

# Examining the Relationship Between Digital Literacy Levels and Online Purchase Intentions of Generation X, Y, and Z Consumers

## X, Y ve Z Kuşak Tüketicilerin Dijital Okuryazarlık Düzeyleri ve Çevrimiçi Satın Alma Niyetleri Arasındaki İlişkinin İncelenmesi

Meftune ÖZBAKIR UMUT<sup>a</sup>

<sup>a</sup>(Corresponding author/ Sorumlu yazar) Doç. Dr., Bolu Abant İzzet Baysal Üniversitesi, ozbakir\_m@ibu.edu.tr,  
0000-0001-7619-302X

### Abstract

**Makale Türü:** Araştırma Makalesi  
**Article Type:** Research Article

**Makale Geçmişi/Article History**  
**Makale Geliş Tarihi/**  
**Received:**04/06/2024  
**Makale Kabul Tarihi/**  
**Accepted:**25/10/2024

**Anahtar Kelimeler:** Dijital okuryazarlık, çevrimiçi satın alma niyeti, tüketici davranışı, kuşaklar.

**Keywords:** Digital literacy, online purchasing intention, consumer behaviour, generations.

**Purpose:** This study aimed to determine consumers' digital literacy levels, whether their digital literacy levels had an effect on their online purchasing behaviour, and whether their digital literacy levels varied with their demographic characteristics. Few studies in the marketing literature have investigated the concept of digital literacy, which has become an important issue for consumer behaviour. **Material and Method:** In this study, in which quantitative research methods were used, data were collected from 627 consumers through online survey method. The conceptual model of the study was tested using structural equation modeling. **Findings:** This study found statistically significant differences between the generations' digital literacy levels and online purchasing intentions. **Results:** Especially for online communication, it is recommended to develop applications and content that will attract and use consumers with different digital literacy levels.

### Öz

**Amaç:** Bu çalışma, tüketicilerin dijital okuryazarlık düzeylerini, dijital okuryazarlık düzeylerinin çevrimiçi satın alma davranışlarına etkisinin olup olmadığını ve dijital okuryazarlık düzeylerinin demografik özelliklerine göre değişip değişmediğini belirlemeyi amaçlamıştır. Tüketici davranışları için önemli bir konu haline gelen dijital okuryazarlık kavramını pazarlama literatüründe az sayıda çalışma ile araştırmıştır. **Gereç ve Yöntem:** Nicel araştırma yöntemlerinin kullanıldığı bu çalışmada 627 tüketiciden çevrimiçi anket yöntemi ile veri toplanmıştır. Çalışmanın kavramsal modeli yapısal eşitlik modellemesi kullanılarak test edilmiştir. **Bulgular:** Çalışmada, kuşaklar arasında dijital okuryazarlık düzeyleri ile çevrimiçi satın alma niyetleri arasında istatistiksel olarak anlamlı farklılıklar bulunmuştur. **Sonuç:** Özellikle online iletişim için farklı dijital okuryazarlık seviyelerine sahip tüketicilere yönelik uygulamalar ve içerikler geliştirilmesi önerilmektedir.



Bu çalışma [Creative Commons Atıf-GayriTicari 4.0](https://creativecommons.org/licenses/by-nc/4.0/) (CC BY-NC 4.0) kapsamında açık erişimli bir makedir.

**Cite as/Bu yayına atıfta bulunmak için:** Özbakır Umut, M. (2024). Examining the relationship between digital literacy levels and online purchase intentions of generation X, Y, and Z consumers. *Journal of Current Marketing Approaches & Research*, 5(Special Issue), 1-20. <https://doi.org/10.54439/gupayad.1495730>

**Ethics committee statement/Etik kurul beyanı:** This study was conducted with the approval of the Ethics Committee in accordance with the decision of Bolu Abant İzzet Baysal University Human Research Ethics Committee in Social Sciences dated 24.12.2020 (protocol no. 2020/295) and numbered 2020/12.

## 1. Introduction

Digital consumption culture emerges directly or indirectly from consumer's interactions with digital technologies such as the internet, social media, mobile devices and applications. Consumer interaction with the physical world has transformed significantly with the rise of digital technology. Their purchasing habits,

product usage, and overall lived experiences have shifted. For instance, to meet the need for storing and sharing information, we've transitioned from floppy disks to CDs, USB drives, and now cloud storage. Many people have also altered their shopping behavior, moving from traditional markets to online platforms. Today, consumers' online and offline

lives are deeply intertwined, leading to a more complex relationship with their social and business environments. As a result, digital consumer culture should emerge as a distinct area of research (Dey et al., 2020). In today's digital consumer culture, companies are constantly exploring new and creative methods to better understand their customers and stay ahead of the competition. The ability to collect vast amounts of data on consumer behavior, preferences, and attitudes through digital tools has unlocked unparalleled insights into consumer psychology. On the positive side, these insights have opened doors for more personalized marketing, improved product development, and greater customer satisfaction. However, the reliance on data also brings challenges, such as privacy concerns, data security risks, and the potential for over-reliance on algorithms, which may oversimplify complex human behaviors. Despite these drawbacks, the application of digital technologies remains crucial for enhancing understanding of consumer decision-making (Tüfekçi & Akbıyık, 2023).

As of 2023, the number of individuals utilizing the Internet reached 5.16 billion globally. This signifies that 64.4 percent of the global population is currently engaged in online activities (Wearesocial, 2023). The results of the Turkey Household Information Technology Usage Survey indicate that the proportion of households with access to the Internet from home increased by 1.4 points in 2023 compared to the previous year, reaching 95.5%. In 2022, the internet usage rate in Turkey was 85.0% among individuals aged between 16 and 74. By 2023, this figure had risen to 87.1%. With regard to gender, the rate of Internet usage in 2023 was 90.9% for males and 83.3% for females (TUIK, 2023). Furthermore, digital technologies are now commonly employed for a multitude of purposes, including educational activities, business meetings, interviews, the purchase of goods and services, and numerous other applications. The necessity to transfer physical processes to digital environments during the pandemic has been a recent phenomenon, although the use of digital technologies has been

a long-standing feature of modern life. The 2020 Coronavirus pandemic required the transfer of numerous professional and business practices to digital environments. In light of these developments, digital literacy has emerged as a crucial concept. Digital literacy is defined as the knowledge, skills, and experiences required to effectively utilize digital technologies, enabling individuals to acquire information, use technology, and create and share content (Eshet, 2004). Studies have shown that digital literacy plays a key role in navigating the digital landscape, including making online purchases. The current research seeks to answer the question: Do digital literacy levels affect online purchasing intentions? Prior studies, such as those by Park and Kim (2003), have indicated that consumers with higher levels of digital literacy tend to have greater trust in online platforms, thus increasing their likelihood of engaging in e-commerce. Another important research question posed by the study is whether digital literacy levels and online purchasing intentions differ among generations X, Y, and Z. Previous research has identified generational differences in digital literacy, with younger generations typically demonstrating higher proficiency in digital tools and platforms (Prensky, 2001). This variance in digital literacy is hypothesized to correlate with differences in online purchasing behavior, as younger generations are more likely to trust and utilize digital platforms for shopping (Bolton et al., 2013). The study focuses on consumers in Turkey, aiming to assess whether digital literacy levels impact their online purchasing behavior and how these levels vary across demographic characteristics. Turkey, like many other countries, has experienced rapid digital transformation, making it a relevant context for examining the intersection of digital literacy and consumer behavior. This research adds to the expanding body of marketing literature by framing digital literacy as a vital concept for comprehending contemporary consumer behavior. Studies have shown that digital literacy significantly influences consumer decision-making processes and engagement in digital environments (Deursen & Dijk, 2014). As

the digital economy continues to evolve, grasping the role of digital literacy is becoming increasingly crucial for businesses aiming to connect effectively with consumers across diverse generational and demographic segments (Hargittai, 2010). Understanding these dynamics can help organizations tailor their strategies to meet the needs of a digitally literate audience.

## 2. Conceptual Framework

As more and more services and information relevant to daily life are made available online, competence in using the Internet is becoming more and more important. As a growing segment of the population relies on the Internet, it becomes essential to assess not only accessibility but also how digital literacy impacts the way individuals process information. It is therefore important to assess the impact of the Internet on access to information and, furthermore, to examine how the resulting increase in information burden affects decision-making (Hargittai, 2005).

Gilster (1997) defined the concept of digital literacy as the ability to understand and use information from different resources through computer. This extends beyond the mere ability to utilise software or operate a digital device to encompass the capacity to utilise images, reproduce, disseminate information, inform, and develop socio-emotional competence. An individual who is digitally literate should possess operational and technical proficiency, demonstrate critical thinking and the ability to evaluate digital content, and utilise the web in a safe manner for professional, educational, and other routine activities.

