	Decision support satisfaction, task support satisfaction, interface satisfaction, behavioral intent to use, shopping enjoyment and trust	Quantitative method (Experimental)	189 people aged 18 to 48	Scale	Structural equation model

Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
Hur	2007	PhD Dissertation	Sport organizations	To evaluate the perception and acceptance of sport-related Websites through sport fans.	Perceived ease of use:usefulness:enjoyment, perceived trustworthiness, intention and behavior	Quantitative method	337 students	A scale of sport Web acceptance developed by researcher	Structural equation model
Järveläinen	2007	Journal	Online shopping and travel booking	To analyze consumers' choice of purchasing channel for travel in a relatively secure environment in the light of TAM.	Perceived ease of use, perceived usefulness and intentions	Quantitative method	2479 people	Scale	Structural equation model
Lin	2007	Journal	Review (virtual store)	To conduct meta-analysis of researches on the relationship between online/offline characteristics and sustainability of virtual communities.	All variable related to TAM	Quantitative method	Based on a scale of 165 community members, the paper uses structural equation modeling approach to investigate the research model	-	Meta-analysis
Schepers & Wetzels	2007	Journal	Review	To conduct a meta-analysis for research related to TAM.	Subjective norm	Quantitative method	51 research	-	Correlational analysis Fischer's Z
Barkhi, Belanger & Hicks	2008	Journal	Online shopping	To develop and evaluate a model for consumer purchase decisions in a virtual store by integrating TRA, TAM.	P.security: peer influence, perceived behavioral control: usefulness, attitude	Quantitative method	277 students	Scale	Structural equation model

Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
Bigne-Alcaniz, Ruiz-Mafe, Aldas-Manzano & Sanz-Blas	2008	Journal	Online shopping	To examine the impact of information of shopping via Internet and innovativeness and dependence on acceptance.	Perceived ease of use:usefulness, innovativeness, attitude and intention	Quantitative method	465 Spanish consumers	Scale	Structural equation model
Crespo & del Bosque	2008	Journal	Online shopping	To investigate how individual innovativeness affect e-commerce decision.	Attitude, subjective norm:behavioral control, innovativeness, general, innovativeness, and intentions	Quantitative method	323 Internet users who had already purchased online	Scale	Confirmatory Factor Analysis
Kim, Ferrin & Rao	2008	Journal	e-commerce	To construct a model for describing the role of trust in online shopping process.	Perceived risk, perceived benefit, trust and intention	Quantitative method	466 individuals	Questionnaire	Structural equation model
Qiu, & Dong	2008	Journal	Online shopping (extending TAM)	To represent the extended TAM that focus on building and hedonic experience.	Perceived ease of use, perceived usefulness trust, social presence, and perceived enjoyment	Review	-	-	-
Premkumar & Bhattacherjee	2008	Journal	Technology usage	To contrast TAM and the expectation–disconfirmation theory within the context of technology usage.	Perceived ease of use, perceived usefulness and intention	Quantitative method	175 students	Scale	Factor analysis ANOVA
Aggelidis & Chatzoglou	2009	Journal	Health sector	To extend TAM in health issues.	P. usefulness, perceived ease of use, social influence, facilating conditions, behavioral intention	Quantitative method	283 hospital personnel	Questionnaire	Structural equation model

Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
Chiu, Lin, Sun & Hsu	2009	Journal	Online shopping (PChome Online in Taiwan)	To examine why customers do shopping via Web sites.	P. ease of use:usefulness, satisfaction, trust and loyalty intention	Quantitative method	311 customers of an online shopping store	Questionnaire	Structural equation model
Chiu, Chang, Cheng & Fang	2009	Journal	Online shopping (PCHome, an online Web pruchace in Taiwan)	To extend TAM for online shopping by integrating trust.	P.usefulness: ease of use, trust and repurchase intention	Quantitative method	360 PCHome online shopping customers	Scale	Structural equation model
Ha & Stoel	2009	Journal	Online shopping	To extend TAM for online shopping by adding quality, enjoyment, and trust.	Perceived usefulness, perceived ease of use, trust, enjoyment, attitude and intention	Quantitative method	298 college students	Online scales	Structural equation model
Hausman & Siekpe	2009	Journal	Online shopping	To propose factors for Website design to compose positive attitudes towards online shopping in the light of TAM.	Usefulnnes, other factors related other theories (such as computer factor, and etc)	Quantitative method	211 students to refine scale 266 students to test hypothesis	Scale	MANCOVA Structural equation model
Hernandez, Jimenez & Martin	2009	Journal	e-commerce	To investigate whether potential and experienced customers' prefers of e-commerce differentiate or not in the light of TAM.	Perceived usefulness, perceived ease of use, perceived self-efficacy, attitude and intention	Quantitative method	805 e-customers	Telephone scale	Structural equation model
Kallaya,Prasong, & Kittima	2009	Journal	Education (mobile learning)	To evaluate mobile learning acceptance of higher education	Perceived ease of use, p. usefulness, attitude and intentions	Mixed method	390 students	Questionnaire Interview	Regression analysis

Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
				students in Thailand in the light of TAM.					
Lee, Yoon & Lee	2009	Journal	Education	To reveal e-learning of people in country with respect to TAM.	Perceived usefulness: ease of use, intention	Quantitative method	250 undergraduate students who had attended at least one e-learning class	Scale	Structural equation model
Liao, Palvia and Chen	2009	Journal	Education (Cyber University System)	To compare TAM, ECM, and COG models in the context of education.	Perceived ease of use, perceived usefulness, attitude, confirmation, satisfaction and intention	Quantitative method	626 students	Scale	Structural equation model
Mouakket	2009	Journal	Online shopping	To investigate two elements of TAM (perceived ease of use, perceived usefulness) and three exogenous factors' (computer self-efficacy, security issues, and features of a Website) relation.	Perceived ease of use, perceived usefulness, self-efficacy, security, features of Web-sites and intention	Quantitative method	324 students in a local university in the United Arab Emirates	Scale	Structural equation model
Palvia	2009	Journal	Online shopping (proposing a model-Unified TAM)	To develop a model included intention of online shopping and based on TAM.	Perceived usefulness, perceived ease of use, beliefs, trust, attitude, intention, satisfaction, value, customer loyalty, word of amount	Quantitative method	420 people	Scale	Structural equation model
Roca, García, & de la Vega	2009	Journal	Financial trading	To develop an extended TAM in online financial trading and test the extended model.	Perceived ease of use, perceived usefulness, perceived trust, perceived security and intention	Quantitative method	180 students in an advanced undergraduate course in financial markets	Scale mainly adapted from relevant prior studies	Structural equation model

Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
Shen & Chiou	2009	Journal	Online shopping (laptop & book)	To examine the role of perceived ease based on short and long-term transaction expectation and type of product on security.	Perceived ease of use, temporal distance and perceived risk	Quantitative method	Study 1: 209 business school undergraduate and graduate students Study 2: 240 business school undergraduate and graduate students	A paper-and-pencil questionnaire	t-test ANOVA
Teo	2009	Journal	Education	To develop a model for pre-service teachers at a teacher training institute in Singapore in the context of technology usage.	Perceived usefulness, perceived ease of use, attitude, computer self-efficacy, and intention	Quantitative method	474 pre-service teachers	Questionnaire	Structural equation model
Turner, Kitchenham, Brereton, Charters & Budgen	2009	Journal	Technology usage	To test TAM in the context of technology usage.	Actual use, perceived ease of use, perceived usefulness and intentions	Quantitative method	73 article	-	Meta-analysis
Chen	2010	Journal	Education	To investigate the factors which effect preservice teachers' technology usage.	Use, belief, efficacy and other variables	Quantitative method	206 preservice teachers	Questionnaire	Structural equation model
Nayak, Priest & White	2010	Journal	Using Internet	To evaluate older adults' technology usage in the light of TAM.	Perceived usefulness, perceived ease of use, attitude and relevance	Quantitative method	592 adults aged 60-88 years	Questionnaire	Regression analysis
Sun, Tai and Tsai	2010	Journal	Online shopping	To build a model that depicts the role of motivational factors on perceived ease of	Perceived ease of use	Quantitative method	300 people living in Midwestern metropolitan area in the United States	Scale	Structural equation model

Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
				use regarding e commerce experiences.					
Yang	2010	Journal	Technology usage (mobile Internet)	To analyze the differences between American and Korean consumers' behavior of mobile Internet usage.	Self-efficacy, innovativeness, perceived ease of use, perceived usefulness, attitude and intention	Quantitative method	200 mobile service users	Scale	Structural equation model
Wen, Prybutok & Xu	2011	Journal	Online shopping	To investigate the utilitarian, hedonic factor and social/psychological factors on consumers' intention.	Perceived ease of use and perceived usefulness	Quantitative method	230 college students	Questionnaire	Structural equation model
Wu, Zhao, Zhu, Tan & Zheng	2011	Journal	Review	To conduct a meta-analysis for the importance of trust in TAM.	Perceived ease of use, perceived usefulness, trust, attitude and intention	Quantitative method	103 studies	-	Meta-analysis (Direct effect)
Choi & Chung	2013	Journal	Social networking sites (SNS)	To determine the reasons of using SNS in the light of TAM.	P.usefulness:ease of use, subjective norm:social capital and intention	Quantitative method	179 graduate students were recruited from a college	Scale	Path Analysis
Rese, Schreiber & Baier	2014	Journal	Online shopping (the mobile IKEA catalogue app)	To test the role of text mining and the critical incident technique on technology usage in shopping.	P.ease of use, perceived usefulness, attitude and intention	Quantitative method	275participants	Questionnaire	Structural equation model

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Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
Amaro & Duarte	2015	Journal	Online shopping (travel online)	To investigate the importance of factor in online travel shopping in the context of TAM.	Intention, attitude, perceived risk, trust and TRA variable	Quantitative method	1732 Internet users	Questionnaire	Structural equation model
Sahli & Legoherel	2016	Journal	Tourism sector	To compare tourism booking intention online and other ways.	P.ease of use:usefulness, trust: risk, benefit, compability, subjective norms, enjoyment, attitude and intention	Quantitative method	389 Tunisian consumers	Questionnaire	Factor analysis Structural equation model

APPENDIX A2. National-based Researches Regarding Technology Acceptance Model (TAM)

| Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
Kiraz & Özdemir	2003	Journal	Education	To suggest a new model of technology acceptance which includes educational ideology as an external factor.	Perceived ease of use, perceived usefulness and attitudes	Quantitative method	320 pre-service teachers	Scale	Item analysis, Factor analysis,
Çelik & İpçioğlu	2006	Journal	Technology usage	To build a model for students' acceptance of Internet and to test the proposed model.	Perceived usefulness, ease of use, enjoyment, technology anxiety and subjective norms	Quantitative method	306 students	Scale	Structural equation model
Turan	2008	Journal	Online shopping (proposing extended TAM)	To extend TAM in Information and Communication Technologies field.	Perceived ease of use, perceived usefulness, suitability, intention, attitude and actual use	-	-	-	Review
Turan & Çolakoğlu	2008	Journal	Technology usage	To test TAM among students. in universities in Turkey	Perceived usefulness, perceived ease of use, subjective norm and attitude	Quantitative method	200 academicians	Scale	Structural equation model
Çakır, C.B.	2009	Journal	Online shopping (travel ticket)	To develop a model for explaining consumers' behavior of buying travel ticket in the light of TAM.	Perceived ease of use, perceived usefulness, risk and subjective norm	Quantitative method	348 individuals	Scale	Regression analysis SEM
Çelik	2009	PhD Dissertation	Online shopping (extending TAM)	To extend TAM to identify Turkish consumers' electronic shopping behavior.	P.ease of use:usefulness, enjoyment, trust, attitude and intention	Quantitative method	606 people	Scale	Structural equation model
Turan & Özgen	2011	Journal	Tax management system	To investigate the major reasons of using Turkish Tax Management System	Intention, perceived use, perceived ease of	Quantitative method	353 students in Aydın University	Online scale	Structural equation model

Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
				regarding e-TAM.	use, usefulness, self-efficacy				
Özer, Özcan & Aktaş	2010	Journal	Technology usage	To examine why accountants use information technology in the light of TAM.	Intention, attitude: ease of use and p.usefulness	Quantitative method	456 accountants	Scale	Regression analysis
Turan & Çetinkaya	2010	Journal	Technology usage of secretaries	To test secretaries' technology usage in İzmir in the context of TAM.	P. usefulness:ease of use, attitude, subjective norm, compatibility and intention	Quantitative method	200 secretaries	Scale	Structural equation model
Çelik, Yılmaz & Pazarlıoğlu	2010	Journal	Online shopping	To evaluate the reasons behind consumers' intention to use e-commerce in the scope of TAM.	Perceived usefulness, perceived ease of use, extrinsic factors, intention and actual use	Quantitative method	410 individual	Scale	Structural equation model
Çelik & Yılmaz	2011	Journal	Online shopping (extending TAM)	To extend TAM for explaining consumers' behaviors and tendencies to shopping online in Turkey.	Perceived ease of use, perceived usefulness, enjoyment, trust, attitude and intention	Quantitative method	606 people	Scale	Structural equation model
Özer & Yılmaz	2011	Journal	Technology usage	To compare TRA and TPB within the context of accountants' IT usage.	Attitude, subjective norms:behavioral control, intention	Quantitative method	437 accountants	Scale	Regression analyses
Turan	2011	Master's thesis	Education	To examine teachers' technology acceptance considering TAM.	Perceived usefulness, perceived ease of use, self-efficacy, subject norm, intention	Quantitative method	508 teachers	Scale	Regression analyses
Çakır	2012	PhD Dissertation	Online shopping	To evaluate customers' adoption process of online shopping in the light of TAM.	P. ease of use: usefulness, enjoyment, trust, subjective norm, intention	Mixed method	1115 people	Scale Interview	Structural equation model

Author(s)	Year	Source Type	Subject &Scope	Purpose	Factors	Method	Sample	Tool	Analyze
Avcı-Yücel & Gülbahar	2013	Journal	Review	To review of researches on TAM.	All variables related to TAM	Qualitative method	50 papers published between the years 1999 and 2010	-	Content analysis
Türker & Özaltın-Türker	2013	Journal	Tourism sector	To analyze why tourist buy product online in the light of TAM.	P.usefulness: ease of use, intention, behavior	Quantitative method	216 tourists who visited Kapodokya	Scale	Structural equation model
Çetinsöz	2015	Journal	Tourism sector	To determine the e-purchase tendency of domestic tourists' in touristic goods or services within the TAM.	P.usefulness: ease of use, trust, perceived risk, attitude and intention	Quantitative method	358 academic personnel and officers	Scale based on TAM	Structural equation model
Tümtürk	2015	PhD Dissertation	Online shopping	To investigate factors affecting online shopping intention	P.ease of use:usefulness, trust, subject norm:enjoyment, attitude, intention	Quantitative method	680 people	Online scale	Structural equation model
Yılmaz & Tümtürk	2015	Journal	Online shopping	To investigate factors affecting online shopping intention using extended TAM and suggesting a model.	P. ease of use: usefulness, trust, subject norm:enjoyment, attitude, intention	Quantitative method	680 people	Online scale	Structural equation model
Kubaş et.al.	2016	Journal	Online shopping	To analyze customers' online shopping behavior and attitudes examining factors behind this.	Perceived usefulness, perceived easiness, perceived enjoyment, intention and perceived risk	Quantitative method	197 people living in Tekirdağ	Scale	Structural equation model

APPENDIX A3. Analysis of Researches Given in the Tables above Regarding Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) is one of the outstanding theory in the literature. There were many researches to validate the model and the model has been adapted into different disciplines. To analyze researches conducted on TAM, 115 studies were investigated.

