



The impact of university students' tendency to purchase from e-commerce sites and demographic characteristics on student satisfaction in the digital era: Case of a foundation university

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ABSTRACT

This study mainly aimed to examine the impact of university students' purchasing tendency from e-commerce sites and demographic characteristics on student satisfaction through the example of a leading foundation research university in Türkiye. In the study, it was investigated whether there was a significant difference between students' purchasing tendencies from e-commerce sites and student satisfaction. It was also investigated whether there was a significant difference between demographic characteristics and student satisfaction. Methodologically, a descriptive online survey method including a questionnaire was applied to collect data. The survey was responded by 240 randomly selected students. The data were analyzed with SPSS-26. The study concluded that there was no significant difference between the average daily time spent on the internet and the type of device used to connect to e-commerce sites, which are among the criteria reflecting the tendency to purchase from e-commerce sites, and student satisfaction whereas there was a significant difference between the number of products purchased through e-commerce sites and student satisfaction. Furthermore, it was revealed that there was no significant difference between demographic characteristics such as gender, marital status, education and monthly income and student satisfaction, whereas there was a significant difference between age and student satisfaction. Accordingly, it was indicated that the difference in terms of age was especially in favor of students in the 22-25 age group. It is thought that the study will contribute to the literature by examining the impact of university students' purchasing tendency from e-commerce sites and demographic characteristics on student satisfaction, together with the example of a leading foundation research university. The study is limited by the selected sample foundation research university, the number of students responded, survey questions-answers, the applied statistical analysis methods and tests. Therefore, in order to reach more general results, it is suggested to expand the studies with more diverse and larger numbers of foundation research universities, students, survey questions and statistical methods.

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Introduction

Digitalization and technological developments have caused a wide range of effects on businesses, especially changes on business models (Hacıoğlu & Aksoy, 2021). The digital age we live in has created significant changes in consumers' lifestyles, consumption habits, purchasing policies and preferences, and expectations, as well as in the sales and marketing policies of e-commerce companies. E-commerce, meaning electronic commerce, is the process of buying, selling, or exchanging goods and services over the internet. According to the World Trade Organization, e-commerce is the production, advertising, sale, and distribution of goods and services through telecommunication networks (Canpolat, 2001).

E-commerce has seen rapid growth in recent decades, revolutionizing how individuals, businesses, and economies function globally (Bocean et al., 2025). One of the most striking of the global changes is the increasing tendency of consumers to purchase from e-

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commerce sites. In the age of digitalism, due to the transformative effect of digital technologies, e-commerce has rapidly developed and become increasingly widespread both in Türkiye and globally.

Digitalization and technological advancements have transformed trade, logistics, and consumption patterns. As a result, by 2023, the volume of e-commerce conducted through digital platforms worldwide exceeded \$5.8 trillion, accounting for 19% of total retail trade (OECD, 2019). The widespread adoption of digital technologies and smart devices, along with broad internet access, has transformed e-commerce from a complementary sales channel into a distinct sector with its own players, principles, and impact (Teng et al., 2023).

The expansion of the e-commerce market and channels has made it necessary to determine the tendencies, trust, and satisfaction of university students, a potential consumer subgroup, towards the e-commerce market.

E-commerce takes place on online internet platforms that replace traditional physical stores. Online shopping is generally done through websites or mobile applications. It makes shopping easy and fast, allowing for purchases to be made anytime, anywhere, regardless of geographical restrictions. E-commerce offers consumers advantages such as a wide range of products, easy comparison capabilities, 24/7 accessibility, and online payment options.

Gaining more information about customer purchasing tendencies and customer satisfaction facilitates e-commerce businesses in achieving their goals and contributes positively to sustainability. Research in this field provides e-commerce companies with various benefits, including easier achievement of goals, a customer-centric work strategy and business model, clarification of potential customer expectations, optimal design of e-commerce platforms and channels, improvement of e-commerce websites, fulfillment of customer needs, customer-focused customer service, and website design.

This study mainly aimed to examine the impact of university students' purchasing tendency from e-commerce sites and demographic characteristics on student satisfaction through the example of a leading foundation research university in Türkiye. In the study, it was investigated whether there was a significant difference between students' purchasing tendencies from e-commerce sites and student satisfaction.

It was also investigated whether there was a significant difference between demographic characteristics and student satisfaction. In the study, the purchasing tendencies of university students' from e-commerce sites were reflected in these criteria: average daily time spent online, type of device used to access e-commerce sites, and number of products purchased through e-commerce sites; while demographic characteristics were reflected in the criteria such as gender, age, education, marital status, and monthly income.