Callum and Jeffrey (2014) demonstrated the importance of digital literacy in the adoption of mobile learning technology by highlighting how users' ability to navigate and engage with digital tools directly influences their willingness and capacity to adopt new technologies, like mobile learning platforms. Their study found that individuals with higher levels of digital literacy were more comfortable using mobile devices for educational purposes, as they could effectively access, process, and utilize digital content. Nawafleh (2018) showed that digital literacy has

a positive and significant impact on people's intention to use e-government services. Digital literacy refers to the ability to communicate, collaborate, and acquire and evaluate information using technological tools (Kinzer, 2010). Numerous studies in the literature (Ertaş et al., 2019; Horrigan, 2016; Marsh et al., 2017) have demonstrated that digital literacy levels vary across age groups. Age, being an important socioeconomic characteristic, has a direct and regulatory impact on consumers' behavioral intentions, technology adoption, and acceptance (Chung, 2010). Younger individuals tend to have more experience with the Internet, making factors such as perceived usefulness and attitude more significant in their technology usage (Morris & Venkatesh, 2000). Thus, digital literacy is not only shaped by technological tools but also by demographic factors like age. This fact led to this study's first two main hypotheses and their sub-hypotheses:

H1: There are differences in the three generations' digital literacy levels.

H1a: There are differences in the three generations' attitude dimension.

H1b: There are differences in the three generations' technical dimension.

H1c: There are differences in the three generations' cognitive dimension.

H1d: There are differences in the three generations' social dimension.

H2: There are differences in the three generations' online purchasing intentions.

Numerous studies have found that digital literacy levels differ by gender, with significant implications for technology adoption and consumer behavior. For instance, Morris and Venkatesh (2000) explored how gender influences decision-making and purchasing behavior in the context of digital systems. Their findings suggest that men and women value digital features differently, with these differences reflecting gender-specific preferences and approaches to technology use. These variations in digital literacy and technology adoption align with broader

research indicating that males and females have distinct characteristics that shape their consumption decisions. However, the literature on gender and digital literacy presents mixed findings. While Kıyıcı (2008) and Bayrakçı (2020) found that men tend to exhibit higher levels of digital literacy compared to women, suggesting a gender gap in technological proficiency, other studies present more nuanced perspectives. For instance, Shin (2009) found no statistically significant difference in internet usage between men and women, indicating that access to and use of digital platforms may not be as gendered as previously thought. These findings suggest that while men may demonstrate higher digital literacy in certain contexts, the overall usage and interaction with digital systems can be more evenly distributed across genders depending on the digital environment and cultural factors. Gender remains an important variable in understanding how consumers engage with digital technologies, though the influence of gender on digital literacy and behavior appears complex and context-dependent. Thus, this study hypothesized that:

H<sub>3</sub>: There are differences between females' and males' digital literacy levels.

H<sub>3a</sub>: There are differences between females' and males' attitude dimension.

H<sub>3b</sub>: There are differences between females' and males' technical dimension.

H<sub>3c</sub>: There are differences between females' and males' cognitive dimension.

H<sub>3d</sub>: There are differences between females' and males' social dimension.

H<sub>4</sub>: There are differences between females' and males' online purchasing intentions.

Horrigan (2016) found that digital literacy levels varied by education level, and that people with bachelor's or master's degrees had higher digital literacy levels than people with other education levels. Yeşildal (2018) also found that digital literacy levels varied by education level. This led to these hypotheses:

H<sub>5</sub>: There are differences in digital literacy levels by education level.

H<sub>5a</sub>: There are differences in the attitude dimension by education level.

H<sub>5b</sub>: There are differences in the technical dimension by education level.

H<sub>5c</sub>: There are differences in the cognitive dimension by education level.

H<sub>5d</sub>: There are differences in the social dimension by education level.

H<sub>6</sub>: There are differences in online purchasing intentions by education level.

Janssen and Stoyanov (2012) identified the digital literacy levels with general knowledge and skills and indicated that the digital literacy levels of people with professional careers were positively affected by their efforts to express their creativity and improve their professional performance. Thus, the following hypotheses were developed for employment status and digital literacy:

H<sub>7</sub>: There are differences in digital literacy levels by employment status.

H<sub>7a</sub>: There are differences in the attitude dimension by employment status.

H<sub>7b</sub>: There are differences in the technical dimension by employment status.

H<sub>7c</sub>: There are differences in the cognitive dimension by employment status.

H<sub>7d</sub>: There are differences in the social dimension by employment status.

H<sub>8</sub>: There are differences in online purchasing intentions by employment status.

The relationship between income level and digital literacy is also discussed in the literature. In this regard (Hatlevik & Christophersen, 2013; Kıyıcı, 2008; Yeşildal, 2018), these hypotheses were developed because it has been found that low-income groups have lower digital literacy levels:

H<sub>9</sub>: There are differences in digital literacy levels by income level.

H<sub>9a</sub>: There are differences in the attitude dimension by income level.

H<sub>9b</sub>: There are differences in the technical dimension by income level.

H<sub>9c</sub>: There are differences in the cognitive dimension by income level.

H<sub>9d</sub>: There are differences in the social dimension by income level.

H<sub>10</sub>: There are differences in online purchasing intentions by income level.

A review of the literature reveals that digital literacy levels vary by age group (Ertaş et al., 2019; Horrigan, 2016; Marsh et al., 2017). Nevertheless, no studies were identified that directly compare the digital literacy levels and online purchasing intentions of the three generations. Conversely, studies have identified discrepancies in consumer behaviour across the three generations. For instance, the consumer profile of Generation X indicates that they are driven by both rational and emotional motives and adhere to traditional values (Altuğ, 2012). The consumer behaviour of Generation Y has been the subject of numerous studies, which

have revealed that this generation is characterised by a strong focus on consumption, frequent use of the internet and electronic media tools, and a proclivity for online shopping, particularly in comparison to other generations (Wolburg & Pokrywczynski, 2001; Valentine & Powers, 2013). Generation Z is conversant with the majority of technological products currently on the market, has no difficulty in using them, and acquires consumer characteristics at an early age, given that they commence their educational lives at an earlier age (Bakırtaş et al., 2016). In light of the aforementioned evidence, the following hypotheses were developed for the final set of the study:

H<sub>11</sub>: The digital literacy levels of generation X affect their online purchasing intentions.

H<sub>12</sub>: The digital literacy levels of generation Y affect their online purchasing intentions.

H<sub>13</sub>: The digital literacy levels of generation Z affect their online purchasing intentions.

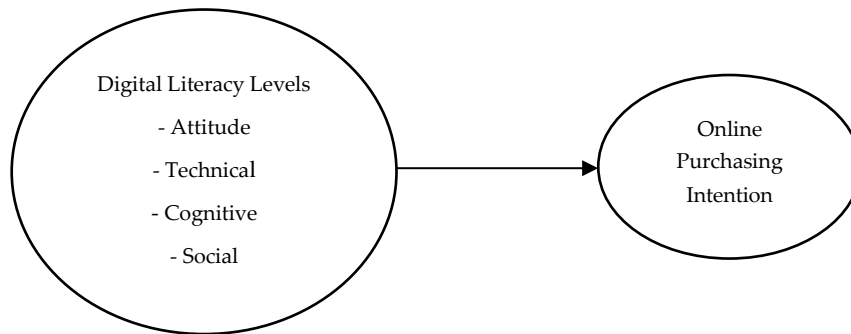


Figure 1. Conceptual Model

Figure 1 shows the conceptual model that was assessed by this study.

### 3. Method

The concept of digital literacy has gained prominence as a result of the migration of activities such as education, business, entertainment, and consumption to digital environments. This study seeks to answer the following question: Does an individual's level of digital literacy influence their intention to make purchases online? The hypothesis is that digital literacy levels affect consumer behaviour. The study's other research question was as follows:

This study seeks to determine whether there are differences in the digital literacy levels and online purchasing intentions of generations X, Y, and Z. The objective of this study was to ascertain the digital literacy levels of consumers in Turkey, to determine whether digital literacy levels influence online purchasing behaviour, and to examine whether digital literacy levels vary according to demographic characteristics. In this study, relational research design was used. Relational research design is a quantitative research method used to explore the

relationships or associations between two or more variables. The primary goal is to examine whether and how variables are connected, often through statistical analysis, without manipulating the variables directly. This design was chosen because it aims to explore potential links between variables without establishing causality (Cohen et al., 2000). Two different scales were used in this study. One was the Digital Literacy Scale developed by Ng (2012). Hamutoğlu et al. (2017) adapted it into Turkish. The scale comprises 4 components such as attitude, technical, cognitive and social dimension. The other scale was the Online Purchasing Intention Scale developed by Çelik (2009). Permissions to use the scales were obtained prior to the study. This study was conducted with the approval of the Ethics Committee in accordance with the decision of Bolu Abant İzzet Baysal University Human Research Ethics Committee in Social Sciences dated 24.12.2020 (protocol no. 2020/295) and numbered 2020/12. The questionnaire was prepared using a 5-point Likert scale (1= *Strongly Disagree* and 5 = *Strongly Agree*).

This study's main population consisted of people in Turkey from generations X and Y, and 18- and 19-year-olds from generation Z. Table 1.