Among the 115 studies, 20 of them were national-based researches while rest 95 were international-based researches.
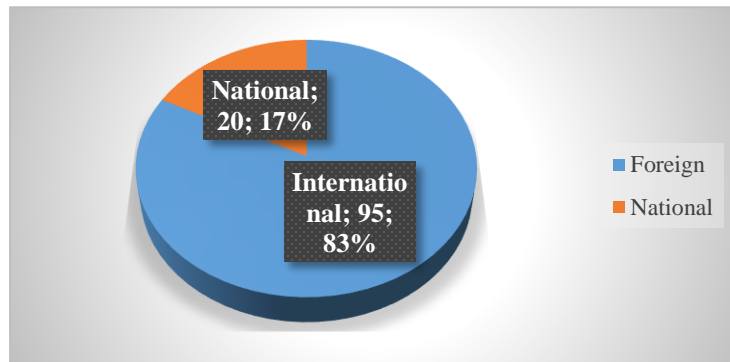
Researches conducted in national and international environment regarding TAM

Most of the reviewed studies (n =107) were journal articles. Five of them were PhD thesis, two of them were proceedings and one of them was a master's thesis.
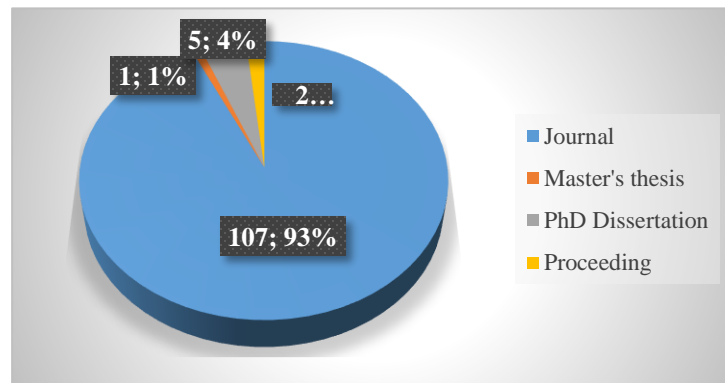
Type of researches

The frequencies of studies by years are as follow:

	Frequency	Percent	Valid Percent	Cumulative Percent
1985	1	,9	,9	,9
1989	2	1,7	1,7	2,6
1991	1	,9	,9	3,5
1993	2	1,7	1,7	5,2
1994	1	,9	,9	6,1
1995	2	1,7	1,7	7,8
1996	1	,9	,9	8,7
1997	1	,9	,9	9,6
1998	1	,9	,9	10,4
1999	1	,9	,9	11,3
2000	2	1,7	1,7	13,0
2001	5	4,3	4,3	17,4
2002	4	3,5	3,5	20,9
2003	11	9,6	9,6	30,4
2004	12	10,4	10,4	40,9
2005	5	4,3	4,3	45,2
2006	8	7,0	7,0	52,2
2007	6	5,2	5,2	57,4
2008	8	7,0	7,0	64,3
2009	18	15,7	15,7	80,0
2010	7	6,1	6,1	86,1
2011	5	4,3	4,3	90,4
2012	1	,9	,9	91,3
2013	3	2,6	2,6	93,9
2014	1	,9	,9	94,8
2015	4	3,5	3,5	98,3
2016	2	1,7	1,7	100,0
Total	115	100,0	100,0	

The methods of the studies are as follow:

	Frequency	Percent	Valid Percent	Cumulative Percent
Mixed method	4	3,5	3,5	3,5
Qualitative method	2	1,7	1,7	5,2
Quantitative method	99	86,1	86,1	91,3
Quantitative method (Cross-country study)	2	1,7	1,7	93,0
Quantitative method (Experimental)	3	2,6	2,6	95,7
Quantitative method (Longitudinal study)	2	1,7	1,7	97,4
Quantitative method (Semi-experimental method)	1	,9	,9	98,3
Review	2	1,7	1,7	100,0

The subjects/scope of the studies are as follow:

