ONLINE SHOPPING BEHAVIORS

A FINAL PROJECT REPORT SUBMITTED
IN FULFILMENT OF THE REQUIREMENTS FOR COURSE STAT365 –
SAMPLING AND SURVEY TECHNIQUES
DEPARTMENT OF STATISTICS OF
MIDDLE EAST TECHNICAL UNIVERSITY

BY

2501955 Emine Doğa Aşkın
2428902 İlayda Berra Belim
2429090 Mehmet Egemen Gündür
2429397 Ecehan Vergiliel
2429264 Batuhan Saylam

January 2023

ABSTRACT

Recent technological improvements have impacted many aspects of our life and many behaviors that humans have changed. For this reason, this study investigated how students' online shopping behaviors changed according to different factors. This investigation can provide information on how to more effectively appeal to future generations based on the distinctive values and traits of university students. In order to examine the online shopping behaviors of the students, a questionnaire was prepared on Google Forms and was solved by university students. After the data collection process through the questionnaire, the demographics, shopping preferences, and future behaviors of the university student participants were determined. In addition, various plots, statistical tests, and models were created through R programming, Python, Excel, and Minitab to better understand demographics, preferences, and future behavior. As a result of the statistical analysis of the survey, it was concluded that male participants were shopping online less than other genders, and people living in big cities have a higher frequency of online shopping than those living in small cities. Secondly, it was concluded that the most preferred product was clothing, electronic products, and cosmetic products, and the most not preferred products were building supply, electronic products, and baby care for university students. Lastly, it was seen that the most important factor for the students was the quality of the product, the least important feature was instant mail or messages from the sites, and the product comparison feature was only important for half of the participants.

1. Introduction

The use of the Internet has become easier with the developing technology day by day. As a result, the influence of the Internet has increased in the field of shopping, as in everything else. Online shopping, also known as e-commerce, is the purchase of goods or services directly from a virtual market and has become a common activity for many people. According to Rajnerowicz (2022), more than 2.14 billion people worldwide shopped online in 2022, with an increase of 4.4% in 2020 and 2021. Moreover, it is stated that the main age group that makes the most online purchases in any given year is millennials, who are between the ages of 18-34, and also generation Z, those aged 18 to 24, spend most of their money online (about 9%) (Smith, 2015). Growing up in the world of digital evolution and familiar with the fundamentals and values of online marketing, this generation has no interest in traditional marketing methods (Miller, 2022). Despite such a large majority, a segment still does not

prefer to shop online. According to Angelovska (2018), 32% of Europeans who have access to the Internet do not shop online. It is stated that the main reasons for this were the desire to buy by touching the products, concern about payment security, lack of sufficient talent, and trust issues (Angelovska, 2018).

1.1. Literature Review

In this literature review, five papers about the subject were reviewed to approach the research with a better understanding. Consequently, it is decided to examine the studies in three different dimensions: the impact of demographic and socio-economic characteristics, opinions about products and sites, and previous experiences and future behaviors.

Effects of demographics and socio-economic characteristics

The demographic analysis of the studies analyzed the age, gender, income, how frequently the university students shop online, and the products they last bought from the internet. Gender is a great demographic factor when people think about online shopping behaviors. Men and women have different behaviors while doing online shopping. According to Sun and Zhang (2006), these disparities are caused by three characteristics: males are more pragmatic, females are more anxious while engaging in new activities, and females are more highly influenced by their environment (as cited in Hernández et al., 2011). Nonetheless, later research found that there are no statistically significant variations in internet usage between males and females (Shin, 2009, as cited in Hernández et al., 2011, p. 118). As a result, when a sample of seasoned online consumers is examined, the moderating influence of gender on the links between the previous usage of the internet and online buying behavior is eliminated. Less than in the case of men, women's attitudes affect their future intentions, i.e., the fact that a male shopper made an online purchase causes him to show more future shopping intentions (Hernández et al., 2011).