#### Target Population and Sample

Generation	Target Population		Sample	
	f	%	f	%
X (40-54 age range)	16,176,316	36	135	23
Y (20-39 age range)	25,939,249	58	369	58
Z (18 and 19 age range)	2,667,141	6	123	19
TOTAL (18-54 age range)	44,782,706	100	627	100

Table 1 shows that approximately 36% of the 44,782,706 people in Turkey from 18 to 54 years old are in generation X, 58% are in generation Y, and 6% are 18- and 19-year-olds in generation Z. People born in 2000 and afterwards are considered generation X, but this study only included consumers who were older than 18. This study tried to reach similar percentages of respondents from generations X, Y, and Z to increase its representativeness for the target population. 627 participants 135 from generation X, 369 from generation Y, and 123 from generation Z. This study's online survey

Although the definitions of Generation X, Y, and Z originate from the USA, they are addressed by statistical bureaus and researchers in different countries. Although there is no consensus on the exact time interval for the birth dates of the generations, countries define these generations by determining the birth year interval depending on the political, sociological and especially post-World War II population growth action plans processes (USA Statistical Institute, 2006; Hogan, Perez, & Bell, 2008; Crumpacker & Crumpacker, 2007). This population includes 44,782,706 people from 18 to 54 years old according to the Turkish Statistical Institute (TUIK, 2020). Due to time and cost constraints, the convenience sampling method, one of the most widely used sampling strategies, was used in the study. Data were collected through an online survey. The researcher sent the online questionnaire to the respondents in Generation X (40-54 age range), Y (20-39 age range) and Z (18 and 19 age) through social media channels and e-mail. The survey items were answered with the approval of those who agreed to participate in the survey. In online surveys, it is not possible to move on to the next question without answering a question, so there were no missing coded surveys.

included the 17-item Digital Literacy Scale, the 4-item Online Purchasing Intention Scale, and 6 questions regarding demographic information. Data were collected between 20.12.2021 and 10.01.2022.

The data were analysed using SPSS and AMOS software based on a 95% confidence interval. Skewness and kurtosis values between +3 and -3 obtained from the scales were considered sufficient to identify a normal distribution (De Carlo, 1997; Hopkins & Weeks, 1990; Groeneveld & Meeden, 1984; Moors, 1986).

#### 4. Findings

The findings of the study are as follows. The parametric independent samples t-test was used to analyse two-group variables, and one-way analysis of variance (Anova) was used to analyse

three- or more-group variables. This section presents the findings of the roadmap analysis through confirmatory factor analysis (CFA), structural equation modelling, and the tests for descriptive statistics.

Table 2.  
The Distribution of Variables by Generation

		Generation							
		X		Y		Z		Total	
		n	%	n	%	n	%	n	%
Gender	Female	75	55,6	219	59,3	79	64,2	373	59,5
	Male	60	44,4	150	40,7	44	35,8	254	40,5
Education level	Primary school	4	3,0	2	,5	0	0	6	1,0
	High school	23	17,0	72	19,5	102	82,9	197	31,4
	Associate's degree	11	8,1	60	16,3	19	15,4	90	14,4
	Bachelor's degree	65	48,1	180	48,8	2	1,6	247	39,4
	Master's degree	32	23,7	55	14,9	0	0,0	87	13,9
Employment and studying status	I have a full-time job.	91	67,4	172	46,6	4	3,3	267	42,6
	I am a new graduate, and I am looking for a job.	0	0,0	30	8,1	3	2,4	33	5,3
	I am unemployed.	11	8,1	24	6,5	3	2,4	38	6,1
	I am a student, and I am not working.	2	1,5	77	20,9	91	74,0	170	27,1
	I am a student, and I have a full-time job.	1	,7	22	6,0	3	2,4	26	4,1
	I am a student, and I have a part-time job.	5	3,7	20	5,4	13	10,6	38	6,1
Income level	I am not working.	25	18,5	24	6,5	6	4,9	55	8,8
	0- 1500 TRY	8	5,9	106	28,7	47	38,2	161	25,7
	1501 TRY - 2500 TRY	5	3,7	36	9,8	24	19,5	65	10,4
	2501 TRY - 3500 TRY	10	7,4	70	19,0	21	17,1	101	16,1
	3501 TRY - 4500 TRY	12	8,9	46	12,5	13	10,6	71	11,3
	4501 TRY - 5500 TRY	17	12,6	37	10,0	9	7,3	63	10,0
	5501 TRY - 6500 TRY	15	11,1	20	5,4	3	2,4	38	6,1
6501 TRY +	68	50,4	54	14,6	6	4,9	128	20,4	

Table 2 shows that approximately 55% of generation X, approximately 59% of generation Y, and approximately 64% of generation Z were female. Of all the respondents, 59.5% were female, and 40.5% were male. Of the respondents, 48.1% from generation X and 48.8% from generation Y had bachelor's degrees while 82.9% from generation Z had completed high school. Of all the respondents, 39.4% had bachelor's degrees. Of the respondents, 67.4%

from generation X and 46.6% from generation Y had full-time jobs, while 74% from generation Z were students who were not working. Of all the respondents, 42.6% had full-time jobs. Of the respondents, 50.4% from generation X had incomes of at least 6,501 TRY, while 28.7% from generation Y and 38.2% from generation Z had incomes of less than 1,500 TRY. Of all the respondents, 25.7% had incomes of less than 1,500 TRY.

Table 3.  
Descriptive Statistics and Normality Testing for Online Purchasing Intention and Digital Literacy Levels

	n	Minimum	Maximum	Mean	SD	Skewness	Kurtosis
Attitude	627	1,71	5,00	3,92	0,61	-,479	,129
Technical	627	2,17	5,00	4,03	0,60	-,313	-,148
Cognitive	627	1,00	5,00	4,09	0,68	-,679	,846
Social	627	1,00	5,00	3,57	0,83	-,164	-,394
Digital Literacy	627	2,18	5,00	3,90	0,55	-,180	-,209
Online Purchasing Intentions	627	1,00	5,00	3,95	0,91	-,806	,313

Table 3 shows that the skewness and kurtosis values for the Digital Literacy Scale, its subscales, and the Online Purchasing Intention Scale were between +3 and -3, indicating that

they had normal distributions (Groeneveld & Meeden, 1984; Moors, 1986; Hopkins & Weeks, 1990; De Carlo, 1997). The parametric tests were used for the related analyses.

Table 4.

Digital Literacy Levels and Online Purchasing Intentions by Generation

Generation		n	Mean	SD	F	p	Multiple comparison
Attitude	X	135	3,92	0,65	3,226	,040*	2>3
	Y	369	3,96	0,58			
	Z	123	3,80	0,66			
Technical	X	135	3,81	0,62	11,092	,000*	1<2
	Y	369	4,09	0,57			1<3
	Z	123	4,06	0,65			
Cognitive	X	135	4,06	0,64	3,957	,020*	2>3
	Y	369	4,14	0,66			
	Z	123	3,95	0,77			
Social	X	135	3,37	0,87	6,055	,002*	1<2
	Y	369	3,66	0,79			
	Z	123	3,55	0,86			
Digital Literacy Levels	X	135	3,79	0,56	6,064	,002*	1<2
	Y	369	3,96	0,51			
	Z	123	3,84	0,61			
Online Purchasing Intentions	X	135	3,69	0,97	7,244	,001*	1<2
	Y	369	4,03	0,90			1<3
	Z	123	3,99	0,82			

Table 4 shows the Anova test results for digital literacy levels and online purchasing intentions by generation. There were statistically significant differences between the three generations' digital literacy levels ( $p<0.05$ ). Generation Y had the highest mean score, and generation X had the lowest mean score. This confirmed hypothesis H<sub>1</sub>: There are differences in the three generations' digital literacy levels.

There were statistically significant differences between the three generations' attitude dimension scores ( $p<0.05$ ). Generation Y had the highest mean score, and generation Z had the lowest mean score. Thus, hypothesis H<sub>1a</sub> was confirmed: There are differences in the three generations' attitude dimension.

There were statistically significant differences between the three generations' technical dimension scores ( $p<0.05$ ). Generation Y had the highest mean score, and generation X had the lowest mean score. Thus, hypothesis H<sub>1b</sub> was confirmed: There are differences in the three generations' technical dimension.

There were statistically significant differences between the three generations'

cognitive dimension scores ( $p<0.05$ ). Generation Y had the highest mean score, and generation Z had the lowest mean score. Thus, hypothesis H<sub>1c</sub> was confirmed: There are differences in the three generations' cognitive dimension.

There were statistically significant differences between the three generations' social dimension scores ( $p<0.05$ ). Generation Y had the highest mean score, and generation X had the lowest mean score. Thus, hypothesis H<sub>1d</sub> was confirmed: There are differences in the three generations' social dimension.

There were statistically significant differences between the three generations' online purchasing intentions ( $p<0.05$ ). Generation Y had the highest mean score, and generation X had the lowest mean score. Thus, hypothesis H<sub>2</sub> was confirmed: There are differences in the three generations' online purchasing intention.