It is thought that the study will contribute to the literature by examining the impact of university students' purchasing tendency from e-commerce sites and demographic characteristics on student satisfaction, together with the example of a leading foundation research university.

Methodologically, a descriptive online survey method including a questionnaire prepared in accordance with the 5-point Likert scale was used to collect data. The survey was responded by 240 randomly selected students. The data were analyzed with SPSS-26.

Our research model was formulated to include the following main hypothesis and its related sub-hypotheses:

H1: There are significant differences in student satisfaction regarding their tendency to purchase from e-commerce sites and their demographic characteristics.

The sub-hypotheses (H1.1-H1.8) were formulated to reveal whether there is a significant difference between student satisfaction and criteria reflecting students' purchasing tendencies from e-commerce sites and their demographic characteristics, such as average daily online time, device type, number of products purchased online, gender, age, marital status, education, and monthly income.

The study consists of four parts. The first section contains the introduction. In the second part, theoretical and conceptual background, basic concepts, stakeholder theory, e-commerce, e-commerce business models and advantages of the e-commerce are briefly introduced. The success criteria in e-commerce, the relationship between digitalization and purchasing from e-commerce sites, the importance and elements of customer experience in e-commerce, and related studies in the literature are also contained in this part. The third section covers the methodology, research and an application on the impact of university students' tendency to purchase from e-commerce sites and demographic characteristics on student satisfaction, aim of the research, research model, population, sample, data, data collection, scale, hypotheses and limitations. The fourth and last section consists of statistical analysis and findings. The study ends with the conclusion and the reference list.

Literature Review

Theoretical and Conceptual Background

Stakeholder theory

Stakeholder Theory, developed by Edward Freeman, argues that companies should be accountable not only to their shareholders but also to all stakeholders affected by their operations, including customers. According to this theory, the sustainability of a business

should not only be based on profit maximization but also on strategies aimed at understanding and meeting the expectations of all internal and external stakeholders, containing customers (Freeman, 2010).

Therefore, in the digital age we live in, with the opportunities brought by technological developments and digitalization, it is a fact that the volume of trade conducted through e-commerce channels as an alternative to classic sales/marketing channels has increased significantly and is highly popular and accepted by business customers worldwide. Accordingly, in line with the spirit of this theory, it is of great importance for businesses to have awareness and orientation towards e-commerce channels and mechanisms in order to maintain their sustainability, protect and further increase their sales and profitability, and to organize their business models and sales & marketing policies to include the e-commerce market. In this context, understanding the purchasing tendencies and satisfaction levels of university students, who are younger and more inclined towards e-commerce within the customer base, will be a strategically valuable information for businesses.

Electronic commerce (e-commerce)

E-commerce, meaning electronic commerce, is the process of buying, selling, or exchanging goods and services over the internet. According to the World Trade Organization, e-commerce is the production, advertising, sale, and distribution of goods and services through telecommunication networks (Tagiyev, 2005).

The UN/CEFACT (United Nations Centre for Facilitating Administration, Trade and Transport Practices and Procedures), within the United Nations Economic and Social Council for West Asia (ESCWA), defines e-commerce as conducting business electronically. According to this definition, e-commerce involves the sharing of standardized unstructured or structured commercial information among all relevant stakeholders over the internet using any electronic means such as email or messaging, internet technology, electronic data exchange, or electronic fund transfer (ESCWA, 2025).

According to the Ministry of Trade in our country, e-commerce is a concept encompassing the sale and purchase of all kinds of goods and services using computer technology, electronic communication channels, and related technologies (such as EFT, POS terminals, fax). E-commerce is the process of producing, promoting, selling, insuring, distributing, and paying for goods and services over computer networks. Electronic commerce consists of three place traditional physical stores. Through the e-commerce mechanism, commercial transactions, including buying and selling, are carried out, and goods and services are offered to customers. Online shopping is generally conducted via websites or mobile applications, thanks to technological advancements and the opportunities provided by digitalization. E-commerce makes shopping easier and faster, allowing for purchases to be made anytime, anywhere, regardless of geographical limitations. E-commerce offers consumers advantages such as a wide range of products, easy comparison capabilities, 24/7 accessibility, and online payment options. Furthermore, the rapid spread of online commerce has brought about the need for regulations concerning e-commerce law. (Canpolat, 2001; Özmen, 2003, Arslan & Öz, 2020).

The origins of e-commerce emerged with the widespread adoption of the internet in the early 1990s. Initially used by a limited number of businesses, e-commerce is now widely practiced among individuals, businesses, and governments. Electronic commerce has accelerated commercial activities and, by offering cost advantages, has enabled even small businesses to access the global market (Öz, 2004; Öngören, 2005).

