



COMPARING ONLINE SHOPPER AND NON-SHOPPER ELDERLY CONSUMERS BASED ON THE THEORY OF PLANNED BEHAVIOR: HOW DO THE DEMOGRAPHIC FACTORS MAKE A DIFFERENCE?

ÇEVİRİMİÇİ ALIŞVERİŞ YAPAN VE ALIŞVERİŞ YAPMAYAN YAŞLI TÜKETİCİLERİN PLANLI DAVRANIŞ TEORİSİNE GÖRE KARŞILAŞTIRILMASI: DEMOGRAFİK FAKTÖRLER NASIL FARK YARATIR?

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Öz

Dünya nüfusu gittikçe yaşlanmasına rağmen yaşlı tüketiciler hem pazarlama literatürü hem de işletmeler tarafından ihmal edilmiş bir grubu oluşturmaktadır. Yaşlanma, tüketiciler için alışveriş yapma konusunda zorluklara neden olabilir ve genellikle genç tüketiciler ile ilişkilendirilen online alışveriş, yaşlı tüketicilerin ihtiyaç duydukları ürünlere daha kolay erişimini sağlayabilir. Mevcut araştırmalar, yaşlı tüketicilerin online alışverişi karmaşık bulunduğunu, genç tüketicilere kıyasla daha az kullandıklarını gösterse de yaşlı tüketiciler de kendi içlerinde homojen bir grup değildir. Bu makale, online alışveriş deneyimi olan ve olmayan 55 yaş üstü, 243 tüketiciyi demografik faktörler açısından karşılaştırarak yaşlı tüketicilerin online alışveriş davranışlarını anlamamıza yardımcı olmaktadır. Araştırma kapsamında kartopu yöntemi ile seçilmiş, online erişimi olan katılımcılara yüz yüze anket uygulanmıştır. Bulgular, online alışveriş yapan ve yapmayan yaşlılar arasında cinsiyetin belirleyici bir faktör olmadığını; buna karşın aralarında yaş, eğitim ve gelir düzeyi açısından farklılıklar olduğunu göstermektedir. Bu çalışmada, Planlı Davranış Teorisi kullanılarak iki grup tüketici; online alışveriş yapma niyetleri, online alışverişe yönelik tutumları, algılanan davranışsal kontrol ve öznel normlar açısından karşılaştırılmıştır ve iki grup arasında bu faktörlerin hepsi açısından anlamlı fark olduğu bulunmuştur. Katılımcıların demografik özellikleri ise özellikle davranışsal kontrol değişkeni üzerinde farklılık yaratmaktadır. Bulgular bağlamında yaşlı tüketicilerin online alışveriş yapabilme konusunda kendilerine olan güvenlerini artırıcı stratejiler uygulanması önemli görünmektedir.

Anahtar Kelime: Yaşlı Tüketiciler, Online Alışveriş, Planlı Davranış Teorisi, Demografik Özellikler

Abstract

Although the world population is aging, elder consumers constitute a neglected segment by both the marketing literature and the companies. Aging may lead to shopping difficulties for consumers, and online shopping which is mostly associated with younger consumers may provide elderly people easy access to the products needed. Although current research shows that older consumers find online shopping complicated and use it less, elderly people are not a homogenous group. This article expands our understanding of online shopping behavior of elderly consumers by comparing 243 elder consumers over 55 who had previous online shopping experience with the consumers without such an experience in terms of their demographic characteristics. Respondents that have online access are selected by snowball sampling, and data are collected face to face. The findings show that while gender does not make a difference, online shoppers and non-shopper respondents are different in terms of age, education and income. Theory of Planned Behavior is used to explore the future online shopping intentions of the two groups, their attitudes towards online shopping, perceived behavioral control, and subjective norms. There are statistically significant differences between the two groups in terms of all the dimensions of TPB. At the same time, the findings of the research show the importance of elderly consumers' demographic characteristics, especially for the perceived behavioral control dimension of the TPB. Thus, strategies that will increase the self-confidence of older consumers about their capabilities to shop online seem important.

Keywords: Older Consumers, Online Shopping, Theory of Planned Behavior, Demographic Characteristics

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Genişletilmiş Özet

Dünya nüfusu gittikçe yaşlanmasına rağmen, yaşlı tüketiciler yakın zamana kadar pazarlama literatürü tarafından ihmal edilen bir kitleyi oluşturmaktadır. İşletmeler de genellikle pazarlama stratejilerini genç tüketicileri hedef olarak oluşturmaktadırlar. Her ne kadar günümüzde alışverişin hedonik boyutu çok vurgulansa da insanların temel ihtiyaçlarını karşılayabilmesinin önemli aracıdır ve nasıl alışveriş yaptığımız da kişinin sınırlılıkları ve yeteneklerinden etkilenmektedir. Araştırmalar, yaşlanmanın getirdiği bazı etkilerin alışveriş yapma konusunda zorluklara ve sınırlamalara neden olduğunu göstermektedir. Oysa genellikle genç tüketiciler ile ilişkilendirilen online alışveriş, yaşlı tüketicilerin ihtiyaç duydukları ürünlere daha kolay erişimini sağlayabildiği gibi, fiyat açısından farklı seçenekler sunabilmektedir. 2020 yılında karşılaşılan COVID-19 Pandemisi online alışverişin yaşlı tüketiciler için önemini artırmıştır. Mevcut araştırmalar, yaşlı tüketicilerin online alışverişini karmaşık bulduğunu, genç tüketicilere kıyasla daha az kullandıklarını gösterse de yaşlı tüketiciler de kendi içlerinde homojen bir grup değildir. İnternet kullanıcısı olan ve online alışverişe katılan pek çok yaşlı tüketicinin olduğu bilinmektedir. Bu bağlamda, online alışveriş yapan ve yapmayan yaşlı tüketicileri karşılaştırmak, aralarında hangi faktörler açısından fark olduğunu ortaya koyabilmek önemli görünmektedir. Dolayısı ile bu makalenin temel amacı, yaşlı tüketicilerin online alışveriş yapmalarında demografik faktörlerin etkisini hem bağımsız olarak hem de Planlı Davranış Teorisi kapsamında anlamaya çalışmaktır. Planlı Davranış Teorisi, insanların online alışveriş davranışlarını anlamak gibi, farklı sosyal davranışlarını tahmin etmekte kullanılan önemli bir teoridir ve daha önce de birkaç araştırmada genel tüketicilerin online alışveriş niyetlerini tahmin etmek için kullanılmıştır. Literatürde, tüketicilerin online alışveriş niyetlerini etkileyen demografik faktörler ile ilgili araştırmalarda farklı sonuçlara ulaşılmıştır. Yaşlı tüketicilerin online alışveriş davranışları ile ilgili bulgular daha çok genç ve yaşlıların birlikte ele alındığı örneklemelere dayalıdır ve yaşlı tüketicileri kendi içlerinde karşılaştıran araştırmalar sınırlıdır. Bu çalışmanın, aslında kendi içinde homojen bir grup olmayan yaşlı tüketicilerin online alışveriş davranışlarını açıklayabilmek açısından önemli olduğu düşünülmektedir. Bu araştırmada, online alışveriş deneyimi olan ve olmayan 55 yaş üstü, 243 tüketici demografik faktörler açısından karşılaştırılmıştır. Bulgulara göre araştırmaya katılanların 115'i, daha önce online alışveriş yapma deneyimine sahip iken 128 kişi online alışveriş yapmamıştır. Araştırma kapsamında örneklem kartopu yöntemi ile seçilmiş, online alışveriş için bir gereklilik olan akıllı telefon, bilgisayar/tablet aracılığı ile online erişime sahip olan katılımcılara yüz yüze anket uygulanmıştır. Elde edilen verilerin analizinde yüzde/frekans analizi, faktör analizi, Ki-kare Testi, Anova Testi ve bağımsız örneklem T-Testi kullanılmıştır. Analizler SPSS programı aracılığı ile gerçekleştirilmiştir. Bulgular, online alışveriş yapan ve yapmayan yaşlılar arasında cinsiyetin belirleyici bir faktör olmadığını; buna karşın iki grup arasında yaş, eğitim ve gelir düzeyi açısından istatistiki olarak fark olduğunu göstermiştir. Online alışveriş deneyimi olan tüketiciler; nispeten daha genç, daha eğitilmiş ve daha yüksek gelir düzeyine sahiptir. Bu çalışmada, Planlı Davranış Teorisi kullanılarak iki grup tüketici; online alışveriş yapma niyetleri, online alışverişe yönelik tutumları, algılanan davranışsal kontrol ve öznel normlar açısından karşılaştırılmıştır. Bu araştırmada tutum; bireyin online alışverişe yönelik olumlu ya da olumsuz düşüncelerini, subjektif norm; online alışveriş yapabilme ile ilgili sosyal etkileri nasıl algıladığını, algılanan davranışsal kontrol ise bireyin online alışveriş yapma ile ilgili kendi kısıtlamalarını ya da yeterliliklerini nasıl algıladığını ifade etmektedir. Online alışveriş yapan ve yapmayan katılımcılar arasında bu faktörlerin hepsi açısından anlamlı istatistiki fark olduğu bulunmuştur. Katılımcıların demografik özellikleri olan yaş, cinsiyet, gelir ve eğitim düzeyinin online alışveriş yapma niyetleri, online alışverişe yönelik tutumları ve subjektif norm açısından etkili olmadığı görülmüştür. Online alışverişe yönelik tutumlar, yaş arttıkça azalmasına rağmen yaş grupları arasındaki fark istatistiki olarak anlamlı değildir. Araştırmada, demografik özelliklerin hepsinin davranışsal kontrol algısı üzerinde farklılık yarattığı bulunmuştur. Yaş arttıkça, eğitim düzeyi azaldıkça, gelir düzeyi azaldıkça katılımcıların online alışveriş yapabilme konusunda kendi yeteneklerine inançları ve güvenleri azalmaktadır. Bulgular bağlamında, yaşlı tüketicilerin online alışveriş yapabilme konusunda kendilerine olan güvenlerini artırıcı stratejiler uygulanması önemli görünmektedir. Yaşlı tüketicilerin internet kullanımını arttırmak ve güvenli alışveriş yapabilmelerini sağlamak konusunda hem özel sektör hem de kâr amacı olmayan örgütlerin tüketicileri eğitmeleri ve teşvik etmeleri önerilebilir.