Table 5 shows the results of the t-test for digital literacy levels and online purchasing intentions by gender. There were statistically significant differences between the females and the males' digital literacy scores ( $p<0.05$ ). The



males had a higher mean score than the females. This confirmed hypothesis H<sub>3</sub>: There are differences between females' and males' digital literacy levels.

Table 5.  
 Digital Literacy Levels and Online Purchasing Intentions by Gender

	Gender	n	Mean	SD	t	p
Attitude	Female	373	3,90	0,59	-,910	,363
	Male	254	3,95	0,65		
Technical	Female	373	3,95	0,60	-3,686	,000*
	Male	254	4,13	0,60		
Cognitive	Female	373	4,06	0,63	-1,210	,227
	Male	254	4,13	0,74		
Social	Female	373	3,49	0,81	-3,006	,003*
	Male	254	3,69	0,84		
Digital Literacy Levels	Female	373	3,85	0,52	-2,785	,006*
	Male	254	3,98	0,58		
Online Purchasing Intention	Female	373	3,97	0,89	,770	,441
	Male	254	3,91	0,94		

There were no statistically significant differences between the females' and the males' attitude dimension scores. Thus, hypothesis H<sub>3a</sub>: There are differences between females and males' attitude dimension, was rejected.

There were statistically significant differences between the females' and the males' technical dimension scores (p<0.05). The males had a higher mean score than the females. Thus, hypothesis H<sub>3b</sub> was confirmed: There are differences between females' and males' technical dimension.

There were no statistically significant differences between the females' and the males' cognitive dimension scores. Thus, hypothesis H<sub>3c</sub>: There are differences between females' and males' cognitive dimension, was rejected.

There were statistically significant differences between the females' and the males' social dimension scores (p<0.05). The males had a higher mean score than the females. Thus, hypothesis H<sub>3d</sub> was confirmed: There are differences between females' and males' social dimension.

There were no statistically significant differences between the females' and the males' online purchasing intentions. Thus, hypothesis H<sub>4</sub>: There are differences between females and males' online purchasing intention, was rejected.

Table 6 shows the results of the Anova test for digital literacy and online purchasing intention

by education level. There were statistically significant differences in digital literacy levels by education level (p<0.05). The respondents with bachelor's degrees had the highest mean score, and the respondents who had completed primary school or high school had the lowest mean score. This confirmed hypothesis H<sub>5</sub>: There are differences in digital literacy levels by education level.

There were statistically significant differences in attitude dimension scores by education level (p<0.05). The respondents with bachelor's degrees had the highest mean score, and the respondents who had completed primary school or high school had the lowest mean score. This confirmed hypothesis H<sub>5a</sub>: There are differences in the attitude dimension by education level.

There were no statistically significant differences in technical dimension scores by education level. Thus, hypothesis H<sub>5b</sub>: There are differences in the technical dimension by education level, was rejected.

There were statistically significant differences in cognitive dimension scores by education level (p<0.05). The respondents with master's degrees had the highest mean score, and the respondents' scores decreased as their education levels decreased. Thus, hypothesis H<sub>5c</sub> was confirmed: There are differences in the cognitive dimension by education level.

There were no statistically significant differences in social dimension scores by education level. Thus, hypothesis H<sub>5d</sub>: There are differences in the social dimension by education level, was rejected.

There were statistically significant differences in online purchasing intentions by

education level ( $p < 0.05$ ). The respondents with master's degrees had the highest mean score, and the respondents' scores decreased as their education levels decreased. Thus, hypothesis H<sub>6</sub> was confirmed: There are differences in online purchasing intentions by education level.

Table 6.

Digital Literacy Levels and Online Purchasing Intentions by Education Level

	Education Level	n	Mean	SD	F	p	Multiple comparison
Attitude	Primary school/High school	203	3,83	0,59	3,755	,011*	1<3
	Associate's degree	90	3,86	0,68			
	Bachelor's degree	247	4,01	0,59			
	Master's degree	87	3,95	0,64			
Technical	Primary school/High school	203	3,95	0,63	1,610	,186	
	Associate's degree	90	4,05	0,60			
	Bachelor's degree	247	4,08	0,59			
	Master's degree	87	4,04	0,58			
Cognitive	Primary school/High school	203	3,96	0,71	4,236	,006*	1<3
	Associate's degree	90	4,05	0,74			1<4
	Bachelor's degree	247	4,17	0,62			
	Master's degree	87	4,18	0,67			
Social	Primary school/High school	203	3,49	0,87	1,335	,262	
	Associate's degree	90	3,56	0,71			
	Bachelor's degree	247	3,64	0,84			
	Master's degree	87	3,61	0,83			
Digital Literacy Levels	Primary school/High school	203	3,81	0,58	3,737	,011*	1<3
	Associate's degree	90	3,88	0,53			
	Bachelor's degree	247	3,97	0,51			
	Master's degree	87	3,95	0,56			
Online Purchasing Intention	Primary school/High school	203	3,82	0,95	4,689	,003*	1<4
	Associate's degree	90	3,84	1,00			2<4
	Bachelor's degree	247	3,99	0,85			
	Master's degree	87	4,23	0,84			

Table 7 shows the results of the Anova test for digital literacy levels and online purchasing intentions by employment status. There were statistically significant differences in digital literacy scores by employment status ( $p < 0.05$ ). The respondents who had full-time jobs had the highest mean score, and the respondents who were not working had the lowest mean score. Thus, hypothesis H<sub>7</sub> was confirmed: There are differences in digital literacy levels by employment status. There were statistically significant differences in attitude dimension scores by employment status ( $p < 0.05$ ). The respondents who had full-time jobs had the highest mean score, while the students who were not working had the lowest mean score. Thus, hypothesis H<sub>7a</sub> was confirmed: There are

differences in the attitude dimension by employment status. There were statistically significant differences in technical dimension scores by employment status ( $p < 0.05$ ). The students who had full-time jobs had the highest mean score, and the respondents who were not working had the lowest mean score. Thus, hypothesis H<sub>7b</sub> was confirmed: There are differences in the technical dimension by employment status. There were statistically significant differences in cognitive dimension scores by employment status ( $p < 0.05$ ). The new graduates looking for jobs had the highest mean score, while the students who had part-time jobs had the lowest mean score. Thus, hypothesis H<sub>7c</sub> was confirmed: There are differences in the cognitive dimension by employment status.

There were statistically significant differences in social dimension scores by employment status ( $p < 0.05$ ). The students who had full-time jobs had the highest mean score, and the respondents

who were not working had the lowest mean score. Thus, hypothesis  $H_{7a}$  was confirmed: There are differences in the social dimension by employment status.

Table 7.  
 Digital Literacy Levels and Online Purchasing Intentions by Employment Status

	Employment Status	n	Mean	SD	F	p	Multiple comparison
Attitude	I have a full-time job.	267	4,06	0,61	4,245	,000*	1>4
	I am a new graduate, and I am looking for a job.	33	3,88	0,52			
	I am unemployed, but I used to have a job.	38	3,81	0,67			
	I am a student, and I am not working.	170	3,79	0,57			
	I am a student, and I have a full-time job.	26	3,82	0,73			
	I am a student, and I have a part-time job.	38	3,81	0,68			
	I am not working.	55	3,89	0,57			
Technical	I have a full-time job.	267	4,08	0,60	2,521	,020*	1>7 4>7
	I am a new graduate, and I am looking for a job.	33	4,03	0,58			
	I am unemployed, but I used to have a job.	38	3,97	0,63			
	I am a student, and I am not working.	170	4,03	0,58			
	I am a student, and I have a full-time job.	26	4,10	0,54			
	I am a student, and I have a part-time job.	38	4,05	0,67			
	I am not working.	55	3,75	0,63			
Cognitive	I have a full-time job.	267	4,19	0,65	2,772	,011*	1>4
	I am a new graduate, and I am looking for a job.	33	4,23	0,55			
	I am unemployed, but I used to have a job.	38	4,09	0,60			
	I am a student, and I am not working.	170	3,96	0,69			
	I am a student, and I have a full-time job.	26	4,06	0,65			
	I am a student, and I have a part-time job.	38	3,88	1,01			
	I am not working.	55	4,05	0,60			
Social	I have a full-time job.	267	3,63	0,82	2,476	,022*	1>7 6>7
	I am a new graduate, and I am looking for a job.	33	3,59	0,82			
	I am unemployed, but I used to have a job.	38	3,63	0,83			
	I am a student, and I am not working.	170	3,50	0,81			
	I am a student, and I have a full-time job.	26	3,71	0,86			
	I am a student, and I have a part-time job.	38	3,80	0,86			
	I am not working.	55	3,25	0,84			
Digital Literacy Levels	I have a full-time job.	267	3,99	0,53	2,734	,013*	1>4 1>7
	I am a new graduate, and I am looking for a job.	33	3,93	0,47			
	I am unemployed, but I used to have a job.	38	3,88	0,58			
	I am a student, and I am not working.	170	3,82	0,54			
	I am a student, and I have a full-time job.	26	3,92	0,56			
	I am a student, and I have a part-time job.	38	3,89	0,67			
	I am not working.	55	3,74	0,53			
Online Purchasing Intentions	I have a full-time job.	267	4,01	0,87	2,696	,014*	1>7 6>7
	I am a new graduate, and I am looking for a job.	33	4,02	1,01			
	I am unemployed, but I used to have a job.	38	3,91	0,99			
	I am a student, and I am not working.	170	3,89	0,90			
	I am a student, and I have a full-time job.	26	4,08	0,85			
	I am a student, and I have a part-time job.	38	4,19	0,81			
	I am not working.	55	3,55	1,04			

There were statistically significant differences in online purchasing intentions by employment status ( $p < 0.05$ ). The students who had part-time jobs had the highest mean score, and the respondents who were not working had

the lowest mean score. Thus, hypothesis  $H_8$  was confirmed: There are differences regarding online purchasing intentions by employment status.