In Türkiye, e-commerce began to grow rapidly, especially after the 2000s, gaining momentum with the development of internet infrastructure and the widespread use of mobile devices. According to data from the Interbank Card Center (BKM), e-commerce expenditures made through credit card and debit card transactions constitute a significant portion of total retail expenditures in Türkiye. E-commerce offers great advantages for young people, such as university students. Students can easily access products such as books, electronic devices, and clothing online and shop at affordable prices. In addition, e-commerce platforms help students overcome time constraints (Demirel, 2010; Ticaret Bakanlığı, 2024).

E-commerce business models

In today's era of digitalization, intense competition, and sustainability, both businesses and consumers are undergoing significant changes in their behavioral patterns and business models (Camci & Aksoy, 2024; Okan & Aksoy, 2022). Accordingly, companies in a wide variety of sectors are turning to new, innovation-based products, and consumers and individuals are increasingly inclined to prefer goods and services offered through new, innovative channels (Bas & Aksoy, 2022).

This global trend and development has fundamentally changed the nature and methods of trade. E-commerce is one of the new innovative ways of doing business and consumption patterns that have emerged as a result of this trend and development. Various business models used in e-commerce can be classified according to how businesses reach their target audiences and offer their products or services. The main business models are shown in the table below:

Table 1: E-Commerce Business Models

B2C (Business to Consumer): The business-to-consumer (BTC) model is the most widely used e-commerce model. It is a model where businesses offer products or services directly to consumers. B2C businesses are themselves responsible for sourcing, selling, and shipping whatever goods they're offering. This model provides speed and convenience for individual consumers, such as university students. Consumers can access a wide range of products on these platforms, compare prices, and easily complete their orders.

B2B (Business to Business): This is a business-to-business trading model. In this model, businesses trade with each other, offering goods and services. Often used in supply chain management, this model is preferred in large-scale trading operations.

B2G (Business to Government): İşletmeden devlete doğru ticaret modeli, özel işletmelerin kamu kurumlarına hizmet ya da ürün satmasını ifade eder.

C2C (Consumer to Consumer): Consumer to consumer (C2C) is a business model where consumers connect to other consumers, typically on a website, for the purpose of selling and purchasing goods or services from each other. In this model, individuals sell products or services to each other. For university students, these platforms are popular for buying and selling second-hand goods.

C2B (Consumer to Business): The consumer-to-business model is a business model where individuals provide services to businesses.

C2G (Consumer to Government): This business model enables individuals to access government and public services electronically.

Source: (Tagiyev, 2005; Öz, 2004; Özden & Üner, 2019; Demirel, 2010; Karabaş, 2018; Shopify, 2025)

Each business model adds a different dimension to the e-commerce ecosystem. The most frequently, intensively, and widely used models by university students are B2C and C2C. While students generally make their purchases from retail e-commerce platforms, they turn to the C2C model to access second-hand products (Köksal, 2015).

Advantages of the e-commerce

E-commerce is an advantageous business model with various benefits for both consumers and businesses. It offers consumers the freedom to shop whenever and wherever they want, providing independence from time and place. This is a significant advantage, especially for individuals with busy schedules, such as university students. E-commerce allows consumers to easily find products that meet their needs by offering a wide range of product options in online stores (Özmen, 2003; Öz, 2004).

E-commerce model eliminates physical store costs and enables sales at lower prices. Furthermore, e-commerce offers advantages such as price comparison and direct access to the target audience. While the wide selection of products, particularly in categories like clothing, electronics, and books, provides advantages for university students, security and delivery issues are key factors negatively impacting student satisfaction levels (Ağaç & Solak, 2016).

Success criteria in e-commerce

The rapid growth of e-commerce has made it imperative for businesses operating in this field to become more competitive and develop various strategies to ensure sustainable success. The key criteria for success in e-commerce focus on elements such as customer satisfaction, reliability, technological adaptation, and marketing strategies (Tagiyev, 2005).

Customer satisfaction

The most important indicator of success in e-commerce is customer satisfaction. Customer satisfaction with a product or service increases repeat purchase rates and brand loyalty. E-commerce platforms that focus on customer satisfaction and offer a good customer experience with user-friendly interfaces and fast delivery options enable customers to make more positive reviews, and these reviews influence other consumers (Demirel, 2010).

Reliability

Reliability is one of the most critical elements in e-commerce. Consumers' trust in online platforms is largely affected by the security of payment systems and the protection of personal data. SSL certificates, reliable payment systems, and the protection of customer data are factors that increase the perception of trust. A study conducted on university students showed that the perception of trustworthiness significantly affects purchasing decisions (Öngören, 2005; Ağaç & Solak, 2016).