INTRODUCTION

Although today, shopping is considered an entertainment and a hedonic experience (Kim, 2006) by many people, it is a necessity for living. After all, it is generally the only way to get the products and services that will satisfy human needs and wants. How the consumers shop is considerably influenced by their abilities and limitations (Underhill, 2000 as cited in Yin et al., 2013). Aging may decrease the abilities of consumers needed for shopping at stores. As mentioned by Herne (1995), aging has been closely linked to loss of agility and strength that makes shopping a challenge for the elderly (as cited in Yin et al., 2013). Thus, online shopping that is generally associated with young consumers (Lin et al., 2006; Lin, 2007; Lian & Yen, 2014) may be a more convenient way of getting things necessary for life and improving the life quality of old people. Based on a recent research about elder people's expectations and elderly practices, it was found that elderly people have extremely negative perceptions about aging and elderliness. Dependency on others, economic difficulties, and health problems were stressed among lots of them (Yalçın, 2019). Online marketing may provide a convenient shopping alternative for older people by decreasing dependence on others while increasing accessibility of cheaper product alternatives. The Corona Virus that has created a global health crisis in 2020 has highlighted the importance of online shopping especially for older people who are affected highly by the COVID-19. Stay at Home campaigns and/or declaring curfew in many countries made it harder for old people to get

the products they needed on an everyday basis if they lack online shopping abilities. In order to protect the old population from the Corona Virus, elder people faced restrictions in different countries including Turkey where people over 65 could only go out of home for 3 hours from 10-12 a.m. Thus, one of the key drivers of online shopping for older people is the opportunity to purchase services and goods while staying at home, which means they do not need to leave their homes to reach the needed product and service (Debicka, et al., 2018). There are, however, specific challenges associated with using the internet which is a requirement to shop online for elderly people. The research by the Nielsen Norman Group in 2013 showed that elderly users (those over 65 years old) were slower at using the Internet and were more likely to give up trying to accomplish buying something online, compared to those younger than 55 (ecommerceguide.com, n.d).

Although most of the older people share the belief that online shopping is difficult and complicated to be used (Soh et al., 2020), there is a number of researches showing older people's interest in online shopping (Debicka et al., 2018; Veenhof & Timusk, 2007). Leppel and McCloskey (2011) point to the large number of older people who are active internet users while the common perception is that old people are less likely to use technology, and therefore less likely to shop online. Soh et al. (2020) state the undeniable potential of old people in participating in online shopping activities. Since the existence of elderly people who are interested in online shopping and actually shop online is known, it becomes important to find the differences between elderly people who shop online and those who do not. In a great number of researches, demographic variables have been used to differentiate online buyers from non-buyers. Previous research has generally concluded that demographics have a significant impact on internet shopping behavior. Nevertheless, the effect of demographic factors on online shopping behavior of elderly people has revealed different findings (Chang et al., 2005; Zhou et al., 2007). This paper aims to make a contribution to this literature by exploring the demographic differences between elderly online shoppers and non-shoppers in the context of Turkey which is a developing country. In the related literature, older people's online shopping behavior is generally explored by using samples consisting of several generations also including the elderly respondents; thus, demographic comparisons are generally made between younger and older consumers. In this study, demographic differences among elderly consumers over age 55 will be explored. Older consumers do not constitute a homogenous market, so it is expected that elderly consumers with different demographic characteristics in terms of gender, age, education, marital status, and occupation may have different attitudes and exhibit different behaviors.

Another question that needs to be answered is why demographic characteristics make a difference on online shopping behavior of elderly people? We have used The Theory of Planned Behavior (TPB) which is one of the most influential models for the prediction of human social behavior (Ajzen, 2011) to compare different demographic groups of elderly respondents in terms of their intentions to shop online and their relevant attitudes, subjective norms and perceived self-control which are the determinants of behavior based on TPB.

1. THEORETICAL BACKGROUND

1.1. Older Consumers and Online Shopping

The world population is aging particularly in developed and developing countries. In most developed countries, older adults are the fastest-growing demographic group (Vicente & Lopes, 2016). The estimated population of people aged 60 and over was 962 million in 2017, and by 2050 it is projected to rise to almost 2.1 billion around the world (United Nations, 2017). Although Turkey is known as the youngest nation in Europe, the aging population in the country cannot be underrated. While 20-24% of the population was aged 60 and over in 2015, the expectation is around 25-29% by 2050 (World Health Organization, 2015). 73% of the population in Turkey are internet users. Online shopping has increased dramatically while 65 % of the internet users purchased a product or a service online by any device. Also, 39 % of the internet users used a computer or a laptop, while the remaining half shopped online by a mobile phone (Kemp, 2019). Although data about the percentage of elderly people among the online purchasers is not accessible, young people's dominance is highly expected.