Table 8 shows the results of the Anova test for digital literacy levels and online purchasing intentions by income level.

Table 8.  
Digital Literacy Levels and Online Purchasing Intentions by Income Level

	Income Level	n	Mean	SD	F	p
Attitude	0- 1500 TRY	161	3,82	0,59	1,807	,095
	1501 TRY - 2500 TRY	65	3,95	0,64		
	2501 TRY - 3500 TRY	101	3,91	0,58		
	3501 TRY - 4500 TRY	71	3,97	0,62		
	4501 TRY - 5500 TRY	63	4,03	0,60		
	5501 TRY - 6500 TRY	38	3,79	0,68		
	6501 TRY +	128	4,00	0,64		
Technical	0- 1500 TRY	161	3,98	0,57	0,513	,799
	1501 TRY - 2500 TRY	65	4,06	0,56		
	2501 TRY - 3500 TRY	101	4,04	0,57		
	3501 TRY - 4500 TRY	71	4,06	0,65		
	4501 TRY - 5500 TRY	63	4,01	0,55		
	5501 TRY - 6500 TRY	38	3,95	0,67		
	6501 TRY +	128	4,08	0,67		
Cognitive	0- 1500 TRY	161	4,00	0,70	2,095	,052
	1501 TRY - 2500 TRY	65	3,92	0,72		
	2501 TRY - 3500 TRY	101	4,10	0,66		
	3501 TRY - 4500 TRY	71	4,12	0,70		
	4501 TRY - 5500 TRY	63	4,10	0,65		
	5501 TRY - 6500 TRY	38	4,09	0,75		
	6501 TRY +	128	4,23	0,62		
Social	0- 1500 TRY	161	3,56	0,82	0,974	,442
	1501 TRY - 2500 TRY	65	3,56	0,75		
	2501 TRY - 3500 TRY	101	3,48	0,86		
	3501 TRY - 4500 TRY	71	3,63	0,79		
	4501 TRY - 5500 TRY	63	3,47	0,72		
	5501 TRY - 6500 TRY	38	3,59	0,91		
	6501 TRY +	128	3,70	0,90		
Digital Literacy Levels	0- 1500 TRY	161	3,84	0,54	1,257	,275
	1501 TRY - 2500 TRY	65	3,87	0,55		
	2501 TRY - 3500 TRY	101	3,88	0,55		
	3501 TRY - 4500 TRY	71	3,95	0,51		
	4501 TRY - 5500 TRY	63	3,90	0,50		
	5501 TRY - 6500 TRY	38	3,85	0,60		
	6501 TRY +	128	4,00	0,58		
Online Purchasing Intentions	0- 1500 TRY	161	3,91	0,97	1,372	,224
	1501 TRY - 2500 TRY	65	3,86	0,83		
	2501 TRY - 3500 TRY	101	3,97	0,80		
	3501 TRY - 4500 TRY	71	3,84	0,91		
	4501 TRY - 5500 TRY	63	3,92	1,02		
	5501 TRY - 6500 TRY	38	3,83	0,98		
	6501 TRY +	128	4,14	0,87		

There were no statistically significant differences in digital literacy scores by income level ( $p > 0.05$ ). Thus, hypotheses  $H_9$ ,  $H_{9a}$ ,  $H_{9b}$ ,  $H_{9c}$ , and  $H_{9d}$  were rejected. There were also no statistically significant differences in online purchasing intentions by income level ( $p > 0.05$ ). Thus, hypothesis  $H_{10}$  was rejected.

Table 9 shows the validity values for online purchasing intentions and digital literacy levels. Fornell and Larcker (1981) emphasizes the importance of each factor's AVE values in convergent and divergent and indicates that AVE values should be greater than 0.5 for convergent validity. Bagozzi et al. (1991) say that

convergent validity is accomplished when all the items that constitute the structure, i.e., the factor, are statistically significant. On the other hand, convergent validity is considered

acceptable if the CR value is above 0.7 even if the AVE value is lower than 0.5 (Buric et al., 2016; Huang et al., 2013).

Table 9.

The Convergent and Divergent Validity of Online Purchasing Intentions and Digital Literacy Levels

	Average Variance Extracted (AVE)	Composite Reliability (CR)
Attitude	0,42	0,82
Technical	0,45	0,83
Cognitive	0,50	0,67
Social	0,52	0,68
Digital Literacy Levels	0,45	0,93
Online Purchasing Intentions	0,76	0,93

*Confirmatory Factor Analysis (CFA)*

CFA is used to assess the extent to which the factors generated from a number of variables based on theoretical grounds (latent variables) are consistent with the real data. In other words, it analyses the degree to which a predetermined or conceptualized structure is confirmed by the collected data. Exploratory factor analysis determines the factor structure of the data based on the factor loads and regardless of a specific pre-expectation or hypothesis, whereas CFA is based on testing prediction that specific variables have large effects on predetermined

factors based on theoretical grounds (Sümer, 2000). Numerous fit indices are used to determine the adequacy of models tested with CFA. When assessing the correspondence between theoretical models and real data, a variety of fit indices are recommended because they have different strengths and weaknesses. The most frequently used fit indices are (Cole, 1987; Sümer, 2000): the chi-squared goodness of fit test, goodness of fit index (GFI), adjusted goodness of fit index (AGFI), comparative fit index (CFI), normed fit index (NFI), root mean square residual (RMR or RMS), and root mean square error of approximation (RMSEA).

Table 10.

The CFA Results for Digital Literacy Levels

Acceptable Fit Indices	Calculated Fit Indices
$\chi^2/sd < 5$	4,126
GFI > 0.90	0,905
AGFI > 0.90	0,871
CFI > 0.90	0,923
RMSEA < 0.08	0,071
RMR < 0.08	0,059

Table 10 shows acceptable fit indices (Hooper et al., 2008; Munro, 2005; Schreiber et al., 2006; Şimşek, 2007; Schumacker & Lomax, 2010; Waltz et al., 2010; Wang & Wang, 2012) and the CFA results for digital literacy levels. The CFA indicated that the GFI, CFI and RMR values had acceptable fit indices, and the  $\chi^2/SD$ , AGFI and RMSEA values were close to the fit indices.

Figure 2 shows the roadmap generated by confirmatory factor analysis for digital literacy.

Table 11 shows the CFA results for online purchasing intentions. All the fit indices of the CFA were acceptable.

Table 12 shows the CFA results. CFA indicated that the  $\chi^2/SD$ , RMSEA and RMR values had acceptable fit indices, and the GFI, AGFI and CFI values were close to the fit indices

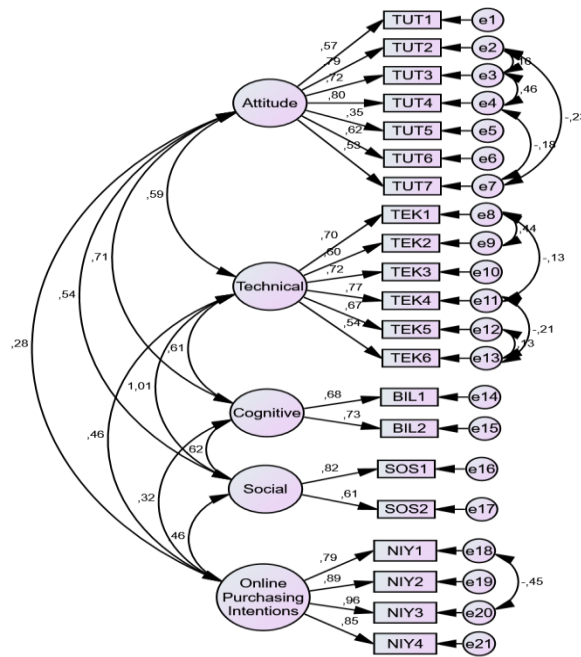


Figure 2. Digital Literacy Roadmap

Table 11.  
The CFA Results for Online Purchasing Intentions

Acceptable Fit Indices	Calculated Fit Indices
$\chi^2/sd < 5$	,005
GFI > 0.90	1,000
AGFI > 0.90	1,000
CFI > 0.90	1,000
RMSEA < 0.08	0,000
RMR < 0.08	0,000