There is another research about online shopping behavior among universities. As a result of the demographic analysis, the study concluded that the age range that prefers online shopping the most is between 20-25 by 72%. Secondly, the analysis indicated that 32% of university students responded to the survey shop online yearly, and 27% of respondents shop online every month. The last demographic finding was the respondents' last online purchase. %54 of

the students that answered the survey said that the last product they bought online was a technological device and only %11 of them said they bought clothes or beauty products (Ahmad et al., 2018).

Shoppers' actions and methods for evaluating products in online shopping are influenced by several important elements. Age, years of internet use, and gender all have different effects on how people perceive the danger of making a purchase, which might result in diverse behaviors and approaches, according to (Bhatnagar et al. 2000, as cited in Wan et al., 2012). In online shopping research, gender and social class are not a factor in the adoption of online shopping, while age is an important factor in the preference for online shopping (Bigne et al., 2005, as cited in Wan et al., 2012). Older people have some reasons not to prefer online shopping. According to Trocchia and Janda (2000), older consumers' lack of IT experience, intolerance to change, and insistence on trying a product out first are the main barriers to the development of e-commerce that make them less likely to shop online (as cited in Hernández et al., 2011). Although gender seems to be as important a factor as age, a study on online shopping behaviors from an international and cross-cultural perspective showed that gender is not as important as age (Stafford et al., 2004, as cited in Wan et al., 2012).

Another important factor is income. Internet users with higher incomes perceive fewer implicit risks while making online transactions, which affects their demand for internet goods and services. Because of this, the internet has recently gained popularity and is now a desirable choice for customers who are more concerned with prices (Hernández et al., 2011). Since people with high incomes perceive less risk in adopting new ITs, prior research has shown that user income affects the initial contact with the internet and e-commerce (Lu et al., 2003 as cited in Hernández et al., 2011). Consumers with lower incomes base their opinions on how simple they found internet purchases to be (Hernández et al., 2011).

Opinions about products and sites

University students' online buying habits are influenced by a variety of factors, including the website's functioning, the company's reputation, the protection of its customer's information, and potential value. The study that was conducted by Ahmad et al. (2018), verified the fact that these factors have a significant impact on customers' online shopping behaviors. The first factor that impacts customers' online shopping preferences is functionality. The study shows that customers prefer to shop from websites they can easily understand the information that

the site gives, the products they like to buy have clear and reliable instructions, and the website has a simple design and provides search tools that are easy to use. The second important factor that impact the student respondents' online shopping behavior is relative price. According to the analysis, most university students prefer to shop from websites that value customer satisfaction and sites that make online shopping more practical. The other factor that influences customers' online shopping behavior is privacy. Customers need to trust the website they shop on and be sure that their information will not get stolen or shared with others without consent. Lastly, the reputation of the online shopping company also greatly impacts students' online shopping behaviors. Most of the students answered that the brand value of the company.

Other thoughts about products are security and trust which are related as Gommans et al. (2001) stated. Businesses must build consumer trust to reduce uncertainties like orders without seeing the product. Customers' concerns are mainly loss of transaction information, non-delivered products, and loss of items while acquiring or using the product as Anderson and Srinivasan (2003) predicted. Uzun & Poturak (2014) analyzed that trust and safety have an impact, according to 63,4% of respondents, while 29,8% disagreed.

According to a research study, it was shown that consumers who have online shopping experience on sites that include decision support systems for searching, comparing, and analyzing services and products are better at comprehending and evaluating products (Dennis et al., 2002, as cited in Wan et al., 2012). In addition, online shoppers who have purchased the same goods again asset the goods with less credence than online shoppers who have not (Wan et al., 2012).

Previous studies prove that internet websites greatly impact consumers' online shopping behavior. There are even studies that say that the behavior of websites almost plays the biggest role. Zellwegger (1997) argues that highlighted key factors that consumers considered while making an online purchase choice, including website features like convenience, product information, simplicity of use to search for product information, and competitive pricing (as cited in Seock&Chen-Yu, 2007). According to Lohse and Spiller (1998), website features including product lists, the number of links to other websites, promotional hours, and customer services reviews had a big impact on both monthly traffic and sales (as cited in Seock&Chen-Yu, 2007).