Despite the size of the population, the older consumer market has been neglected (Kwon & Noh, 2010; Joung & Miller, 2006), and older consumers are not considered a target market with specific needs

and wants. However, older people have specific problems, needs and wants that may be satisfied by products and services specifically designed for them. Moschis (2012) divided chronological aging into broad categories as biological aging, psychological aging, social aging, life events and life circumstances. Based on Moschis' categorization it is apparent that older consumers may have different needs arising because of the biological, psychological, social changes and differences in their life circumstances and life events that come with chronological aging. Older consumers deserve more attention from researchers and practitioners to learn their specific needs and improve their life quality with specific offers to match their needs.

1.2 The Effect of Demographic Factors on Online Shopping

Although the effect of demographic factors is accepted, as it is mentioned above, studies about the effect of demographic variables on online shopping have ended up with contradictory findings. Previous research findings about the effect of mostly searched demographic characteristics as gender, age, education and income are summarized below.

Gender: Most of the previous findings about the effect of gender on online shopping found no difference with respect to gender. Van Slyke et al. (2002) found that men like to shop online more than women (Lian & Yen, 2014). After analyzing the findings of eight researches in 2005, Chang et al. stated that men were found to purchase online more in three of the studies while the other studies did not find any effect of gender on online shopping. Research by Gong et al. (2013) concluded that Chinese male and female consumers hold similar online shopping intentions. In the research by Lian and Yen (2014) conducted in Taiwan online experience of men and women was at similar rates, and they did not find a significant moderating effect of gender on the online shopping drivers and barriers for old people. In a relatively new research Kuoppamäki et al. (2017) did not find a significant difference between Finnish older men and women in terms of online shopping experience.

Age: The findings of most of the studies support the effect of age on online shopping experience although it is not possible to make a generalization. Relying on the review of six articles on the effect of age on online shopping, Chang et al. (2005) stated that three studies found a significant positive impact while the other three did not find any effect. In a research by Sorce et al. (2005) published in the same year and based on the data gathered from the students and staff of an American University, it was found that older consumers purchase online as much as younger consumers in spite of attitudinal and behavioral differences. Naseri and Elliot's findings (2011) suggested that the probability of adopting online shopping is significantly decreased as consumers' age increases. Based on their research Gong et al. (2013) indicated that Chinese consumers' age was one of the significant predictors of their Internet purchase intention like education and income. In a relatively new study in 2017 (Kuoppamäki et al., 2017), age was found to be a significant predictor of purchasing products or services online when other variables were controlled. In the study, it was found that 55-year-old Finnish respondents purchased online more compared to those aged over 60. Trocchia and Janda (2000) argue that older users' lack of experience with the internet keeps them from evaluating the advantages of online shopping, thereby hindering their participation. Online media was new in the 2000s not just for old people but for the younger as well. Today's older consumers have met online media at relatively younger ages, so different findings about the effect of age may be expected.

Education Level: Educational differences may influence Internet shopping behavior because better educated people are more likely to be exposed to Internet technology than those who have a lower education level (Hui & Wan, 2007). Chang et al. (2005) stated that out of 4 articles on the effect of education on online purchases, three studies found a significant positive impact while one did not find any. Relying on the review of the related literature, Zhou et al. (2007) noted that education level produces mixed effects ranging from no effect to a positive effect on online shopping and concluded that online shoppers are not necessarily more educated. Naseri and Eliot (2011) have found that the higher the education level, the higher the probability of being online shopping adopters. Depending on their empirical research, Kuppomäki et al. (2017) stated that having a university degree is the strongest predictor for mobile-based shopping. Their findings also supported the significance of education level for older people in the use of digital technology.

Income: Based on an extensive literature search to understand the dynamics of customer decisions to shop online, Chang et al. (2005) stated that five out of the 7 studies, found income to have a significant positive impact on online shopping intention while the others did not find any impact. In a later research, Zhou et al. (2007) concluded that income is positively related to online shopping tendency. In their research on Australian consumers, Naseri and Eliot (2011) found that the higher the education and income, the higher the probability of being online shopping adopters. Gong et al. (2013) have found a significant relationship between online shopping and income in their research on Chinese consumers. Relying on their research on Spanish consumers, Hernández et al. (2011) claimed that if consumers have gained some experience on online shopping, socioeconomic characteristics like age, gender and income have scarcely any significant effect on their future online shopping intentions.

1.3. The Theory of Planned Behavior

The theory of planned behavior is one of the most influential models for the prediction of human social behavior (Ajzen, 2011). In the case of online shopping, the theory may be used to predict if the consumers will participate in online shopping activity in the future. The intention is seen as the best determinant to explain a behavior (Ajzen, 1991 as cited in Herrero-Crespo & Rodriguez del Bosque, 2008). The Theory of Planned Behavior consists of three independent determinants which predict intention to perform any behavior. Intention can be interpreted as an individual's willingness to perform a certain behavior such as intention to shop online in the future. The determinants that predict intention are: (1) attitude toward behavior, (2) subjective norm, and (3) perceived behavioral control. Attitude toward behavior is about an individual's positive or negative thoughts on performing any behavior such as shopping online, subjective norm refers to the social influence related to performing a behavior or not, and perceived behavioral control is an individual's limitations or ease of performing any behavior (Ajzen, 1991).

From an extensive literature research of 45 articles on the adoption of online shopping, Chang et al. (2005) concluded that demographic variables may not generate the relationships, but they are caused by other deeper structure variables and emphasized the importance of investigating these variables. The Theory of Planned Behavior may help to understand why different demographic variables affect online shopping behavior. The Theory of Planned Behavior has been used by several researchers in the field of online shopping (Limayem et al., 2000; Hsu et al., 2006; Wang et al., 2007). Hansen (2008) argues that the theory is well suited to the research aiming to understand online shopping behavior. The related research mostly has used younger subjects (e.g. undergraduate students, younger consumers) as a sample since younger people are believed to be the potential consumers in e-commerce as they are considered tech-savvy (Lim et al., 2011). The Theory of Planned Behavior was used by fewer researchers to explain the online shopping intention of older consumers. Lim et al. (2011) investigated Malaysian baby boomers' online shopping intention by using the Theory of Planned Behavior. They used baby boomers who have never purchased online as the sample of their study. They found that attitude and subjective norm have an influence on online purchase intention, but interestingly, perceived behavioral control has no influence on online purchase intention. Also, they suggested several implications for marketing researchers who want to focus on this grey market (Lim et al., 2011). Another research by Chakraborty et al. (2016) compared the online shopping intention of older adults (above 55 years) and younger adults (below 55 years) within the context of post data breach by using the Theory of Planned Behavior. Chakraborty et al. (2016) found that trusting beliefs and attitude toward online shopping have a significant influence on older consumers' online shopping intention.

2. METHODS

2.1. Aims and Research Questions

This research tries to understand why some old people shop online while some do not. Comparing online shoppers and non-shoppers and exploring the demographic differences between the two groups is used as a way to understand elderly consumers' participation in online shopping activity in this study. We have made a further attempt to compare those respondents who have shopped online before and those without an online shopping experience in terms of their intentions to shop online and attitudes,

subjective norms, and perceived behavioral control that are the predictors of online shopping intention based on TPB.