Table 12.  
The CFA Results

			Standartize	Estimate	S.E.	C.R.	P
TUT1	<---	Attitude	0,572	1			
TUT2	<---	Attitude	0,787	1,461	0,106	13,783	***
TUT3	<---	Attitude	0,725	1,602	0,123	13,026	***
TUT4	<---	Attitude	0,804	1,863	0,133	13,964	***
TUT5	<---	Attitude	0,351	0,897	0,117	7,684	***
TUT6	<---	Attitude	0,619	1,268	0,105	12,071	***
TUT7	<---	Attitude	0,532	1,184	0,116	10,25	***
TEK1	<---	Technical	0,696	1			
TEK2	<---	Technical	0,597	0,747	0,041	18,152	***
TEK3	<---	Technical	0,720	1,191	0,073	16,393	***
TEK4	<---	Technical	0,766	1,275	0,078	16,367	***
TEK5	<---	Technical	0,672	0,828	0,054	15,344	***
TEK6	<---	Technical	0,545	0,729	0,059	12,413	***
BIL1	<---	Cognitive	0,680	1			
BIL2	<---	Cognitive	0,733	0,965	0,076	12,74	***
SOS1	<---	Social	0,816	1			
SOS2	<---	Social	0,607	0,977	0,062	15,749	***
NIY1	<---	Online Purchasing Intentions	0,786	1			
NIY2	<---	Online Purchasing Intentions	0,886	1,043	0,044	23,945	***
NIY3	<---	Online Purchasing Intentions	0,959	1,129	0,046	24,334	***
NIY4	<---	Online Purchasing Intentions	0,852	1,039	0,045	22,92	***

The Structural Equation Modelling Results

Table 13.  
 Its Effects on Generation X

			Estimate	S.E.	C.R.	P
Online Purchasing Intentions	<---	Attitude	0,421	1,640	,510	,610
Online Purchasing Intentions	<---	Technical	1,654	4,885	,664	,507
Online Purchasing Intentions	<---	Cognitive	-0,622	2,125	-,555	,579
Online Purchasing Intentions	<---	Social	-0,956	2,787	-,423	,672
TUT1	<---	Attitude	0,490			
TUT2	<---	Attitude	0,767	,220	5,592	***
TUT3	<---	Attitude	0,655	,261	5,149	***
TUT4	<---	Attitude	0,870	,330	5,832	***
TUT5	<---	Attitude	0,433	,242	4,081	***
TUT6	<---	Attitude	0,677	,269	5,355	***
TUT7	<---	Attitude	0,596	,278	4,705	***
TEK1	<---	Technical	0,542			
TEK2	<---	Technical	0,386	,121	5,451	***
TEK3	<---	Technical	0,782	,265	6,262	***
TEK4	<---	Technical	0,841	,282	6,521	***
TEK5	<---	Technical	0,737	,198	6,056	***
TEK6	<---	Technical	0,506	,196	4,694	***
BIL1	<---	Cognitive	0,544			
BIL2	<---	Cognitive	0,631	,177	5,238	***
SOS1	<---	Social	0,850			
SOS2	<---	Social	0,742	,110	9,921	***
NIY1	<---	Online Purchasing Intentions	0,842			
NIY2	<---	Online Purchasing Intentions	0,891	,082	13,288	***
NIY3	<---	Online Purchasing Intentions	0,980	,073	15,278	***
NIY4	<---	Online Purchasing Intentions	0,913	,076	13,834	***

The SEM analysis of generation X in Table 13 shows that the subscales of the Digital Literacy Scale did not affect online purchasing intentions ( $p>0.05$ ). Thus, hypothesis H<sub>11</sub> was rejected.

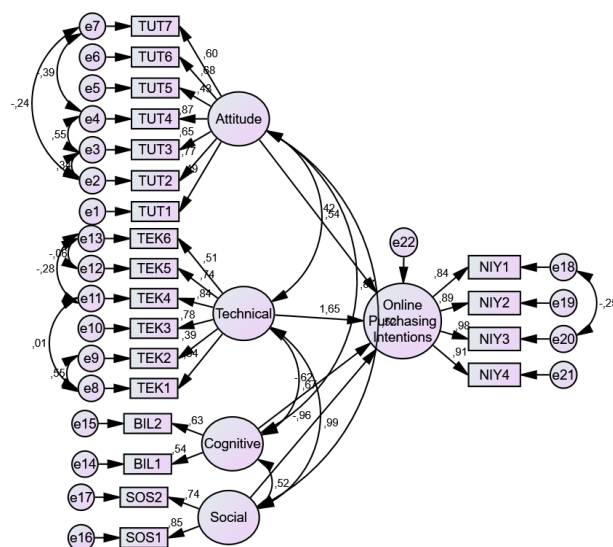


Figure 3. Generation X Roadmap

Table 14.  
Its Effects on The Generation Y

		Estimate	S.E.	C.R.	P
Online Purchasing Intentions	<--- Attitude	0,161	,315	1,058	,290
Online Purchasing Intentions	<--- Technical	0,222	,754	,416	,678
Online Purchasing Intentions	<--- Cognitive	0,003	,250	,021	,984
Online Purchasing Intentions	<--- Social	0,101	,719	,190	,849
TUT1	<--- Attitude	0,595			
TUT2	<--- Attitude	0,786	,144	10,892	***
TUT3	<--- Attitude	0,734	,156	10,397	***
TUT4	<--- Attitude	0,759	,160	10,750	***
TUT5	<--- Attitude	0,329	,157	5,596	***
TUT6	<--- Attitude	0,651	,138	9,822	***
TUT7	<--- Attitude	0,462	,138	7,180	***
TEK1	<--- Technical	0,732			
TEK2	<--- Technical	0,643	,051	14,558	***
TEK3	<--- Technical	0,712	,087	12,814	***
TEK4	<--- Technical	0,712	,093	11,740	***
TEK5	<--- Technical	0,606	,063	10,902	***
TEK6	<--- Technical	0,503	,071	8,918	***
BIL1	<--- Cognitive	0,682			
BIL2	<--- Cognitive	0,794	,110	9,915	***
SOS1	<--- Social	0,791			
SOS2	<--- Social	0,545	,093	10,498	***
NIY1	<--- Online Purchasing Intentions	0,766			
NIY2	<--- Online Purchasing Intentions	0,925	,055	19,060	***
NIY3	<--- Online Purchasing Intentions	0,986	,060	18,779	***
NIY4	<--- Online Purchasing Intentions	0,853	,060	17,389	***

The SEM analysis of generation Y in Table 14 shows that the subscales of the Digital Literacy

Scale did not affect online purchasing intentions ( $p>0.05$ ). Thus, hypothesis H<sub>12</sub> was rejected.

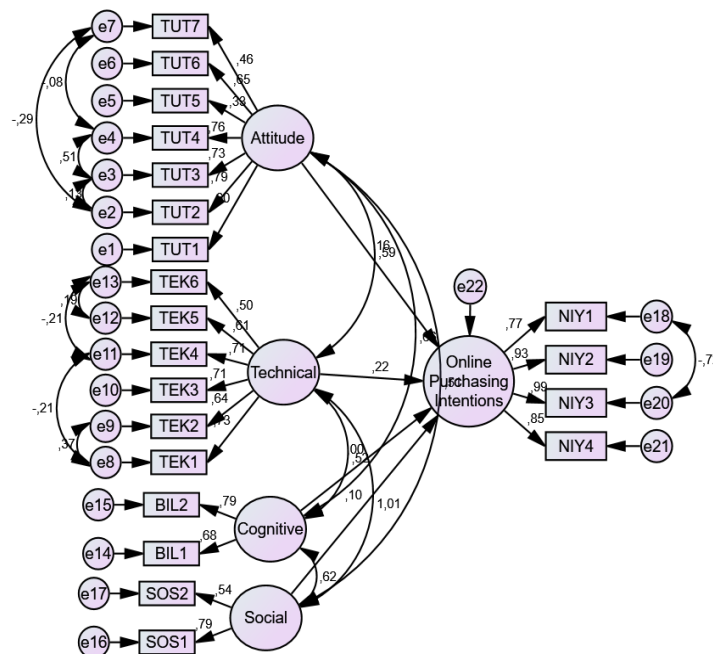


Figure 4. Generation Y Roadmap



Table 15.  
 Its effects On the Generation Z

			Estimate	S.E.	C.R.	P
Online_Purchasing_Intentions	<---	Attitude	-0,270	,320	-1,546	,122
Online_Purchasing_Intentions	<---	Technical	0,726	2,606	,400	,689
Online_Purchasing_Intentions	<---	Cognitive	0,383	,498	,862	,389
Online_Purchasing_Intentions	<---	Social	-0,558	1,721	-,355	,723
TUT1	<---	Attitude	0,638			
TUT2	<---	Attitude	0,868	,212	7,580	***
TUT3	<---	Attitude	0,815	,279	6,951	***
TUT4	<---	Attitude	0,854	,291	7,519	***
TUT5	<---	Attitude	0,323	,261	3,329	***
TUT6	<---	Attitude	0,489	,195	4,878	***
TUT7	<---	Attitude	0,532	,270	4,962	***
TEK1	<---	Technical	0,706			
TEK2	<---	Technical	0,704	,100	9,294	***
TEK3	<---	Technical	0,711	,172	7,385	***
TEK4	<---	Technical	0,820	,180	8,223	***
TEK5	<---	Technical	0,722	,133	7,474	***
TEK6	<---	Technical	0,670	,134	6,882	***
BIL1	<---	Cognitive	0,757			
BIL2	<---	Cognitive	0,693	,121	6,815	***
SOS1	<---	Social	0,807			
SOS2	<---	Social	0,639	,128	7,496	***
NIY1	<---	Online_Purchasing_Intentions	0,792			
NIY2	<---	Online_Purchasing_Intentions	0,742	,117	7,564	***
NIY3	<---	Online_Purchasing_Intentions	0,839	,140	7,693	***
NIY4	<---	Online_Purchasing_Intentions	0,767	,127	7,762	***

The SEM analysis of generation Z in Table 15 shows that the subscales of the Digital Literacy Scale did not affect online purchasing intentions ( $p>0.05$ ). Thus, hypothesis H<sub>13</sub> was rejected.