According to an earlier study on shopping orientation in the context of internet shopping, consumers with different purchasing orientations have different perceptions and behaviors when purchasing online. Swaminathan et al. (1999) found that consumers' shopping orientations were significantly related to the frequency with which they shopped and the amount of money they spent on the internet (as cited in Seock&Chen-Yu, 2007).

Previous experiences and future behavior

Experience and future behavior mainly depend on customer satisfaction. Pricing, recent purchasing effect on future purchasing, quality of the item, and its easy delivery are the essential requirements to make consumers satisfied. Lin (2003) says that companies have to maintain the highest supplied value quickly so that clients may view it as a benefit and continue to be loyal (as cited in Uzun & Poturak, 2014). Customer satisfaction with recent purchases is a crucial indicator of their future behavior since factors like quick product ordering, clear product information, and product comparison provide customers with a pleasant environment for online shopping. Furthermore, consumer satisfaction with online shopping is generally high as stated in the analysis done by Uzun and Poturak (2014). Hence, the last experience of the consumers has an impact on future behaviors.

The prior usage of the internet as a behavior-explanatory variable has increased massively. The experiences a user has had with the internet influence how they view e-commerce (Im et al., 2008, as cited in Hernández et al., 2011). "The present study analyses the effect of individuals' previous use of the internet, based on the inclusion and measurement of three variables: acceptance of the internet, frequency of use and satisfaction" (Oliver, 1980, as cited in Hernández et al., 2011, p.115).

According to the study, it was observed that online shopping has a positive effect on mobile shopping adoption (Bigne et al., 2005, as cited in Wan et al., 2012). Also, consumers with less online shopping experience usually gave higher search, experience, and credence ratings (Wan et al., 2012).

1.2. Aim of the study

The main purpose of the research is to understand how and on what basis university students' online shopping behaviors and intentions change. The findings of this study will

provide marketers and advertisers with insights into how to better appeal to future generations based on the unique values and characteristics of university students.

1.3. Research questions

In this research, three main research questions were addressed:

1. Is there a significant effect of university students' demographics and socio-economic characteristics on online shopping behaviors?
2. How do university students' online shopping preferences change?
3. Do university students make previous research during online shopping?

1.4. Survey description

The survey was distributed online to people between the ages of 18 and 35. Only participants who are university students were permitted to fill out the questionnaire. A total of 328 responses were received, and five of these responses were omitted because they were illogical. The remaining typos in the 323 responses have been corrected, and Turkish characters have been translated into English so that they can be analyzed correctly in the R studio environment. Row and column adjustments were made in the MS Excel program. According to the remaining answers, 57.5% of the people responding to the survey are women, 41.4% are men, and the rest are others. The survey was answered by students living in 19 different cities, yet most of these students were from Ankara. Moreover, about one-third of the students are engineering students, and 88.4% of all responders are bachelor's degrees.

2. Methodology

The research is descriptive, and the study's primary data was collected via Google Forms through a self-solved questionnaire. Data collection continued for 18 days between November and December 2022. The research questionnaire includes six questions that can be marked more than one, 11 demographic questions, Likert questions, and closed-ended questions. Although the sample size calculation varies depending on the type of study design, the basic

concept remains the same (Nayak, 2010). However, the study's sample size cannot be calculated due to a lack of sufficient funding and time constraints. There is still a need to provide a sample size calculation formula which is below.

$$n = \frac{1}{d^2/\, z^2\sigma^2 + 1/N}$$

Although the sample size cannot be calculated, it can be said that the number of people reached by the research for the response rate is 16.4%, considering that it is about 2000 people. The response rate formula is down below.

$$Response\ rate = \frac{Number\ of\ response}{Number\ of\ people\ we\ have\ reached}$$

To make inferences about our research questions, programs with different functions were used for each question such as R programming, Python, MS Excel, and Minitab.

This research has been examined in three main layers. The first is demographic factors, the second is the effects of preferences, and lastly, experiences and future behaviors.

3. Results and Findings

328 university students from 19 different cities from 6 different countries have been reached. Respondents are from almost 55 different cities, but they live mostly in Ankara, Istanbul, and Izmir because of their education. Figure 1 shows the birthplaces and Table 1 shows the cities they live in.