Based on the objectives of the research, the following three questions are addressed:

1. Are there demographic differences among the elderly online shoppers and non-shoppers in terms of age, education, gender, and income?
2. Are there differences in future online shopping intentions, attitudes towards online shopping, subjective norms, perceived behavioral self-control between the elderly online shoppers and non-shoppers?
3. What is the effect of demographic characteristics of elderly respondents on their future online shopping intentions, attitudes towards online shopping, subjective norm and perceived behavioral control on online shopping?

2.2. Data Collection

In the marketing literature there are different views on the selection of the sample unit that will represent older consumers. While there are researches about elderly consumers where the data is gathered from respondents over 60 or 65 (Kuoppamäki et al., 2017; Ishikawa et al., 2016; Oeser et al., 2019), respondents over 50 and 55 are also used to represent older consumers (Young & Miller, 2006; Kwon & Noh, 2010; Ohemeng et al., 2019; Soh et al., 2020), especially in the context of developing countries. Thus, consumers older than 55 who have an internet access via a mobile phone and/or a desktop /laptop computer are selected to represent the population of the research. The snowball method was used as the sampling method to reach the respondents who have these characteristics since the method is offered in situations where there is a lack of information about the population (On-at et al., 2014). The sample consisted of 243 people out of which 115 had an online shopping experience while 128 of them did not shop online before. The questionnaires were administered face to face by the authors in 2019. The respondents participated to the survey on a voluntary basis. The researchers explained them the objective of the research and asked them if they would like to respond. The researchers read the questions to several respondents who had visual difficulty in reading the questions.

2.3. Measurements

Attitude in this research refers to the extent to which the elderly person perceives online shopping to be a favorable or unfavorable activity. Following 6 items adapted from Lim et al. (2011) are used to measure the attitude of the respondents towards online shopping: 1) I think shopping online is a good thing, 2) I think shopping online is essential nowadays, 3) I think online shopping is beneficial for consumers, 4) I think online shopping is a good idea, 5) I have a positive opinion about online shopping, 6) I like to shop online.

Perceived behavioral control described how the elderly consumers in this research perceived the availability of their knowledge, resources, and opportunities required for shopping online. Two items adapted from Lim et al. (2011) are used to measure this dimension: 1) I have the resources and knowledge to shop online, and 2) I have the self-confidence to use online shopping.

In the case of elderly people, other people's opinions are important to perform a behavior, especially if the behavior is new and complicated for them. Subjective norm was measured by the following 5 items adapted from To et al. (2007) to the specific situation of elderly people: 1) The people who have an influence on me think that I should shop online, 2) The people who are important to me encourage me to shop online, 3) My family thinks that I can shop online, 4) My friends think that I can shop online, 5) My acquaintances think that I can shop online.

Online shopping intention of older people is measured by 3 items adapted from Herrero Crespo and Rodriguez del Bosque (2008): 1) I have an intention to use online shopping in the next 6 months, 2) I hope that I will use the internet for shopping in the next 6 months, 3) I want to shop online in the next 6 months. The questionnaire also included questions about the demographic characteristics of the respondents.

3. RESULTS

Table 1 describes the demographic profile of the respondents. Some 62,6 percent of the respondents are female, and the majority of the respondents are between the ages 55 and 64. Due to the difficulty of collecting data from much older consumers, only 7, 8 % of the sample represented old people over 70. The majority of the respondents were retired. Although the respondents were diverse in terms of education level, the sample represents older people with a higher education level compared to the general population at these age intervals in Turkey. In terms of family, the biggest group which represents the 38.7 % of the sample consists of old people living with their spouses. About 18 % of the sample was living alone. Most of the respondents seem to represent the middle class in terms of their income.

Table 1. Sample Characteristics

	Frequency	Percentage
Gender		
Female	152	62,6
Male	91	37,4
Age		
55-59	92	37,9
60-64	87	35,8
65-69	45	18,5
>70	19	7,8
Marital Status		
Single	68	28
Married	175	72,0
Job Status		
Employed	47	19,3
Unemployed	32	13,2
Retired	164	67,5
Education		
Primary/secondary school	40	16,5
High school	55	22,6
Associate degree	43	17,7
Undergraduate, graduate, post graduate	105	43,2
Income		
<3000TL	115	47,3
3000TL – 4999TL	86	317,3
≥5000 TL	42	5,4
Family Type		
Living alone	44	18,1
Living with spouse	94	38,7
Living with spouse and children	75	30,9
Living with children	15	6,2
Other	15	6,2

3.1. Demographic differences between elderly online shoppers and non-shoppers

Out of 243 respondents, 52% did not have any online shopping experience before while 48 % (115) respondents have stated that they have shopped online before. This ratio suggests that shopper and non-shopper elderly people in our sample are distributed almost equally while nearly half of them have at least one online shopping experience. We have named two groups as online shoppers and non-shoppers. Elderly people in this research are not homogeneous; they represent different groups based on gender, age, income level, education. With regard to the first question to find out if online shopping experience of old people is related to their demographic characteristics, we compared two groups by independent chi- square tests. While no significant relation of gender with online shopping experience is found, the other demographic characteristics of online shopper respondents and non-shoppers are found to be significantly different. As it can be seen in Table 2, Chi- square test of independence by gender does not indicate statistically significant results. Although it was statistically not significant, the percentage of online shoppers is around 51,6 % for elderly men and 44,7 % for elderly women showing a higher interest of elderly men in online shopping.

Table 2. Chi-Square Test Results of Elderly Online Shoppers and Non-Shoppers in Terms of Demographic Characteristics

Demographic characteristics	Overall sample	Respondents who shopped online before	Respondents without shopping experience online	Chi-square tests of independence
Age in years <i>n</i> (%)				
55-59	92 (37,9%)	52 (56,5%)	40 (43,3%)	$X^2(2) = 9,910$ $p=0,007^{**}$ $\phi_c=0,202$ $n=243$
60-64	87 (35,8%)	43 (49,4%)	44 (50,6%)	
≥65	64 (26,3%)	20 (31,3%)	44 (68,8%)	
Gender <i>n</i> (%)				
Male	91 (37,4%)	47 (51,6%)	44 (48,4%)	$X^2(1) = 1,091$ $p=0,296$ $\phi_c=0,067$ $n=243$
Female	152 (62,6%)	68 (44,7%)	84 (55,3%)	
Education <i>n</i> (%)				
≤Secondary school	40 (16,5%)	7 (17,5%)	33 (82,5%)	$X^2(3) = 28,073$ $p<0,001^{**}$ $\phi_c=0,340$ $n=243$
High school	55 (22,6%)	19 (34,5%)	36 (65,5%)	
Associate degree	43 (17,7%)	24 (55,8%)	19 (44,2%)	
≥Undergraduate	105 (43,2%)	65 (61,9%)	40 (38,1%)	
Income (TL) <i>n</i> (%)				
<3000	115 (47,3%)	37 (32,2%)	78 (67,8%)	$X^2(2) = 22,864$ $p<0,001^{**}$ $\phi_c=0,307$ $n=243$
3000-4999	86 (35,4%)	48 (55,8%)	38 (44,2%)	
≥5000	42 (17,3%)	30 (71,4%)	12 (28,6%)	

Note. * $p<0,05$; ** $p<0,01$

The income of elderly people in our sample seems significantly related to the online shopping experience. Out of three income groups, while 71 % of the highest income group have online shopping experience, only 32% for the lowest income group have shopped online before. In the middle-income group, the ratio of online shoppers to non-shoppers is 55,8 to 44,2.