	Frequency	Percent	Valid Percent	Cumulative Percent
Art mining technology	1	,9	,9	,9
Banking and engineering sectors.	1	,9	,9	1,7
e-commerce	7	6,1	6,1	7,8
eCRM (electronic Customer Relationship Management)	1	,9	,9	8,7
Education	11	9,6	9,6	18,3
Financial trading	1	,9	,9	19,1
Health sector	3	2,6	2,6	21,7
Internet usage	1	,9	,9	22,6
Marketing	1	,9	,9	23,5
Mobile commerce	1	,9	,9	24,3
Mobile payments system	1	,9	,9	25,2
Online brokerage	1	,9	,9	26,1
Online shopping	21	18,3	18,3	44,3
Online shopping (books)	2	1,7	1,7	46,1
Online shopping (CDs, book)	1	,9	,9	47,0
Online shopping (extending TAM)	6	5,2	5,2	52,2
Online shopping (laptop & book)	1	,9	,9	53,0
Online shopping (PChome Online in Taiwan)	2	1,7	1,7	54,8
Online shopping (the mobile IKEA catalogue app)	1	,9	,9	55,7
Online shopping (travel)	3	2,6	2,6	58,3
Online shopping (vendors Web site)	1	,9	,9	59,1
Online shopping (virtual store)	2	1,7	1,7	60,9
Online shopping (Website of a shopping mall)	1	,9	,9	61,7
Review	7	6,1	6,1	67,8
Sensory enabling technology	1	,9	,9	68,7
Social networking sites (SNS)	1	,9	,9	69,6
Sport organizations	1	,9	,9	70,4
Supermarket use	1	,9	,9	71,3
Tax management system	1	,9	,9	72,2
Technology usage	16	13,9	13,9	86,1
Technology usage (testing TAM in different cultures)	1	,9	,9	87,0
Technology usage (microcomputer technology)	1	,9	,9	87,8
Technology usage (mobile Internet)	2	1,7	1,7	89,6
Technology usage (reliability and validity Davis' scale)	1	,9	,9	90,4
Technology usage of secretaries	1	,9	,9	91,3
Tourism sector	3	2,6	2,6	93,9
Using cc mail	1	,9	,9	94,8
Using Internet	1	,9	,9	95,7
Work related system	1	,9	,9	96,5
WWW	4	3,5	3,5	100,0
Total	115	100,0	100,0	

The frequencies of TAM's variables used in different studies and periods are as follow

Factors of TAM	Frequencies
Perceived usefulness	96
Perceived ease of use	92
Intention	85
Attitude	57
(Perceived) trust	33
Subjective norms	21
Enjoyment	18
(Perceived) risk	13
Self-efficacy	13
(Perceived) adoption	12
(Perceived) control	11
Satisfaction	9
Actual use	6
Beliefs	6
Security	6
Innovativeness	5
Compatibility	4
Customer loyalty	4
Social influence	3
Suitability	2
(Perceived) benefit	2
Store familiarity	1
Cultural affinity	1
Social presence	1

APPENDIX B. Original Scale

Please indicate the extent to which you agree or disagree with the following statements. (Anchored by 1—strongly disagree and 7—strongly agree.)

The Internet enables (will enable) me to complete shopping quickly. (Useful 1)*

The Internet makes (will make) it easy to do comparison shopping. (Useful 2)

The Internet gives (will give) me access to useful shopping information. (Useful 3)

Learning to use the Internet for shopping was (would be) easy for me. (Ease 1)*

I believe that Internet shopping is (will be) cumbersome. (Ease 2)**

Using the Internet for shopping is (will be) frustrating. (Ease 3)**

Using the Internet to shop for product/services is compatible (will be compatible) with the way I like to shop. (Comp 1)

Using the Internet to shop fits (will fit) with my lifestyle. (Comp 2)

My privacy would be compromised on the Internet. (Privacy 1)**

Internet retailers cannot be trusted to safeguard my privacy. (Privacy 2)**

Using credit cards to make purchases on the Internet is safe. (Security 1)

In general, making payments on the Internet is secure. (Security 2)

I am (expect to become) proficient in using the Internet for shopping. (Efficacy 1)

 I feel (would feel) confident that I can use the Internet for shopping. (Efficacy 2)

Using the Internet for shopping is (would be) a good idea. (Attitude 1)