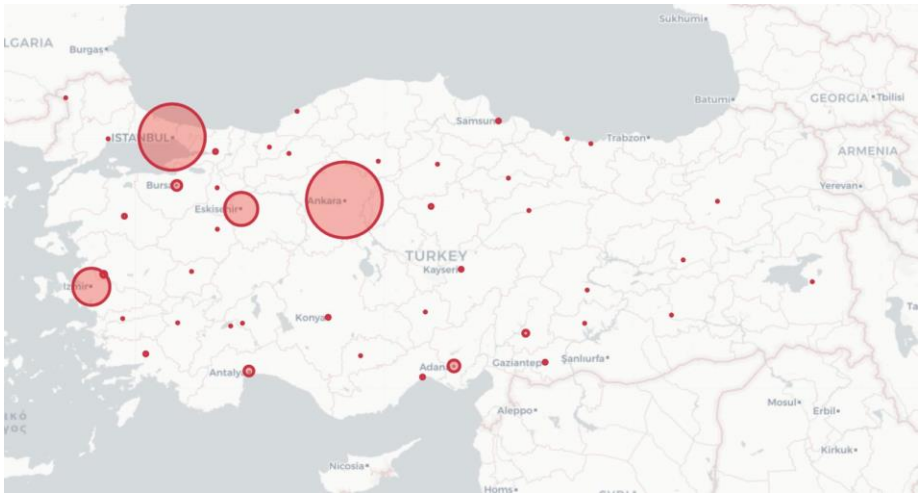
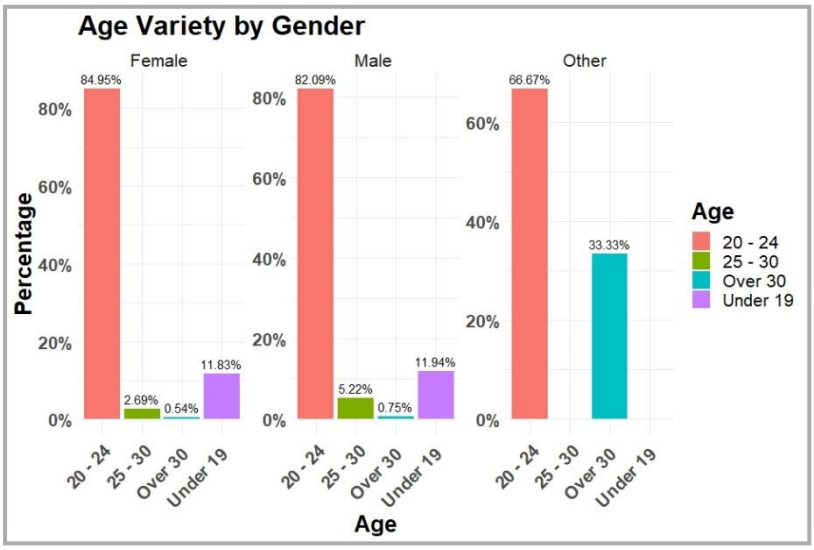


Figure 1 [Respondents' birth places]

City	Response
Ankara	184
Istanbul	93
İzmir	18
Eskişehir	9
Antalya	4
Kocaeli	2
Niğde	1
Konya	1
Italy	1
Canakkale	1
Tokat	1
Tekirdağ	1
Erzurum	1
Manisa	1
Amasya	1
England	1
Berlin	1
Netherlands	1
USA	1

Table 1 [Respondents' cities]

The bar graphs were extracted according to gender to analyze the demographic data obtained from the respondents' answers.



The age variety is mainly 20-24 years old because they are university students. Also, ~12-33% of respondents are under 19 because they are freshmen or prep school students in a university.

Figure 2 [Age by Gender Bar Plot]

Figure 3 is income variety by gender of university students who responded to the survey showed that there was no substantial amount of difference in percentages between the monthly income intervals of female and male gender respondents.