As seen in Table 2, the biggest group of online shoppers are from the 55-59 age group, and as the age increases, the percentage of old people with an online shopping experience decreases. While % 56,5 of the youngest group of respondents have shopped online before, only 31 percent of the respondents older than 65 had such experience. The Chi-square test of independence clearly showed the significant differences between different age groups.

Online shoppers and non-shoppers in this research are found to be different from each other when they are compared by their educational level. The Chi-square test justifies the effect of education on online shopping experience. The ratio of respondents with previous online shopping experience increases as the education level of the respondents increases. While only 17.5 % of the less educated group have online shopping experience, this ratio increases from 34.5% to 55.8 % at higher education levels and reaches the highest ratio for the most educated respondents. About 61.9 % of this group have online shopping experience.

3.2. Comparison of elderly online shoppers and non-online shoppers in terms of TPB

Factor Analysis is conducted to see the factorability of the items as it is suggested by the Theory of Planned Behavior (see Table 3). The Kaiser–Meyer–Olkin (KMO) test value which has been found as 0,923 has shown that the sample of the research is acceptable for running factor analysis. Barlett's test of sphericity confirmed the suitability of the data for factor analysis.

Table 3. Factor Analysis

KMO Test		0,923		
Bartlett Test		X ² =2328,898 df=78 Sig.=0,000		
	Mean	Std. D.	Factor Loadings	
Factor 1: Attitude (variance explained:31,79, Eigen value:9,38)				
I think shopping online is a good thing.	3,14	1,06	0,68	
I think shopping online is essential nowadays.	2,84	1,10	0,75	
I think online shopping is beneficial for consumers.	3,32	0,96	0,77	
I think online shopping is a good idea.”	3,26	1,08	0,77	
I have a positive opinion about online shopping.	3,24	1,03	0,84	
I like to shop online.	3,16	0,96	0,76	
Factor 2: Subjective Norm (variance explained:22,4, Eigen value:1,44)				
The people who have an influence on me think that I should shop online.	2,79	0,99	0,87	
The people who are important to me, encourage me to shop online.	2,75	1,01	0,86	
My family thinks that I can shop online	3,14	1,10	0,64	
My friends think that I can shop online.	3,17	1,07	0,63	
My acquaintances think that I can shop online.	3,30	0,96	0,47	
Factor 3: Perceived Behavioral Control (variance explained:19,77, Eigen value:1,23)				
I have the resources/ knowledge to shop online.	3,06	1,14	0,84	
I have self-confidence to use online shopping.	2,94	1,20	0,87	

Extraction Method: Principal Component Analysis

Rotation Method: Varimax with Kaiser Normalization

Cronbach's alpha value that is used to evaluate the internal consistency of the data is computed as 0.923 showing that the scale is reliable. Factor analysis yielded 3 factors explaining the 73.96 percent of the variance; all the items have a factor load bigger than 0.40, and except for two items, all the items' factor loads are more than 0.70 (see Table 3). Factor 1 is the attitude factor and explained 31.79 of the variance while the subjective norm explained the 22.407, and perceived behavioral control explained the 19.77 of the total variance for the set of variables. The reliability of each factor is computed by Cronbach's alpha which were 0.918, 0.868, and 0.884 respectively for attitude, subjective norm and perceived behavioral control (see Table 4).

Table 4. Internal Consistency Reliability

	Mean	Std. deviation	Cronbach's alpha
Dimensions of Theory of Planned Behavior	3,06661	0,79	0,947
Attitude	3,15	0,87	0,918
Subjective norm	3,03	0,83	0,868
Perceived behavioral control	3,00	1,11	0,884
Intention to shop online	3,00	1,02	0,900

Two groups of respondents are compared to explore if they are different in terms of their attitudes toward online shopping, subjective norm, perceived behavioral control, and online shopping intention. As seen in Table 5, the independent t-test results showed significant differences between the two groups in all of the dimensions that were considerably higher for older consumers who have shopped online before. Concerning attitudes towards online shopping, the mean values and standard deviations were 3.62 (0.64) and 2.7 (0.84). Independent samples t-test is conducted to provide a statistical support to the differences in attitudes and t-test results with $p < 0.001$ and $P = 9.15$. Subjective norm factor means are 3.39(0.72) and 2.7(0.79) for two groups, and t-test confirms the significant statistical difference between

the groups as $p < 0.001$ and $P = 7.12$. Two groups are significantly different in terms of their future online shopping intentions; while respondents with a prior experience have much more intention to shop online (mean: 3,73) in the following 6 months, the other group stated a lower intention (mean: 2.34). Although older consumers who have shopped online before and those without such an experience are significantly different from each other in terms of all the determinants of behavior, the biggest difference between the two groups occurred in perceived behavioral control (3.83 and 2.25). It shows that the group that did not shop online before perceive themselves lacking the knowledge and ability required to shop online. This group's attitudes and subjective norm scores are relatively higher than their own perception of behavioral control of shopping online.

Table 5. Comparison of Older Online Shoppers and Non-Shoppers Based on TPB

		N	Mean	Std. deviation	t-value	Sig (2-tailed)
Attitude	Older consumers who shopped online	115	3,62	0,64	9,151	0,000**
	Older consumers who did not shop online	128	2,74	0,84		
Subjective norm	Older consumers who shopped online	115	3,39	0,72	7,123	0,000**
	Older consumers who did not shop online	128	2,70	0,79		
Perceived behavioral control	Older consumers who shopped online	115	3,83	0,72	15,849	0,000**
	Older consumers who did not shop online	128	2,25	0,82		
Online shopping intention	Older consumers who shopped online	115	3,73	0,69	14,520	0,000**
	Older consumers who did not shop online	128	2,34	0,79		

Note: ** $p < 0,01$

The sample of this research represents elderly people with different demographic characteristics, and it becomes important to explore the effect of demographic variables on the elderly respondents' attitudes, subjective norms, perceived behavioral control, and online shopping intentions. Table 6 summarizes the analysis conducted to answer the 3rd research question.

Gender: Elderly men and women in this research have similar attitudes towards online shopping, subjective norm, perceived behavioral control. The Independent t-test result also confirms this similarity since all the constructs are found to be not significantly different between the two groups. Although statistically not significant, women seem to have a lower perception (mean: 2.93) compared to men (mean: 3.11) about their behavioral control on online shopping.

Age: In terms of attitudes, subjective norms, and intention to shop online, Anova test results did not reveal significant differences among different age groups although younger respondents had higher scores. The Anova test indicated a significant difference only in perceived behavioral control. As seen in Table 6, the perception of the respondents about their ability to shop online decreases as age increases. As stated above, age was related to online shopping experience. Thus, we can say that perceived behavioral control is an important variable to explain the online shopping participation of elderly people at different ages rather than their attitudes and subjective norm. The age of the respondents did not make a statistically significant difference in future online shopping intentions. Still, the difference between the shopping intentions of the oldest group and youngest group of respondents is apparent since the oldest group of respondents exhibit lower intention (mean: 2.78) while the youngest elderly group's intention mean is 3.14.