Mobile compatibility, digital marketing and social media strategies

The mobile compatibility of e-commerce platforms greatly affects the user experience. With the proliferation of mobile devices, the rate at which consumers make their online purchases via mobile devices is increasing. Mobile-compatible sites and applications, fast loading times, and user-friendly designs increase consumer loyalty to the platform.

Digital marketing is another crucial factor determining the success of e-commerce. Social media platforms are used as an effective tool for reaching consumers. Influencer marketing and social media advertising particularly influence the purchasing decisions of

young people. For example, a study conducted on university students found that social media advertisements attracted consumers' attention and increased their intention to buy (Öz, 2004; Kıranoglu, 2018; Özden & Üner, 2019).

Fast, reliable logistics and customer satisfaction

Fast and reliable logistics plays a crucial role in the success of e-commerce. Fast delivery, reliable shipping services, and smooth return processes directly affect customer satisfaction (Demirel, 2010). Logistics performance is critical, especially for consumers seeking fast and affordable solutions, such as university students.

Customer feedback and continuous innovation

E-commerce platforms improving themselves by taking customer feedback into account is another element that makes success sustainable. Feedback plays a significant role in increasing customer satisfaction and strengthening customer relationships. The e-commerce world is constantly changing and innovating. Technological innovations such as artificial intelligence, augmented reality and chatbots stand out as elements that improve customer experience. For example, algorithms that offer personalized shopping suggestions attract consumers' attention and increase sales (Karabaş, 2018; Özmen, 2003).

The importance and elements of customer experience in e-commerce

Customer experience is one of the most critical elements directly affecting the success of an e-commerce platform. Consumers' experiences on an e-commerce platform have an impact on many areas, from the purchasing process to trust in the platform. A good customer experience increases customer satisfaction and loyalty, and encourages consumers to choose the platform again. The fundamental elements of this experience are as follows (Tağıyev, 2005; Köksal, 2015; Özden & Üner, 2019): User-friendly interfaces, product variety and quality, personalization according to consumer profile, platforms offering a diverse and wide range of product options, fast and reliable delivery, security and privacy, and evaluating customer feedback are among the reasons for choosing a platform. Platforms with a wide range of options, especially in fashion, electronics, and books categories, become attractive to university students (Demirel, 2010; Ağaç & Solak, 2016).

University students and customer experience

University students stand out as a consumer group that can quickly adapt to technology in terms of customer experience. Therefore, e-commerce platforms should develop strategies specifically for the student audience.

The relationship between digitalization and purchasing from e-commerce sites

The digital age we live in has created significant changes in consumers' lifestyles, consumption habits, and expectations, and this change is most reflected in the increase in consumers' tendency to purchase from e-commerce sites. In other words, the digitalization process has largely changed consumers' purchasing patterns in favor of e-commerce sites. The development and widespread use of internet and mobile technologies within the scope of digitalization has brought a wide range of conveniences and advantages to consumers such as quick purchasing decisions, 24/7 shopping regardless of location, secure payment systems, awareness of current market prices, comparability of different prices, and viewing user comments, etc.).

The digitalization trend has affected all businesses worldwide, causing them to re-evaluate their marketing and sales strategies. A growing awareness of digitalization and a strong tendency to turn it into an opportunity have emerged within businesses. As a result, the tendency for businesses to sell and market through digital platforms has increased significantly. Accordingly, in the digitalization process, the share of sales and marketing of goods and services through e-commerce and/or digital platforms has exceeded other traditional sales channels across many sectors and different companies.

Use of next-generation technologies in e-commerce

The e-commerce sector in Türkiye, like that worldwide, is undergoing a major transformation thanks to next-generation technologies. Innovative technologies such as artificial intelligence, blockchain technology, augmented reality (AR), and big data enable e-commerce platforms to improve both customer experience and operational processes. Artificial Intelligence used to analyze consumer behavior, provide personalized recommendations, and improve customer service, artificial intelligence is one of the most important technological elements of e-commerce. Many e-commerce platforms in Türkiye use AI-based algorithms (Ticaret Bakanlığı, 2024).

Big data analytics is used to understand consumer behavior and clarify marketing strategies. E-commerce platforms using big data have seen a 25% increase in sales. Furthermore, blockchain, which is important for secure payment systems and supply chain transparency, has gained acceptance, particularly among large platforms in Türkiye (Köksal, 2015). Augmented Reality (AR) technology has enabled consumers to virtually try out products (such as furniture) in various sectors, reducing return rates and improving customer satisfaction (Kıranoglu, 2018).