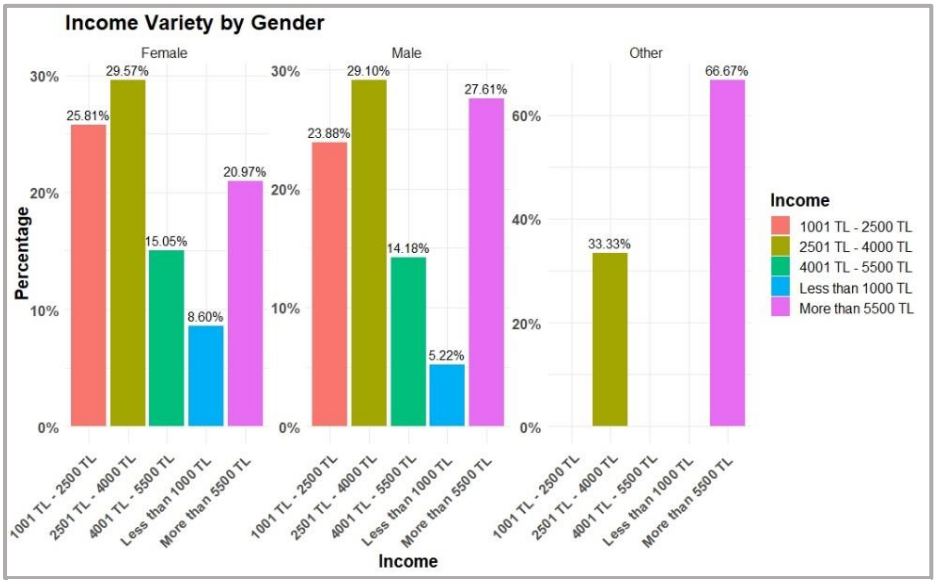


Figure 3 [Income by Gender Bar Plot]

Except for the 6.64 percent difference among the participants whose monthly income is more than 5500 TL. However, for the respondents who identified as other genders, percentages were significantly different from male and female respondents. %66.67 of the respondents who identify themselves with other genders' monthly income was more than 5500 TL while for females and males, this percentage was %20.97 and %27.61. In addition, none of the

participants who identified themselves with the other gender had a monthly income of less than 1000, between 1000-2500, and between 4001-5500.

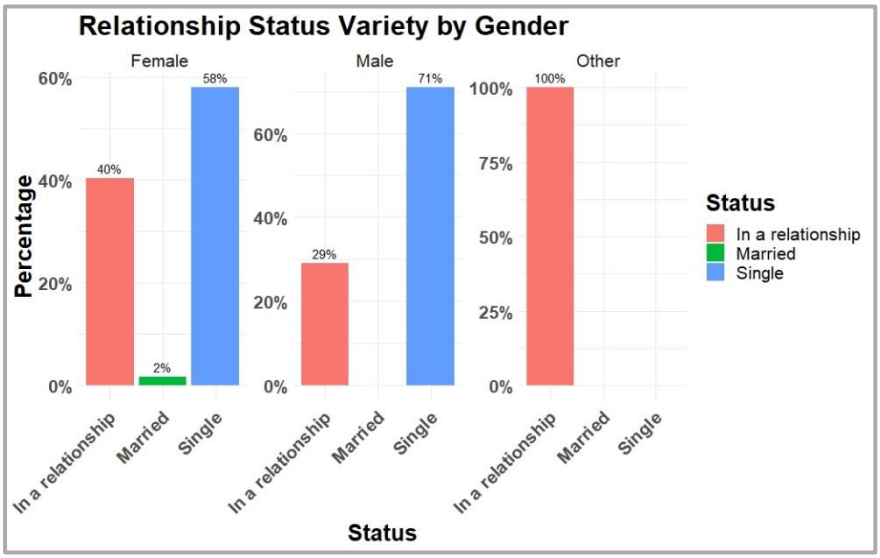


Figure 4 [Relationship Status by Gender Bar Plot]

The relationship status of university student respondents was asked in the survey. Figure 4 shows the results. The responses revealed that the majority of the females (%58) and males (%71) were single. Exceptionally, only 2% of the women among all participants were married. Also, according to the responses, it was observed that all of the respondents who identified themselves with other genders were currently in a relationship.