Income: Respondents with different income levels have similar attitudes towards online shopping. The Anova test revealed significant differences among different income groups in terms of subjective norms, perceived behavioral control, and intention. Older people with higher income levels have more confidence in their abilities to shop online and at the same time higher subjective norm scores. Online shopping intention of the respondents increased as the income level increased. Respondents with the highest income level have much higher online shopping intentions (mean: 3.52) than the lowest income group (mean: 2.79).

Educational level: Respondents with a different education level are not different in terms of their attitudes towards online shopping and subjective norm since all the groups have similar mean scores.

The Anova analysis confirmed an insignificant statistical difference among the groups in terms of these two determinants of behavior. Perceived behavioral control of the less educated group's mean score is as low as 2.25 while this score is over 3 for the university graduates, and Anova analysis indicated the statistically significant difference that has stemmed from the education level. Education level also leads to a significant difference in the online shopping intentions of respondents since the mean score is 2.54 for the less educated group while it increases to 3.2 for the highest educated respondents. Thus, considering the effect of education on online shopping participation, it may be conceived that higher education level leads to a higher perception of the elderly people's own skills and capabilities required for online shopping.

Table 6. Effect of Demographic Factors on the Dimensions of TPB

Demographic characteristics	Overall sample Frequency (percentage)	Attitude mean (SD)	Subjective norm mean(SD)	Perceived behavioral control mean(SD)	Online shopping intention mean(SD)	Independent samples t-test / one-way ANOVA
Age						
55-59	92 (37,9%)	3,27(0,88)	3,11(0,81)	3,25(1,11)	3,14 (1,10)	$F_A=1,903$ $p_A=0,151$
60-64	87 (35,8%)	3,15(0,88)	2,97(0,82)	2,88(1,06)	3,01 (0,98)	$F_{SN}=0,847$ $p_{SN}=0,430$
≥65	64 (26,3%)	2,99(0,83)	2,98(0,88)	2,80(1,12)	2,78 (0,93)	$F_{PBC}=3,859$ $p_{PBC}=0,022^*$ $F_I=2,377$ $p_I=0,095$
Gender						
Male	91 (37,4%)	3,16(0,86)	3,0703(0,82)	3,17(1,07)	3,11 (1,02)	$t_A(241)=-0,044$ $p_A=0,965$
Female	152 (62,6%)	3,15(0,87)	3,0066(0,84)	2,89(1,12)	2,93 (1,02)	$t_{SN}(241)=-0,576$ $p_{SN}=0,565$ $t_{PBC}(241)=-1,893$ $p_{PBC}=0,060$ $t_I(241)=-1,277$ $p_I=0,203$
Education						
≤Secondary school	40 (16,5%)	3,01(1,01)	2,85(0,93)	2,25(0,94)	2,54 (1,16)	$F_A=0,759$ $p_A=0,518$
High school	55 (22,6%)	3,10(0,79)	3,09(0,74)	2,77(0,90)	2,93 (1,00)	$F_{SN}=0,745$ $p_{SN}=0,526$
Associate degree	43 (17,7%)	3,27(0,67)	3,04(0,81)	3,38(0,95)	3,04 (0,94)	$F_{PBC}=11,691$ $p_{PBC}=0,000^{**}$
≥Undergraduate	105 (43,2%)	3,19(0,92)	3,05(0,84)	3,25(1,17)	3,20 (0,96)	$F_I=4,239$ $p_I=0006$
Income (TL)						
<3000	115 (47,3%)	3,03(0,92)	2,93(0,85)	2,64(1,03)	2,79 (0,98)	$F_A=2,887$ $p_A=0,058$
3000-4999	86 (35,4%)	3,20(0,76)	3,00(0,81)	3,22(1,04)	3,02 (1,05)	$F_{SN}=3,741$ $p_{SN}=0,025^*$
≥5000	42 (17,3%)	3,40(0,90)	3,33(0,76)	3,52(1,15)	3,52 (0,88)	$F_{PBC}=13,338$ $p_{PBC}=0,000^{**}$ $F_I=8,451$ $p_I=0,000^{**}$

Note. *p<0,05; **p<0,01;

CONCLUSION

This study has several contributions to the literature on online shopping behavior of elderly people. Firstly, an attempt is made to compare elderly online shoppers and non-shoppers in terms of demographic characteristics, and the two groups are found different in terms of age, education level, and income while gender did not lead to a difference between the two groups. Although there are many researches on the effect of demographic variables on online shopping behavior of consumers in general, research on elderly people is limited, and the findings about the effect of demographic variables are contradictory. Findings from a developing country like Turkey are valuable to understand older consumers' online shopping behavior.

Secondly, elderly online shoppers and non-shoppers are compared in terms of the Theory of Planned Behavior, and the findings have revealed the importance of behavioral self-control. Lastly, to the best of the authors' knowledge this research is one of the first attempts to find the effect of elder consumers' demographic characteristics on the dimensions of Theory of Planned Behavior. Elderly consumers do not constitute a homogenous market, and it is important to find how age, education, income, and gender make difference on the elder consumers' attitudes towards online shopping, subjective norm, and behavioral self-control.

The sample of the research consisted of older people having a computer or/and a smartphone or a tablet in their home or office with online access which is a prerequisite for online shopping. Although the respondents in this research have this resource, more than half of the sample did not have any online shopping experience. The expectation for the whole old population's online shopping experience in Turkey may be much lower because of the non-accessibility of these devices.

Our study has found significant demographic differences between online shoppers and non-shoppers with the exception of gender. The effect of age appears so significant in the comparison of the two groups; especially after age 65, the percentage of online shoppers is much lower. Since it is known that age is associated with difficulty in processing stimuli (Morris & Venkatesh, 2000), older people may have difficulty in using devices and applications required for online shopping. Although we accept the biological changes that come with aging, there may be other things that prevent older people's intention to try online shopping. We have found that although attitudes towards online shopping and subjective norm decrease as the age increases, the decrease of perceived behavioral control is very significant for those respondents older than 65. In other words, they think that they lack the knowledge needed for online shopping, and they do not have self-confidence to use it. These two findings may be interrelated; lack of knowledge might lead to a decrease in self-confidence. They may think that online shopping is too complicated. More research is needed in this regard to learn the reasons of this perception. Online shopping does not require only surfing among the pages and deciding on the products to purchase. There are several more stages of an online shopping process like payment which seems complicated for young consumers as well. Easy to use websites, applications and elderly-friendly smartphones are needed for encouraging older people to shop online.

Findings revealed the significance of educational differences between online shoppers and non-shoppers. The online shopping experience of the respondents decreased as the education level decreased. It is interesting that attitudes towards online shopping are not much different among the respondents representing different education levels; all education groups have a moderate level of positive attitudes. In terms of subjective norm, the less educated group has a lower score in this factor although it is not significant statistically. The education level of the respondents has a considerably higher effect on the evaluation of their own abilities since the difference is statistically significant.

The latest demographic variable searched in this research is the income level which was found to be different between online shoppers and non-shoppers. Our respondents representing different income levels are not found to be statistically different in terms of their attitudes towards online shopping. Although the lowest income group has the lowest attitude level, Anova test did not find this difference to be statistically significant. The perception of the respondents about their own abilities to shop online and their self-confidence was significantly higher for high-income groups like the other demographic variables. Income level interestingly affected respondents' subjective norms as well. Higher income groups also think more positively about how others evaluate their abilities to shop online.