I like (would like) using the Internet for shopping. (Attitude 2)

I use (intend to use) the Internet frequently to do my shopping. (Intent 1)

I use (intend to use) the Internet whenever appropriate to do my shopping. (Intent 2)

Please indicate the probability that you will shop using the Internet in the near future. (Anchored by 1—very improbable and 7—very probable.) (Intent 3)

Scale items for normative beliefs

Please identify three people (spouse, parent, sibling, child, friend, co-worker, etc.) who are important to you and whose opinions you value. Then, for each identified person, indicate the likelihood that they would recommend that you shop using the Internet. (Anchored by 1—very unlikely and 7—very likely.)

 * Item was dropped after factor analysis. ** Item was reverse coded.

APPENDIX C. Permission of Adaptation Scale

Kenan ATEŞGÖZ
Today, 09:24

Dear Professor;

Thank you for your great help. This will be a huge contribution to my study.

Best regards.

...

Vijayasarathy.Leo <Leo.Vijayasarathy@ColoState.EDU>
Today, 01:08

Sure Kenan. No problem. Please make sure that you cite the source of the survey.

Good luck with your study.

Leo Vijayasarathy, Ph.D.
Professor, CIS | Director, MCIS Program
College of Business
Rockwell 155 | Fort Collins, CO 80523-1277
970-491-0607 | Leo.Vijayasarathy@colostate.edu

COMPUTER INFORMATION SYSTEMS
COLORADO STATE UNIVERSITY

...

Kenan ATEŞGÖZ
Yesterday, 00:46
vijayasa@colostate.edu

Dear Professor,

I am e-mailing you from Turkey. I am a research assistant working in Anadolu University in the department of journalism. I am currently working on my master dissertation which encompasses online shopping attitudes of young students as based on Technology Acceptance Model (TAM). In this sense, I want to use your prestigious survey which was developed in 2004 for the article named "Predicting consumer intentions to use on-line shopping: the case for an augmented technology acceptance model" in my data collection process.

Therefore, I kindly ask for your valuable allowance to translate into Turkish and use in my study.

Thank you in advance.

Best regards.

Research Assistant Kenan ATESGOZ
Anadolu University/Turkey.

APPENDIX D. Adapted Scale

Değerli Katılımcı,

Bu ölçek, Genişletilmiş Teknoloji Kabul Modeli (g-TKM) kapsamında Y ve Z kuşaklarının Internet alışverişlerine yönelik tutumlarını karşılaştırmak amacıyla yürütülen yüksek lisans tez çalışması kapsamında hazırlanmıştır.

Çalışmaya katılım tamamen gönüllülük esasına dayanmaktadır. Araştırma sürecinde elde edilen veriler gizli tutulacak olup, sorulara vereceğiniz samimi yanıtlar araştırmanın geçerliliği açısından büyük önem taşımaktadır.

Çalışmaya sağladığınız katkılardan dolayı teşekkür ederiz.

Araş. Gör. Kenan ATEŞGÖZ   **Prof. Dr. Cemil ULUKAN**
Anadolu Üniversitesi Sosyal Bilimler Enstitüsü   Anadolu Üniversitesi
İşletme Yönetimi Anabilim Dalı   İktisadi ve İdari Bilimler Fakültesi
Yüksek Lisans Öğrencisi   İşletme Yönetimi Anabilim Dalı
e-posta: katesgoz@anadolu.edu.tr

I. BÖLÜM-DEMOGRAFİK BİLGİLER

1. Cinsiyetiniz?   Kadın ☐   Erkek ☐

 2. Yaşınız? ....

3. Fakülteniz? ....   Bölümünüz?   ....

4. Sınıfınız?   **Hazırlık** ☐   **1** ☐   **2** ☐   **3** ☐   **4** ☐

 5. Ailenizin **aylık** toplam geliri? ....(TL)

 6. Öğrenci olarak **aylık** elinize geçen toplam para? ....(TL)