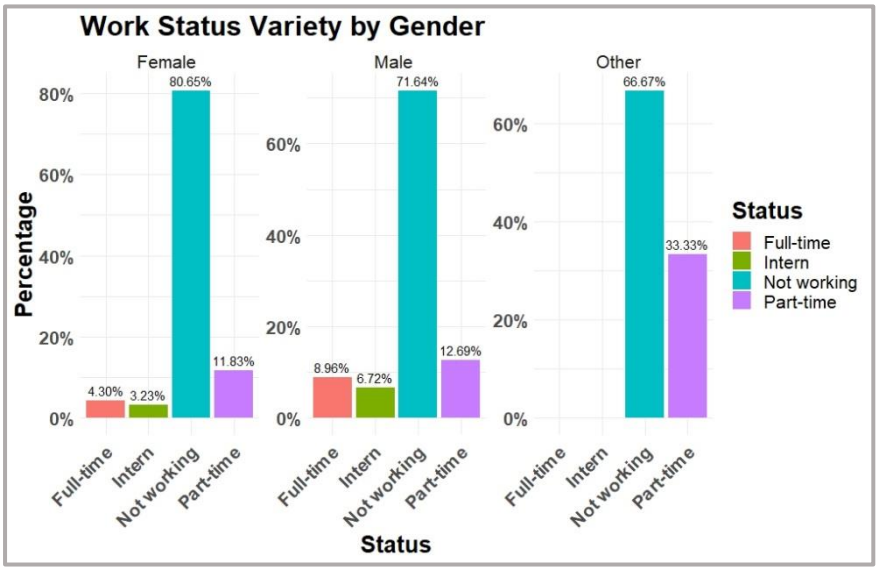


Figure 5 [Work Status by Gender Bar Plot]

The answers (Figure 5) of respondents suggested that most of the students are not currently working. However, a small percentage of male (%6.72,%8.96) and female (%3.23,%4.30) respondents were currently having an internship or working full-time. In addition, it was observed that none of the participants who identified themselves with other genders are not working full-time or having an internship. Also, it was observed that the percentage of participants who self-identified as the other gender working in a part-time job was greater than that of male and female participants who were working in part-time jobs.

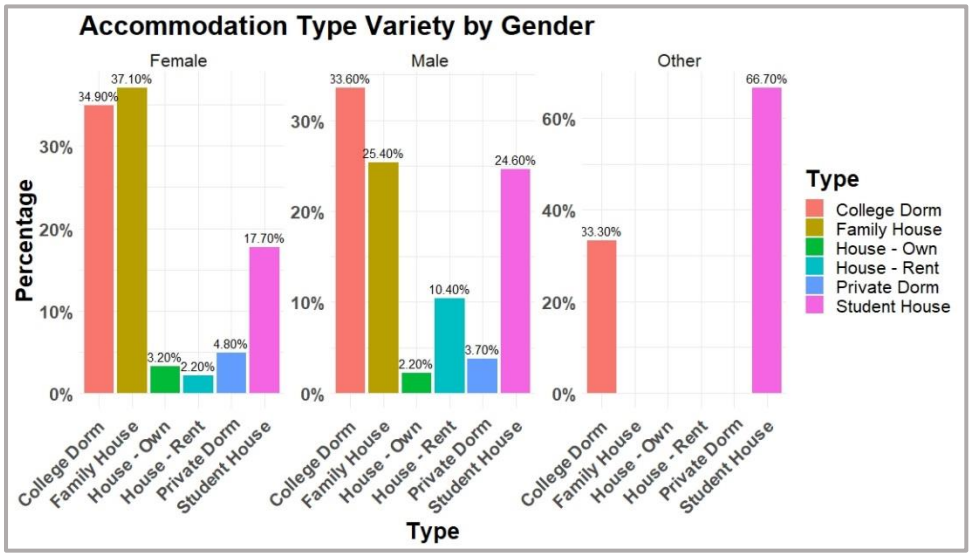


Figure 6 [Accommodation by Gender Bar Plot]

According to the bar graph (Figure 6) of accommodation type by gender of university students who participated in the survey, the majority of the female respondents stated that they are currently living in their family house (%37.09) followed by college dorms (%34.946), while the majority of males were living in the college dorms (%33.58). However, the majority of the respondents who identified themselves with other genders stated that they were living in a student house (%66.67). Also, the third most preferred accommodation type that university students were student houses. %17.74 of females and %24.627 of males responded that they are living in a student house. Additionally, only a small percentage of the female and male respondents reported that they live in a house they own, rent, or live in private dorms while there were no people of other genders who live in a house they own, rent, or live in private dorms.