Managerial Implications

The results of this study provide several implications for online marketers. The authors do not suggest elder consumers to shop online whenever a need arises to buy something whether it be an urgent need like food, water or not. It is obvious that conventional shopping may provide elderly people the opportunity for socializing and being more active physically. There are times when shopping online will be the only alternative for elderly people living alone to get the needed products and services. COVID-19 which has been an extraordinary global health problem in 2020 has shown the importance of online shopping for old people. The consequences of the virus are known to be worst among older people, and age is the most important factor in predicting the odds of surviving the COVID-19 disease (Daoust, 2020). Older people have avoided going to stores as part of the preventive measures taken by decision makers to protect them, and/or they have isolated themselves. The number of elderly individuals living alone is increasing even in countries like Turkey where it was not an acceptable behavior to let old parents live alone until a few decades ago. It is important to encourage elder people for online shopping to meet their everyday needs with better prices and more product alternatives. Online marketers generally target young consumers as it obviously appears in the advertisements targeting the younger audience. Our research has shown that elderly respondents with and without an online experience held moderate levels of positive attitudes towards online shopping. It may be due to associating online shopping with apparel, accessories, etc. and not considering it as an alternative channel to buy necessities like food, cleaning stuff, etc. Online marketers may increase the positive attitudes of elderly people by focusing on the functional benefits of online shopping in their messages.

As the findings of this research reveal, elderly people have a low level of perceived self-control to use online shopping; online marketers need to educate this market and improve their self-confidence on their abilities to shop online. Designing elder-friendly websites and applications, using elderly people as role models in the advertisements, informative messages showing how to shop online may also be suggested to managers.

The findings of this study also have policy implications for the governmental and non-profit institutions that aim to improve elderly people's quality of life. Until recently elderly consumers are generally neglected by marketers. As it is emphasized above, online shopping may improve the life quality of the elderly people by decreasing dependency on others for shopping and by providing access to more and cheaper product alternatives. Thus, the mission of educating this neglected market for safe online shopping may be undertaken by public authorities and nonprofit organizations. The share of active internet users is expected to increase in future generations of the elderly (Oeser et al., 2019). For the future generations of elderly consumers, it is probable that online shopping will not be a new technology to be learned. It seems important to educate today's elderly consumers on online shopping who have met with online technology at older ages. Since the rate at which new information learned declines with age (Pak & Kambil, 2006), mass media may be used by related institutions for increasing online technology literacy of elderly people and teaching safe online shopping in a way that those elderly people without such experience can understand. Online shopping safety tips to elderly consumers may be taught by the public authorities. Encouraging them to use online technology for shopping seems important since our findings have shown the importance of behavioral self-control on online shopping behavior. After they acquire the knowledge of using online shopping technology, they will have more confidence in their ability to shop online.

Limitations and Suggestions for Future Research

The sample size and sampling method of the research present limitations for the study since the sample consists of relatively younger elderly people compared to the general population. Due to the difficulty of getting a response from elderly people over 70, this group is less represented compared to the other age groups. The snowball sampling method and relatively small sample size made it impossible to generalize the findings. Furthermore, compared to the general population over age 55 in Turkey, the sample consisted of relatively more educated elderly people. In spite of the limitations, face to face contact with the respondents yielded trustable responses from the sample, and those older people that are not familiar to an online questionnaire have been represented in the sample.

Aging population is a demographic trend that has important impacts on economy, health care, and social security systems. Although aging population and elderly people have been studied in terms of these macro issues, research about elderly people in the marketing literature is limited. Older people have not been accepted as consumer segment with specific needs and wants until recently, and both the marketers and researchers have mostly focused on the younger consumers. More research is needed to explore the specific needs and wants of the aging population. Since the use of technology is a must today to reach many products and services, future research may focus on the use of new technologies by the older people. In this research we have made an attempt to explore the online shopping behavior of older consumers. Future research could include more demographic characteristics than just age, education, income, and gender of elderly people that may affect their online shopping behavior. For example, frequency of interaction with younger people such as children, grandchildren, younger friends may be searched as a variable to affect elderly people's online shopping behavior. The effect of environmental factors and extraordinary times such as the COVID-19 pandemic on the elderly consumers' trial of online channels are also worth exploring.

Ethics Statement: *The data of this study were collected in 2019. Ethics committee approval is not available following the article in the TR Index criteria, "The process of documents and information requested for studies that require ethics committee approval will be mandatory for publications starting in 2020".*

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REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Process*, 50, 179 – 211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Ajzen, I. (2011). The theory of planned behavior: Reactions and reflections. *Psychology & Health*, 26(9), 1113 – 1127. <https://doi.org/10.1080/08870446.2011.613995>
- Chang, M. K., Cheung, W. ve Lai, V., S. (2005). Literature derived reference models for the adoption of online shopping. *Information & Management*, 42(4), 543 – 559. <https://doi.org/10.1016/j.im.2004.02.006>
- Chakraborty, R., Lee, J., Bagchi-Sen, S., Upadhyaya, S. and Rao, H. R. (2016). Online shopping intention in the context of data breach in online retail stores: An examination of older and younger adults. *Decision Support Systems*, 83, 47 – 56. <https://doi.org/10.1016/j.dss.2015.12.007>
- Daoust, J.-F. (2020). Elderly people and responses to COVID-19 in 27 countries. *PLOS ONE*, 15(7): e0235590. <https://doi.org/10.1371/journal.pone.0235590>
- Debicka, O., Gutowski, T. and Borodo, A. (2018, September 18-20). Determinants of consumer purchasing decision in the e-commerce sector in Poland – Generation perspective. *SHS Web of Conferences*, 57, 1 – 10. <http://dx.doi.org/10.1051/shsconf/20185701010>
- E-commerce for the elderly (2021 February 01). *E-commerce Guide*. <https://ecommerceguide.com/guides/older-shopper/>
- Gong, W., Stump, R. L. and Maddox, L. M. (2013). Factors influencing consumers' online shopping in China. *Journal of Asia Business Studies*, 7(3), 214 – 230. <https://doi.org/10.1108/JABS-02-2013-0006>
- Hansen, T. (2008). Consumer values, the theory of planned behaviour and online grocery shopping. *International Journal of Consumer Studies*, 32, 128–137. <https://doi.org/10.1111/j.1470-6431.2007.00655.x>
- Hernández, B., Jiménez-Martínez, J. and Martín, J. M. (2011). Age, gender and income: Do they really moderate online shopping behaviour? *Online Information Review*, 35(1), 113–133. <https://doi.org/10.1108/14684521111113614>
- Herrero-Crespo, A. and Rodríguez del Bosque, I. (2008). The effect of innovativeness on the adoption of B2C e-commerce: A model based on the theory of planned behavior. *Computers in Human Behavior*, 24(6), 2830 – 2847. <https://doi.org/10.1016/j.chb.2008.04.008>
- Hsu, M.-H., Yen, C.-H., Chiu, C.-M. and Chang, C.-M. (2006). A longitudinal investigation of continued online shopping behavior: An extension of the theory of planned behavior. *International Journal of Human-Computer Studies*, 64, 889 – 904. <https://doi.org/10.1016/j.ijhcs.2006.04.004>
- Hui, T.-K. and Wan, D. (2007). Factors affecting internet shopping behaviour in Singapore: Gender and educational issues. *International Journal of Consumer Studies*, 31(3), 310–316. <https://doi.org/10.1111/j.1470-6431.2006.00554.x>
- Ishikawa, M., Yokoyama T Nakaya, T. and Fukuda, Y. et.al. (2016). Food accessibility and perceptions of shopping difficulty among elderly people living alone in Japan, *J Nutr Health Aging*, 20(9), 905-911.
- Joung, H.-M. and Miller N. J. (2006). Factors of dress affecting self-esteem in older females. *Journal of Fashion Marketing and Management*, 10(4), 466 – 478. <https://doi.org/10.1108/13612020610701983>
- Kemp, S. (2020, December 25). *Digital 2019: Turkey*. Datereportal. <https://datereportal.com/reports/digital-2019-turkey>
- Kim, H. S. (2006). The hedonic and utilitarian shopping motivations of inner city consumers. *Journal of Shopping Center Research*, 13(1), 57 – 59.