II. BÖLÜM: İNTERNET KULLANIMI

 7. Ne kadar süredir Internet kullanıyorsunuz?

Kullanmıyorum ☐   2 yıldan daha az ☐   2 – 4 yıl arası ☐

5 – 7 yıl arası ☐   8-10 yıl arası ☐   10 yıl ve üstü ☐

 8. Yaklaşık olarak **haftalık** Internet kullanımınız (saat) ? ....

9. Son üç ayda yaklaşık olarak **kaç defa** Internetten ürün ve hizmet satın alımı gerçekleştirdiniz? ....

10. Son üç ayda Internetten alışverişlerinize yaklaşık olarak **ne kadar** harcadınız? (TL) ....

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III. BÖLÜM

Lütfen aşağıdaki ifadelere hangi derecede katıldığınızı ya da katılmadığınızı belirtiniz. (1-Kesinlikle Katılmıyorum ve 7-Kesinlikle Katılıyorum derecelendirme aralığına bağlı kalarak). Size en uygun olan seçeneği (X) ile işaretleyiniz.

İnternetten Alışverişe İlişkin İfadeler	Kesinlikle Katılmıyorum	Katılmıyorum	Kısmen Katılmıyorum	Ne Katılıyorum Ne katılmıyorum	Kısmen Katılıyorum	Katılıyorum	Kesinlikle Katılıyorum
İnternet, alışverişi hızlıca yapmama olanak tanımaktadır.							
İnternet, karşılaştırmalı alışveriş yapmamı kolaylaştırmaktadır.							
İnternet, alışverişlerim için yararlı bilgilere ulaşma imkânı vermektedir.							
Alışveriş yapmak için İnterneti nasıl kullanacağımı öğrenmek benim için kolay oldu.							
İnternetten alışverişin külfetli olduğuna inanırım.							
İnterneti alışveriş için kullanmak sinir bozucudur.							
İnternetten alışveriş, yapmayı sevdiğim alışveriş tarzına uygundur.							
İnternetten alışveriş, yaşam tarzımla uyuşmaktadır.							
İnternet ortamında mahremiyetimin tehlikede olduğunu düşünürüm.							
Mahremiyetimin korunması konusunda İnternet hizmeti sağlayanlara güvenmem.							
Kredi kartı kullanarak İnternetten alışveriş yapmak güvenlidir.							
İnternetten ödeme yapmak genel anlamda, güvenlidir.							
Alışveriş amacıyla İnternet kullanımı iyi bir fikirdir.							
Alışveriş amacıyla İnterneti kullanmaktan hoşlanırım.							

APPENDIX E. Approval of Ethical Committee

ANADOLU ÜNİVERSİTESİ

SOSYAL VE BEŞERÎ BİLİMLER BİLİMSEL ARAŞTIRMA VE YAYIN ETİĞİ KURULU

KARAR BELGESİ

ÇALIŞMANIN TÜRÜ:	Yüksek Lisans Tez Çalışması
KONU:	Sosyal Bilimler
BAŞLIK:	Genişletilmiş Teknoloji Kabul Modeli (g-TKM) Kapsamında Y ve Z Kuşaklarının Çevrimiçi Alışverişe Yönelik Tutumlarının Karşılaştırılması
PROJE/TEZ YÜRÜTÜCÜSÜ:	Prof. Dr. İbrahim Cemil ULUKAN
TEZ YAZARI:	Kenan ATEŞGÖZ
ALT KOMİSYON GÖRÜŞÜ:	-
KARAR:	Olumlu

Prof.Dr. Coşkun BAYRAK
(Başkan-Eğitim Fak.)

Prof.Dr. R Volkan YÜZER	Prof.Dr. Esra CEYHAN
(Başkan Yardımcısı-Açıköğretim Fak.)	(Eğitim Fak.)
Prof.Dr. Münevver ÇAKI	Prof.Dr. M. Erkan ÜYÜMEZ
(Güzel Sanatlar Fak.)	(İkt. ve İdari Bil. Fak.)
Prof.Dr. Handan DEVECİ	Prof.Dr. Emel ŞIKLAR
(Eğitim Fak.)	(İkt. ve İdari Bil. Fak.)