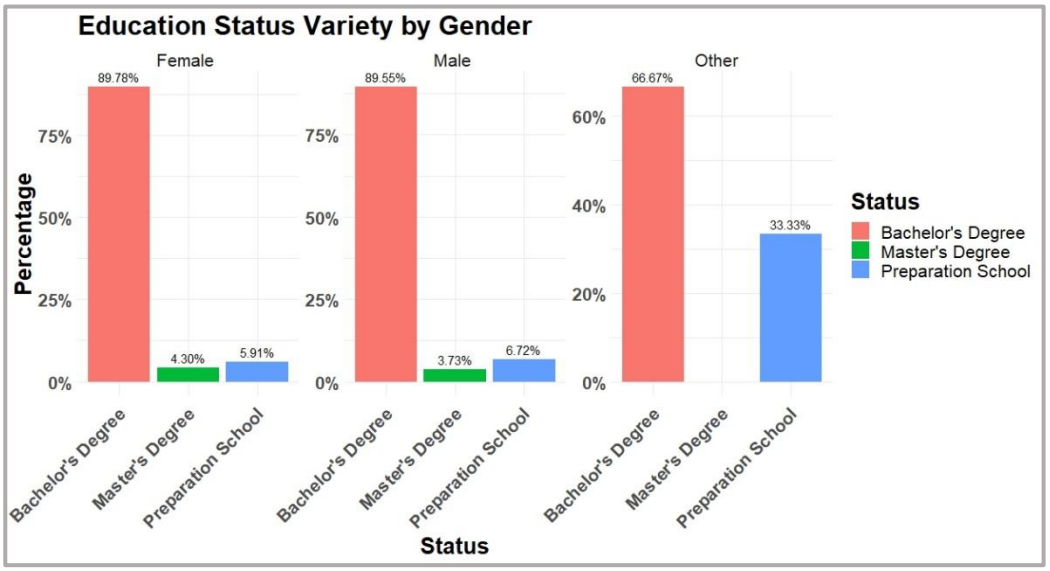


Figure 7 [Education by Gender Bar Plot]

The bar graph (Figure 7) of the education status variety by gender demonstrates that the majority of the respondents of all genders were currently enrolled in a bachelor's degree program followed by preparation school and a master's degree program. % 89.7 of the female respondents, %89.55 male respondents, and %66.67 of people who are identified with other genders were found to be currently pursuing a bachelor's degree program. Additionally, it was discovered that %4.30 of the female respondents, %3.75, and %0 of people who identified with other genders were currently pursuing a master's program. Lastly, it can be seen in the bar graph that % 5.91 of the female respondents, %6.72, and %33.33 of respondents who identify as people of other genders were currently enrolled in preparation school.