Related Studies in the Literature

To avoid exceeding the page limit, some of the studies in the literature are summarized below

Alfanur and Kadono (2022) investigated the effects of gender and age on consumer purchase intentions and purchasing behavior in the context of e-commerce in Indonesia. The study utilized a hypothetical structural model incorporating nine motivational factors (convenience, website quality, social influence, facilitating conditions, hedonic motivation, economic reasons, security, variety, delivery). Data collected from 400 e-commerce consumers were analyzed. The study concluded that men were influenced by perceived website quality and convenience, while women were influenced by security, economic reasons, convenience, and social influence. Furthermore, the study revealed that consumers under 30 were influenced by convenience and perceived website quality, while consumers aged 30 and over were influenced by facilitating conditions, economic reasons, security, and social influence.

In the study conducted by Kıranoğlu (2018), the impact of campaigns and comments made on electronic social media platforms on consumer purchase intention was investigated in the case of Bartın province. Data were collected from 401 individuals selected by survey and random sampling. Exploratory and confirmatory factor analysis and structural equation modeling were applied in the study. The data were analyzed using IBM SPSS and Amos-20. The study revealed that social media campaigns, the level of influence of the trust and knowledge factors included in the model positively affected purchasing intention.

Karadeniz and Işık (2014) investigated the effect of logistics service quality on customer satisfaction and whether demographic variables created differences in logistics service quality dimensions and customer satisfaction perceptions. A survey method was used. Data collected from 397 participants were analyzed using SPSS. The data were tested with factor analysis, t-test, ANOVA test, and regression analysis. The study concluded that customers' perceptions of logistics service quality were timeliness, order quality, information quality, and responsiveness, and that all dimensions of logistics service quality had an effect on customer satisfaction. Furthermore, it was indicated that timeliness and order quality dimensions were prioritized in satisfaction.

Aydın and Derer (2015) investigated whether there is a relationship between purchasing behavior within a framework of trust and demographic variables among faculty students of Süleyman Demirel University in Isparta province, both those who shop online and those who do not. The study used a survey method, and data was collected through face-to-face interviews with 1170 students. Reliability and validity analyses, along with Kruskal-Wallis HTest and factor analysis, were performed. Data were analyzed using SPSS-20. The study concluded that four demographic factors were influential in the purchasing decision. Accordingly, the study revealed that these factors influencing the decision-making stage were, in order: "product and service-oriented factors", "privacy factor", "technological development factors", and "bad experience".

In another study by Karadeniz and Çuhadaroğlu (2016), the impact of service quality offered by businesses with e-commerce mobile applications on customer satisfaction and whether demographic variables created differences in service quality dimensions and customer satisfaction perceptions were examined. Data were collected from 415 participants via survey and analyzed using SPSS-17 and LISREL-8.80. Factor analysis, t-test, ANOVA test, reliability analysis, and structural equation modeling were used in the analyses. In the study, the service quality dimensions were identified as tangible features, reliability, enthusiasm, trust, and responsiveness. The study revealed that all dimensions of service quality have an effect on customer satisfaction, and that trust and responsiveness dimensions are prioritized in satisfaction.

The study by Özden and Üner (2019) investigated the relationship between the interaction levels of consumers shopping online and their demographic characteristics. The sample consisted of 194 consumers aged 18 and over who shopped online and lived in Bolu and Samsun. Data were collected using a questionnaire with 21 questions. Data were analyzed using SPSS-21. Frequency analysis, analysis of variance, Kaiser Meyer Olkin test, normality test, ANOVA, t-test, and Bartlett test were used in the analyses. The study concluded that there is a statistically significant relationship between consumer interaction in e-commerce and the gender and marital status of consumers. Furthermore, it revealed that there is no statistically significant relationship between the income level, education level, and age of consumers in e-commerce and consumer-consumer interaction.

Karaca (2020) examined the impact of online comments and rating scores on electronic platforms on consumers' purchasing decisions. In the study, the reasons why global e-commerce platforms are preferred by young consumers were also investigated. The study concluded that positive comments and ratings on electronic platforms significantly influence consumers' purchasing behavior through e-channels. The study also revealed that global e-commerce platforms are preferred by young consumers due to their wide range of products.

Bocean et al. (2025) examined the impact of e-commerce on sustainable development goals and economic growth in EU countries. The study utilized General Linear Model (GLM), factor analysis, linear regression, and clustering methods, along with Brown, Holt, and ARIMA estimation models. The study concluded a strong correlation between e-commerce activities and the sustainable development goals. It also revealed that countries with high levels of sustainability and digitalization benefit more from e-commerce.

Ağaç and Solak (2016) examined the online clothing shopping behavior of university students. It investigated the reasons why university students prefer e-commerce. It was concluded that fast delivery and a wide variety of products are the primary factors influencing student preferences in e-commerce.