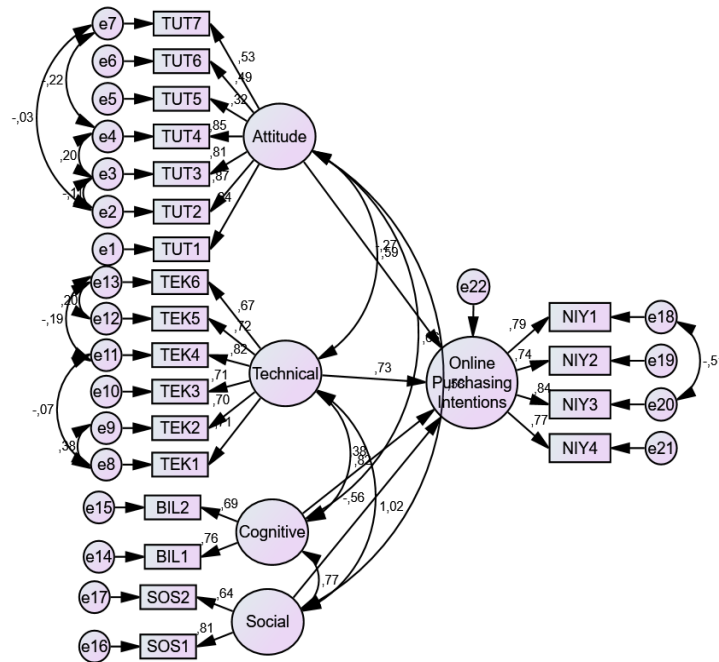


Figure 5. Generation Z Roadmap

## 5. Conclusion and Discussion

This study represents a significant contribution to the marketing literature on digital literacy, which has emerged as a pivotal concept in consumer behaviour. The study revealed that individuals belonging to Generation Y (20-39 years of age) exhibited the highest levels of digital literacy and online purchasing intention, while those belonging to Generation X (40-54 years of age) demonstrated the lowest. The study revealed that members of Generation X were less inclined to engage with digital technologies and make online purchases than the other two generations, indicating a lack of adaptation to the digital age. Other studies in the literature corroborate the finding that generation X utilises fewer digital products and engages in less online shopping (Lissitsa & Kol, 2016).

The male participants demonstrated higher digital literacy levels, suggesting that they are more likely to occupy technical roles and, consequently, to enhance their digital literacy. As Parlaktuna (2010, p. 1219) emphasised, the gender-based division of labour plays a pivotal role in determining the occupational roles of females and males. The assumption that technical tasks are more suited to males is a social prejudice. The findings of this study indicate that there are no significant differences between the online purchasing intentions of females and males.

The study revealed statistically significant disparities in digital literacy levels and online purchasing intentions across different educational attainment levels. Additionally, Horrigan (2016, p. 1) and Yeşildal (2018, p. 59) observed that individuals with bachelor's or master's degrees exhibited higher digital literacy levels compared to those with lower educational attainments. The finding that individuals with master's degrees exhibited the highest level of digital literacy, and that digital literacy levels declined as education levels did, suggests that digital technologies are utilized more extensively in the final stages of education. Furthermore, digital literacy levels exhibited variation according to the consumers'

employment status. Furthermore, Janssen and Stoyanov (2012, p. 25) discovered that individuals who sought to enhance their professional capabilities exhibited a positive correlation between their efforts and the advancement of their digital literacy. Individuals engaged in full-time employment exhibited the highest digital literacy levels, suggesting that comprehensive integration with digital technologies is attainable within the context of professional activities. This finding is consistent with the observation that students with part-time jobs, who were predominantly from Generation Y, exhibited the highest levels of intention to engage in online purchasing.

There was no significant correlation between digital literacy levels, online purchasing intentions, and income level. This result is contrary to the findings of numerous studies in the existing literature. For example, Kıyıcı (2008, p. 120), Hatlevik and Christophersen (2013, p. 245) and Yeşildal (2018, p. 58) observed that individuals with lower incomes exhibited lower digital literacy levels.

The finding that the digital literacy levels of generations X, Y, and Z did not affect online purchasing intentions indicates that consumers' online purchasing intentions are not directly proportionate to their digital literacy. In other words, lower or higher digital literacy levels do not lead to lower or higher levels of online purchasing intention. Applications and content that will engage and be used by consumers with different digital literacy levels should be developed, especially for online communication.

## 6. Limitations and Future Studies

The study is limited by the sample and the time the data was collected. Different results can be obtained by conducting the study with different samples. In future studies, it is recommended to examine the digital literacy and online purchase intentions of different age groups.

## 7. Statement of Research and Publication Ethics

This study was conducted with the approval of the Ethics Committee in accordance with the

decision of Bolu Abant İzzet Baysal University Human Research Ethics Committee in Social Sciences dated 24.12.2020 (protocol no. 2020/295) and numbered 2020/12.

#### 8. Authors' Contribution to the Article

This study was carried out alone by Assoc. Prof. Dr. Meftune ÖZBAKIR UMUT.

#### References

- Altuğ, N. (2012). Kuşaktan kuşağa tüketim olgusu ve geleceğin tüketici profili. *Organizasyon ve Yönetim Bilimleri Dergisi*, 4(1), 203-212.
- Bagozzi, R. P., Yi, Y., & Philips L. W. (1991). Assessing construct validity in organizational research. *Administrative Science Quarterly*, 36(3), 421-458.
- Bakırtaş, H., Divanoğlu, S., & Akkaş, C. (2016). *Y kuşağı farkı ne? Neyi niçin, nasıl alır ya da aldırır?* Bursa: Ekin Yayınevi.
- Bayrakçı, S. (2020). *Dijital yetkinlikler bütünü olarak dijital okuryazarlık: Ölçek geliştirme çalışması* (Doktora tezi). Marmara University Institute of Social Sciences, İstanbul.
- Bolton, R. N., Parasuraman, A., Hoefnagels, A., Migchels, N., Kabadayi, S., Gruber, T., ... & Solnet, D. (2013). Understanding Generation Y and their use of social media: a review and research agenda. *Journal of Service Management*, 24(3), 245-267.
- Buric, I., Soric, I., & Penezic, Z. (2016). Emotion regulation in academic domain: Development and validation of the academic emotion regulation questionnaire (AERQ). *Personality and Individual Differences*, 96, 138-147. <https://doi.org/10.1016/j.paid.2016.02.074>
- Callum, K. M., & Jeffrey, L. (2014). Factors impacting teachers. *Adoption of Mobile Learning*. 13(1), 141-162.
- Chung, J. E. (2010). Age differences in perceptions of online community participation among non-users: An extension of the technology acceptance model. *Computers in Human Behavior*, 26(6), 1674-1684. <https://doi.org/10.1016/j.chb.2010.06.016>
- Cohen, L., Manion, L., & Morrison, K. (2000). *Research Methods in Education* (5th ed.). Routledge. <https://doi.org/10.4324/9780203224342>
- Cole, D. A. (1987). Utility of confirmatory factor analysis in test validation research. *Journal of Consulting and Clinical Psychology*, 55, 1019-1031. <https://doi.org/10.1037/0022-006X.55.4.584>
- Crumpacker, M., & Crumpacker, J. M. (2007). Succession Planning and Generational Stereotypes: Should HR Consider Age-Based Values and Attitudes a Relevant Factor or a Passing Fad? *Public Personnel Management*, 36(4), Winter, 349-369.
- Çelik, H. E. (2009). *Yapısal eşitlik modellemesi ve bir uygulama: Genişletilmiş online alışveriş kabul modeli* (Doktora tezi). Eskişehir Osmangazi University Institute of Science, Eskişehir.
- De Carlo, L.T. (1997). On the meaning and use of kurtosis. *Psychological Methods*, 2, 292-307.

#### 9. Statement of Interest

This research is not subject to any conflict of interest.

#### 10. Grant Support

No support was received from any institution for this study. Expenses required for the study were covered by the authors.