- Kuoppamäki, S.-M., Taipale, S. ve Wilska, T.-A. (2017). The use of mobile technology for online shopping and entertainment among older adults in Finland. *Telematics and Informatics*, 34(4), 110 – 117. <https://doi.org/10.1016/j.tele.2017.01.005>
- Kwon, W.-S. ve Noh, M. (2010). The influence of prior experience and age on mature consumers' perceptions and intentions of internet apparel shopping. *Journal of Fashion Marketing and Management*, 14(3), 335 – 349. <https://doi.org/10.1108/13612021011061825>
- Leppel, K. and McCloskey, D. W. (2011). A cross-generational examination of electronic commerce adoption. *Journal of Consumer Marketing*, 28(4), 261-268. <https://doi.org/10.1016/j.chb.2014.04.028>
- Lian, J.-W. and Yen, D. C. (2014). Online shopping drivers and barriers for older adults: Age and gender differences. *Computers in Human Behavior*, 37,133–143. <https://doi.org/10.1016/j.chb.2014.04.028>
- Lim, Y. M., Yap, C. S. and Lee, T. H. (2011). Intention to shop online: A study of Malaysian baby boomers. *African Journal of Business Management*, 5(5), 1711 – 1717.
- Limayem, M., Khalifa, M. and Frini, A. (2000). What makes consumers buy from internet? Longitudinal study of online shopping. *IEEE Transactions on Systems, Man, and Cybernetics – Part A: Systems and Humans*, 30(4), 421 – 432. <https://doi.org/10.1109/3468.852436>
- Lin, H.-F. (2007). Predicting consumer intentions to shop online: An empirical test of competing theories. *Electronic Commerce Research and Applications*, 6(4), 433 – 442. <https://doi.org/10.1016/j.elerap.2007.02.002>
- Morris, M. and Venkatesh, V. (2000). Age differences in technology adoption decisions: Implications for a changing workforce. *Personnel Psychology*, 53(2), 375 – 402. <https://doi.org/10.1111/j.1744-6570.2000.tb00206.x>
- Moschis, G. P. (2012). Consumer behavior in later life: Current knowledge, issues, and new directions for research. *Psychology & Marketing*, 29(2), 57 – 75. <https://doi.org/10.1002/mar.20504>
- Naseri, M. B. and Elliot, G. (2011). Role of demographics, social connectedness and prior internet experience in adoption of online shopping: Applications for direct marketing. *Journal of Targeting, Measurement and Analysis for Marketing*, 19(2), 69 – 84. <https://doi.org/10.1057/jt.2011.9>
- Ohemeng, F., Small, B. and Molinari, V. (2019). Social activities and subjective well-being of older adults in Ghana. *Journal of Population Ageing*, 13, 443-463. <https://doi.org/10.1007/s12062-019-09251-9>
- On-at, S., Canut, M.-F., Péninou, A. and Sédes, F. (2014). Deriving user's profile sparse egocentric networks using snowball sampling and link prediction. *Ninth International Conference on Digital Information Management (ICDM 2014)*, 80 – 85. <https://doi.org/10.1109/icdim.2014.6991421>
- Oeser, G., Aygün, T., Balan, C.-L., Paffrath, R. and Schuckel, M. T. (2019). Segmenting elder German grocery shoppers based on shopping motivations. *International Journal of Retail & Distribution Management*, (47)2, 129-156. <https://doi.org/10.1108/IJRDM-02-2018-0033>
- Pak, C. and Kambil, A. (2006). Over 50 and ready to shop: Serving the aging consumer. *Journal of Business Strategy*, 27(6), 18-28. <http://dx.doi.org/10.1108/02756660610710319>
- Soh, P. Y., Heng, H.B., Selvachandran, G., Anh, L. Q., Chau, H. T. M., Son, L. H., Abdel-Baset, M., Manogaran, G. ve Varathajaran, R. (2020). Perception, acceptance and willingness of older adults in Malaysia towards online shopping: A study using the ATAUT and IRT models. *Journal of Ambient Intelligence and Humanized Computing*, <https://doi.org/10.1007/s12652-020-01718-4>
- Sorce, P., Perotti, V. and Widrick, S. (2005). Attitude and age differences in online buying. *International Journal of Retail & Distribution Management*, 33(2), 122 – 132. <https://doi.org/10.1108/09590550510581458>

- To, P.-L., Liao, C. and Lin, T.-H. (2007). Shopping motivations on internet: A study based on utilitarian and hedonic value. *Technovation*, 27, 774 – 787. <https://doi.org/10.1016/j.technovation.2007.01.001>
- Trocchia, P. J. and Janda, S. (2000). A phenomenological investigation of internet usage among older individuals. *Journal of Consumer Marketing*, 17(7), 605 – 616. <https://doi.org/10.1108/07363760010357804>
- United Nations. (2021 January 05). World population prospects: The 2017 revision. https://population.un.org/wpp/publications/files/wpp2017_keyfindings.pdf
- Veenhof, B. and Timusk, P. (2021 January 05). *Online activities of canadian boomers and seniors*. Statistics Canada. <https://www150.statcan.gc.ca/n1/pub/11-008-x/2009002/article/10910-eng.htm>
- Vicente, P. and Lopes, I. (2016). Attitudes of older mobile phone users towards mobile phones. *The European Journal of Communication Research*, 41(7), 71 – 86. <https://doi.org/10.1515/commun-2015-0026>
- Wang, M.-S., Chen, C.-C., Chang, S.-C. and Yang, Y.-H. (2007). Effects of online shopping attitudes, subjective norms and control beliefs on online shopping intentions: A test of the theory of planned behaviour. *International Journal of Management*, 24(2), 296 – 302.
- World Health Organization. (2021, August 15). Health aging. *World Report on Aging and Health*, 25 – 43. https://apps.who.int/iris/bitstream/handle/10665/186463/9789240694811_eng.pdf;jsessionid=C31B8AF577BD19B3F3F0E2F48580DF5D?sequence=1
- Yalçın, F. G. (2021, April 10). *Türkiye’de yaşlılık tahayyülleri ve pratikleri araştırma sonuçları paylaşıldı*. Fintechtime. <http://fintechtime.com/tr/2019/09/turkiyede-yaslilik-tahayyulleri-ve-pratikleri-arastirma-sonuclari-paylasildi/>
- Yin, Y., Pei, E. and Ranchhod, A. (2013). The shopping experience of older supermarket consumers. *Journal of Enterprise Information Management*, 26(4), 444 – 471. <https://doi.org/10.1108/JEIM-05-2013-0025>
- Zhou, L., Dai, L. and Zhang, D. (2007). Online shopping acceptance model – A critical survey of consumer factors in online shopping. *Journal of Electronic Commerce Research*, 8(1), 41 – 62.