Lastly, the study by Babacan and Şimşek (2018) examined the relationship between customer satisfaction and loyalty in the e-commerce sector using Structural Equation Modeling (SEM). The sample consisted of 410 internet users selected using simple random sampling from customers who shopped at online sales companies in Turkey. Data were collected using a survey method

suitable for a five-point Likert scale and analyzed with SPSS-24 and Lisrel 9.3. The study concluded that there is an acceptable degree of harmony and correlation between customer satisfaction and customer loyalty.

Research and Methodology

Aim of the Research

This study mainly aimed to examine the impact of university students' purchasing tendency from e-commerce sites and demographic characteristics on student satisfaction through the example of a leading foundation research university in Türkiye. In the study, it was investigated whether there was a significant difference between students' purchasing tendencies from e-commerce sites and student satisfaction.

It was also investigated whether there was a significant difference between demographic characteristics and student satisfaction. In the study, the purchasing tendencies of university students' from e-commerce sites were reflected in these criteria: average daily time spent online, type of device used to access e-commerce sites, and number of products purchased through e-commerce sites; while demographic characteristics were reflected in the criteria such as gender, age, education, marital status, and monthly income.

Importance of the Study

It is thought that the study will contribute to the literature by examining the impact of university students' purchasing tendency from e-commerce sites and demographic characteristics on student satisfaction, together with the example of a leading foundation research university.

Research Method, Population, Sample, Data Collection, Scale, Hypotheses

Methodologically, a descriptive online survey method including a questionnaire was used to collect data. The survey, which was suitable for a 5-point Likert scale, included statements regarding the criteria reflecting the students' purchasing tendencies from e-commerce sites (such as average daily time spent on the internet, type of device used to connect to e-commerce sites, number of products purchased through e-commerce sites) and demographic characteristics (such as gender, age, education, marital status, monthly income). The survey was responded by 240 randomly selected students of the sample foundation research university.

To comply with the page limit of the article, instead of detailed tables within the scope of statistical analysis, mostly only the main findings of the analyses were summarized.

Data were analyzed using SPSS-26. First, the socio-demographic distribution of the participants was determined. Using the data obtained from the scale, the sub-dimension and total scores were calculated. Descriptive statistics, frequency, percentage, mean, standard deviation, Cronbach's Alpha, and distribution information for the scores were obtained.

The skewness and kurtosis values indicated that the data set exhibited a normal distribution, and it was decided to use parametric tests. The independent samples t-test was used to determine whether the total scores differed according to a two-category variable, and Variance Analysis (one-way ANOVA) was used to determine whether they differed according to a variable with more than two categories. If a significant difference was found between categories, the LSD Test, a Post Hoc multiple comparison test, was used to determine which category caused the difference.

The main hypothesis and sub-hypotheses appear in the table below.

Table 2: Hypotheses

H1: There are significant differences in student satisfaction regarding their tendency to purchase from e-commerce sites and their demographic characteristics.	
H1.1: There is a significant difference between average daily time spent online and student satisfaction	H1.5. There is a significant difference between age and student satisfaction.
H1.2: There is a significant difference between type of device and student satisfaction	H1.6: There is a significant difference between marital status and student satisfaction.
H1.3: There is a significant difference between number of products purchased and student satisfaction	H1.7: There is a significant difference between education and student satisfaction.
H1.4: There is a significant difference between gender and student satisfaction	H1.8: There is a significant difference between monthly income and student satisfaction.

Findings and Discussions

Statistical Analysis and Findings

Sociodemographic structure, frequency & percentage values, descriptive statistics and Croanbach's alpha test

Statistical analyses were performed using SPSS-26. To avoid exceeding page limits, only the main findings and summarized results were presented instead of detailed statistical tables.

Sociodemographic structure, frequency and percentage values, descriptive statistics and Croanbach alpha (reliability) test results in the study are briefly summarized below.

Table 3: Sociodemographic Structure of the Sample, Frequency and Percentage

Criteria	Socio-Demographic	N	%
Gender	Male	89	37,1
	Female	151	62,9
Age	18-21	118	49,2
	22-25	82	34,2
	26 +	40	16,7
Marital status	Single	193	80,4
	Married	47	19,6
Education	Bachelor's degree and below	194	80,8
	Postgraduate	46	19,2
Monthly income (TL)	8500 and below	150	62,5
	8501- 15.500	47	19,6
	15.501+	43	17,9
Average daily time spent online (hr)	1-3	62	25,8
	4-6	141	58,8
	7+	37	15,4
Type of device used to access e-commerce sites	Computer	66	27,5
	Mobile	174	72,5
Number of products purchased through e-commerce sites	1-5	84	35,0
	6-10	68	35,0
	11-15	35	14,6
	16+	53	22,1