- Deursen, A. J., & Dijk, J. A. (2014). The digital divide shifts to differences in usage. *New media & society*, 16(3), 507-526.
- Deursen, A. J., & Dijk, J. A. (2014). The digital divide shifts to differences in usage. *New media & society*, 16(3), 507-526.
- Dey, B. L., Yen, D., & Samuel, L. (2020). Digital consumer culture and digital acculturation. *International Journal of Information Management*, 51, 102057.
- Ertas, H., Kiraç, R., & Demir, R. (2019). Dijital okuryazarlık ve e-sağlık okuryazarlığı arasındaki ilişkinin incelenmesi. 3. Uluslararası 13. Ulusal Sağlık ve Hastane İdaresi Kongresi (s. 557-570). Sakarya: Sakarya Üniversitesi.
- Eshet, Y. (2004). Digital literacy: A conceptual framework for survival skills in the digital era. *Journal Of Educational Multimedia and Hypermedia*, 13(1), 93-106.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50. <http://www.jstor.com/stable/3151312>
- Gilster, P. (1997). *Digital Literacy*. New York: Wiley Computer Pub.
- Groeneveld, R. A. & Meeden, G. (1984). Measuring skewness and kurtosis. *Journal of the Royal Statistical Society Series D: The Statistician*, 33, 391-399.
- Hamutoğlu, N. B., Güngören, Ö. C., Uyanık, G. K., & Erdoğan, D. G. (2017). Dijital okuryazarlık ölçeği: Türkçe'ye uyarlama çalışması. *Ege Eğitim Dergisi*, 18(1), 408-429. <https://doi.org/10.12984/egeefd.295306>
- Hargittai, E. (2005). Survey measures of web-oriented digital literacy. *Social Science Computer Review*, 23(3), 371-379. <https://doi.org/10.1177/0894439305275911>
- Hargittai, E. (2010). Digital na(t)ives? Variation in internet skills and uses among members of the "net generation". *Sociological inquiry*, 80(1), 92-113.
- Hargittai, E. (2010). Digital na (t) ives? Variation in internet skills and uses among members of the "net generation". *Sociological inquiry*, 80(1), 92-113.
- Hatlevik, O. E., & Christophersen, K. A. (2013). Digital competence at the beginning of upper secondary school: Identifying factors explaining digital inclusion. *Computers & education*, 63, 240-247. <https://doi.org/10.1016/j.compedu.2012.11.015>
- Hogan, H., Perez, D., & Bell, W. R. (2008). Who (Really) are the first baby boomers? *Joint Statistical Meetings Proceedings, Social Statistics Section, Alexandria, VA: American Statistical Association*, 1009-1016.

- Hooper, D., Coughlan, J., & Mullen M. R. (2008). Structural Equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods*, 6(1), 53-60.
- Hopkins, K. D., & Weeks, D. L. (1990). Tests for normality and measures of skewness and kurtosis: Their place in research reporting. *Educational and Psychological Measurement*, 50, 717-729. <https://doi.org/10.1177/0013164490504001>
- Horrigan, J. B. (2016). *Digital readiness gaps*. Pew Research Center.
- Huang, C. C., Wang, Y., Wu, T., & Wang, P. (2013). An empirical analysis of the antecedents and performance consequences of using the moodle platform. *International Journal of Information and Education Technology*, 3(2), 217-221. <https://doi.org/10.7763/IJIEET.2013.V3.267>
- Janssen, J., & Stoyanov, S. (2012). *Online consultation on experts' views on digital competence*. Luxembourg: Publications Office of the European Union.
- Kıyıcı, M. (2008). *Öğretmen adaylarının sayısal okuryazarlık düzeylerinin belirlenmesi* (Doktora tezi). Anadolu Üniversitesi Eğitim Bilimleri Enstitüsü, Eskişehir.
- Kinzer, C. K. (2010). Considering literacy and policy in the context of digital environments. *Language Arts*, 88(1), 51-61.
- Lissitsa, S., & Kol, O. (2016). Generation X vs. generation Y—A decade of online shopping. *Journal of Retailing and Consumer Services*, 31, 304-312. <https://doi.org/10.1016/j.jretconser.2016.04.015>
- Marsh, J., Hannon, P., Lewis, M., & Ritchie, L. (2017). Young children's initiation into family literacy practices in the digital age. *Journal of Early Childhood Research*, 15(1), 47-60. <https://doi.org/10.1177/1476718X15582095>
- Moors, J. J. A. (1986). The meaning of kurtosis: Darlington reexamined. *The American Statistician*, 40(4), 283-284. <https://doi.org/10.1080/00031305.1986.10475415>
- Morris, M. G., & Venkatesh, V. (2000). Age differences in technology adoption decisions: Implications for a changing workforce. *Personnel Psychology*, 53(2), 375-403.
- Munro, B. H. (2005). *Statistical methods for health care research*. Philadelphia: Lippincot Williams & Wilkins.
- Nawafleh, S. (2018). Factors affecting the continued use of e-government websites by citizens: An exploratory study in the Jordanian. *Transforming Government People Process and Policy*, 12(3/4), 244-264. <https://doi.org/10.1108/TG-02-2018-0015>
- Ng, W. (2012). Can we teach digital natives digital literacy? *Computers & Education*, 59, 1065-1078. <https://doi.org/10.1016/j.compedu.2012.04.016>
- Park, C. H., & Kim, Y. G. (2003). Identifying key factors affecting consumer purchase behavior in an online shopping context. *International Journal of Retail & Distribution Management*, 31(1), 16-29.
- Parlaktuna, İ. (2010). Türkiye'de cinsiyete dayalı mesleki ayrımcılığın analizi. *Ege Akademik Bakış*, 10(4), 1217-1230.
- Prensky, M. (2001). Digital natives, digital immigrants part 2: Do they really think differently? *On the Horizon*, 9(6), 1-6.
- Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research*, 99(6), 323-338. <https://doi.org/10.3200/JOER.99.6.323-338>
- Schumacker, R. E., & Lomax, R. G. (2010). *A beginner's guide to structural equation modeling*. New York: Taylor & Francis Group.
- Shin, D. H. (2009). Towards an understanding of the consumer acceptance of mobile wallets. *Computers in Human Behavior*, 25(6), 1343-1354. <https://doi.org/10.1016/j.chb.2009.06.001>
- Sümer, N. (2000). Yapısal eşitlik modelleri: temel kavramlar ve örnek uygulamalar. *Türk Psikoloji Yazıları*, 3(6), 49-74.
- Şimşek, Ö. F. (2007). *Yapısal eşitlik modellemesine giriş, temel ilkeler ve Lisrel uygulamaları*. Ankara: Ekinoks.
- TUIK, (2020). *Nüfus ve demografi*. Retrieved from: <https://data.tuik.gov.tr/Kategori/GetKategori?p=nufus-ve-demografi-109&dil=1> Retrieved date: 10.09.2020
- TUIK, (2023). *Hanehalkı Bilişim Teknolojileri (BT) Kullanım Araştırması*, 2023. Retrieved from: [https://data.tuik.gov.tr/Bulten/Index?p=Hanehalki-Bilisim-Teknolojileri-\(BT\)-Kullanim-Arastirmasi-2023-49407](https://data.tuik.gov.tr/Bulten/Index?p=Hanehalki-Bilisim-Teknolojileri-(BT)-Kullanim-Arastirmasi-2023-49407) Retrieved date: 07.08.2024
- Tüfekci, Ö. K., & Akbıyık, F. (2023). Conceptual level strategy recommendations for understanding marketing communication efforts in digital consumption culture with neuroscience technique. *Journal of Mehmet Akif Ersoy University Economics and Administrative Sciences Faculty*, 10(2), 1710-1723.
- USA Statistical Institute, (2006). *Selected Characteristics of Baby Boomers 42 to 60 Years Old in 2006*. Age and Special Populations Branch Population Division U.S. Census Bureau, Washington D.C., 1-46.
- Valentine, D. B., & Powers, T. L. (2013). Generation Y values and lifestyle segments. *Journal of Consumer Marketing*, 30(7), 597-606. <https://doi.org/10.1108/JCM-07-2013-0650>
- Waltz, C. F., Strickland, O. L., & Lenz, E. R. (2010). *Measurement in Nursing and Health Research*. New York: Springer Publishing Company.
- Wang, J., & Wang, X. (2012). *Structural equation modeling: applications using Mplus: Methods and applications*. West Sussex: John Wiley & Sons.
- Wearesocial, (2023). *Special report digital 2024 Your ultimate guide to the evolving digital World*. Retrieved from: <https://wearesocial.com/uk/> Retrieved date: 07.08.2024
- Wolburg, J. M., & Pokrywczynski, J. (2001). A psychographic analysis of Generation Y college students. *Journal of Advertising Research*, 41(5), 33-52. [https://epublications.marquette.edu/comm\\_fac/148](https://epublications.marquette.edu/comm_fac/148)
- Yeşildal, M. (2018). *Yetişkin bireylerde dijital okuryazarlık ve sağlık okuryazarlığı arasındaki ilişki* (Yüksek lisans tezi). Necmettin Erbakan University, Konya.