Of the total 240 students participating in the study, 151 (62.9%) were female and 89% (37.1%) were male. According to age, 118 students (49.2%) were between 18-21 years old, 82 students (34.2%) were between 22-25 years old, and 40 students (16.7%) were over 26 years old. Regarding marital status, 193 students (80.4%) were single, and 47 students (19.6%) were married. According to education, 194 participants (80.4%) had a bachelor's degree or lower, while 46 participants (19.2%) had a postgraduate degree. According to the monthly income criterion, 150 participants (62.5%) stated that their income was below 8500 TL, 47 (19.6%) stated that it was between 8501-15,500 TL, and 43 (17.9%) indicated that it was above 15,501 TL.

According to the average daily online time criterion, 62 people (25.8%) used the internet for an average of 1-3 hours, 141 people (58.8%) used it for 4-6 hours, and 37 people (15.4%) used it for more than 7 hours. Based on the type of device used to access e-commerce sites, 6 participants (27.5%) access the internet via computer, and 174 participants (72.5%) access it via phone. According to the number of products purchased through e-commerce sites in a month, 84 people (35.0%) purchased 1-5 products, 68 people (35.0%) purchased 6-10 products, 35 people (14.6%) purchased 11-15 products, and 53 people (22.1%) purchased 16 or more products.

Descriptive statistics and reliability (Croanbach) test results are presented in the table below. In brief; the table provides information on the minimum and maximum values, mean, and standard deviation distributions for the total Satisfaction Survey score. Calculated skewness and kurtosis values within the ± 1 range indicate a normal distribution of the dataset. Therefore, it was decided to use parametric tests in the study.

Table 4: Descriptive Statistical Table for the Satisfaction Survey

<i>Range</i>	\bar{x}	<i>ss</i>	<i>skewness</i>	<i>kurtosis</i>	<i>Cronbach's (α)</i>
4-70	53,30	6,02	-0,17	0,73	0,74

Furthermore, from the reliability standpoint, a Cronbach's alpha test coefficient above 0.60 is desirable. An alpha coefficient greater than 0.7 indicates high reliability. In the study, this coefficient was found to be greater than 0.7 (0.74) showing the high reliability of the measurement tool used. In other words, the Cronbach's Alpha test, applied for reliability analysis of the data, revealed that high reliability.

Analyzes of factor, correlation, independent t, Variance-One way ANOVA, LSD and Post Hoc

The results of factor, correlation, independent t, Variance-ANOVA, LSD and Post Hoc analyzes and the differences in average total satisfaction survey scores according to socio-demographic characteristics are briefly presented below.

To avoid page constraint, detailed tables were avoided and only important findings and conclusions were summarized.

Table 5: Differences in Mean total Satisfaction Survey Scores According to Socio-Demographic Characteristics

Gender	N	\bar{x}	Ss	$t_{(238)}$	P	
Female	151	53,39	5,90	0,290	0,772	
Male	89	53,16	6,25			
Age	N	\bar{x}	ss	$F_{(2,237)}$	p	<i>Difference</i>
18-21	118	52,44	6,07	6,138	0,003	2>1
22-25	82	55,15	5,32			2>3
26 +	40	52,08	6,47			
Marital status	N	\bar{x}	ss	$t_{(238)}$	P	
Single	193	53,12	6,10	-0,937	0,350	
Married	47	54,04	5,68			
Education	N	\bar{x}	ss	$t_{(238)}$	P	
Bachelor's and below	194	53,43	6,09	0,680	0,497	
Postgraduate	46	52,76	5,74			
Monthly income	n	\bar{x}	ss	$F_{(2,237)}$	P	
<8500	150	52,89	5,92	0,931	0,396	
8501- 15.500	47	54,00	5,32			
15.501+	43	53,98	7,02			
Time spent online (h)	n	\bar{x}	ss	$F_{(2,237)}$	p	
1-3	62	53,26	6,07	0,878	0,417	
4-6	141	53,01	5,92			
7+	37	54,49	6,34			
Type of device	n	\bar{x}	ss	$t_{(238)}$	p	
Computer	66	53,44	5,05	0,214	0,831	
Mobile	174	53,25	6,36			
Number of products purchased	n	\bar{x}	ss	$F_{(3,236)}$	P	<i>difference</i>
1-5	84	51,63	5,71	5,435	0,001	4>1
6-10	68	53,34	5,79			4>2
11-15	35	53,51	4,92			4>3
16+	53	55,77	6,69			

Confirmatory factor analysis of the satisfaction survey revealed that all items had statistically significant factor loadings (p<0.05). These findings confirm the single-factor structure of the satisfaction survey.

To improve goodness-of-fit indices and reduce residual errors, correlation relationships were established between items. This improved model fit and reduced residual errors. Summarized results of the model fit assesment in the light of all goodness-of-fit indices such as X2/SD, GFI, CFI, IFI, TLI, NFI, RMSEA are reflected in the table below. A chi-square test was conducted to

assess the overall fit of the model. The chi-square test shows the fit between the data and the model. These values are the values considered for model fit. GFI, CFI, IFI, TLI, NFI, and RMSEA values are considered for model fit (Karagöz, 2016).

Table 6: Model Fit Assessment

Goodness of fit	Reference values		Analysis result	Comment
	Good fit	Perfect fit		
X ² /SD	$3 \leq X^2 \leq 5$	$0 \leq X^2 \leq 2$	1,70	Perfect fit
GFI	$0,90 \leq GFI \leq 0,95$	$0,95 \leq GFI \leq 1,00$	0,93	Good fit
CFI	$0,90 \leq CFI \leq 0,95$	$0,95 \leq CFI \leq 1,00$	0,92	Good fit
IFI	$0,90 \leq IFI \leq 0,95$	$0,95 \leq IFI \leq 1,00$	0,93	Good fit
TLI	$0,90 \leq TLI \leq 0,95$	$0,95 \leq TLI \leq 1,00$	0,90	Good fit
NFI	$0,90 \leq NFI \leq 0,95$	$0,95 \leq NFI \leq 1,00$	0,90	Good fit
RMSEA	$0,06 \leq RMSEA \leq 0,10$	$0,00 \leq RMSEA \leq 0,05$	0,05	Good fit

(Ory & Mokhtarian, 2010)

In brief, according to the table, all of the goodness-of-fit indices calculated for the Satisfaction Survey indicated good fit and excellent fit (X²/sd=1.70; GFI=0.93; CFI=0.92; IFI=0.93; TLI=0.90; NFI=0.90; RMSEA=0,05).

As mentioned above, the study is based on a main hypothesis and its sub-hypotheses. Main hypothesis-H1 is that “There are significant differences in student satisfaction regarding their tendency to purchase from e-commerce sites and their demographic characteristics”. The sub-hypotheses (H1.1- H1.8) were formulated to reveal whether there is a significant difference between student satisfaction and criteria reflecting students' purchasing tendencies from e-commerce sites and their demographic characteristics, such as average daily online time, device type, number of products purchased online, gender, age, marital status, education, and monthly income.

According to the analysis results and findings summarized above, H1.1, H1.2, H1.4, H1.6, H1.7, H1.8 were rejected, while H1.3 and H1.5 were accepted.

Conclusion

This study mainly aimed to examine the impact of university students' purchasing tendency from e-commerce sites and demographic characteristics on student satisfaction through the example of a leading foundation research university in Türkiye.

In the study, it was investigated whether there was a significant difference between students' purchasing tendencies from e-commerce sites and student satisfaction. It was also investigated whether there was a significant difference between demographic characteristics and student satisfaction.

In the study, the purchasing tendencies of university students' from e-commerce sites were reflected in these criteria: average daily time spent online, type of device used to access e-commerce sites, and number of products purchased through e-commerce sites; while demographic characteristics were reflected in the criteria such as gender, age, education, marital status, and monthly income.

The study concluded that there was no significant difference between the average daily time spent on the internet and the type of device used to connect to e-commerce sites, which are among the criteria reflecting the tendency to purchase from e-commerce sites, and student satisfaction, whereas there was a significant difference between the number of products purchased through e-commerce sites and student satisfaction.

Furthermore, it was also revealed that participants generally had high levels of satisfaction with e-commerce purchases, and this did not differ significantly across most demographic variables. Accordingly, it was indicated that there was no significant difference between demographic characteristics such as gender, marital status, education and monthly income and student satisfaction level, whereas there was a significant difference between age and student satisfaction. Additionally, the study indicated that the difference in terms of age was especially in favor of students in the 22-25 age group.

It is thought that customer service awareness and priorities in this area undoubtedly played a role on this result, enabling individuals to have more satisfying and fulfilling shopping experiences. Furthermore, advanced technological features and algorithms that offer experiences tailored to consumers' consumption habits may also contribute to these high satisfaction levels.

The study is limited by the selected sample foundation research university, the number of students responded, survey questions-answers, the applied statistical analysis methods and tests. Therefore, in order to reach more general results, it is suggested to expand the studies with more diverse and larger numbers of foundation research universities, students, survey questions and statistical methods.

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