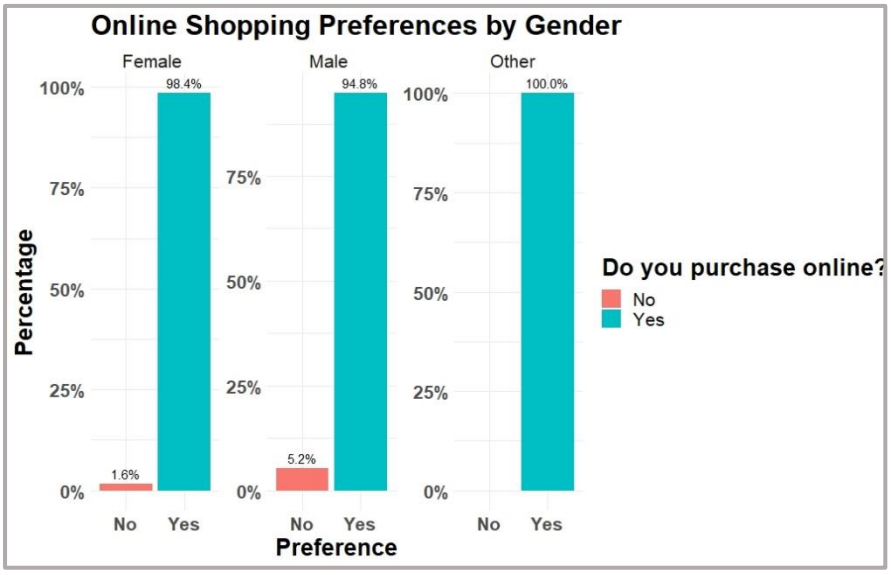


Figure 8 [Online shopping preference by Gender Bar Plot]

According to the answers of university student respondents, the bar graph of online shopping preferences of students was created. The responses showed that for all genders, the vast majority of students purchase online. Only the %6.2 of males, and %1.6 females stated that they do not purchase online while all respondents who identify themselves as other genders stated that they purchase online.

In the survey, respondents were asked which products they prefer to buy or not prefer to buy online. After receiving respondents' answers, bar plots for preferred products (Figure 9) and not preferred products (Figure 10) were created to analyze the responses properly.

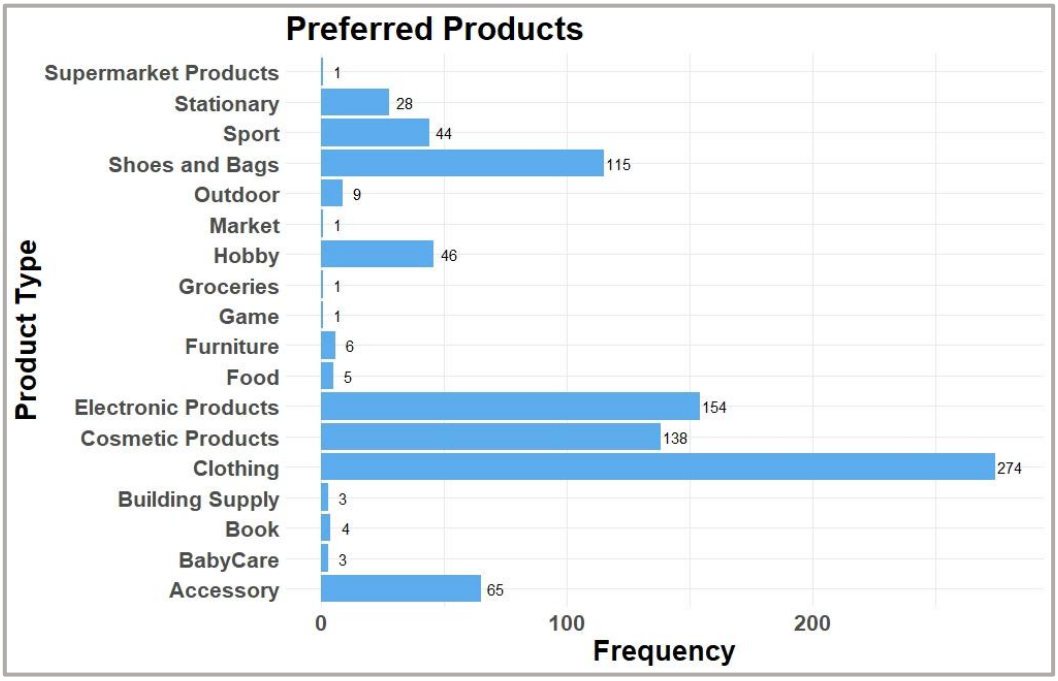


Figure 9 [Customers' most preferred products]

Responses to the survey revealed that the most preferred product type by university students is clothing (274 people) followed by electronic products (154 people) and cosmetic products (138 people). Additionally, there was only 1 person that prefer to shop for supermarket products and groceries, and 5 people who prefer to buy food only online. According to the answers given to the preferred product question, it can be said that many universities do not prefer to buy their food and supermarket products from the internet, and they tend to shop from conventional shopping places.

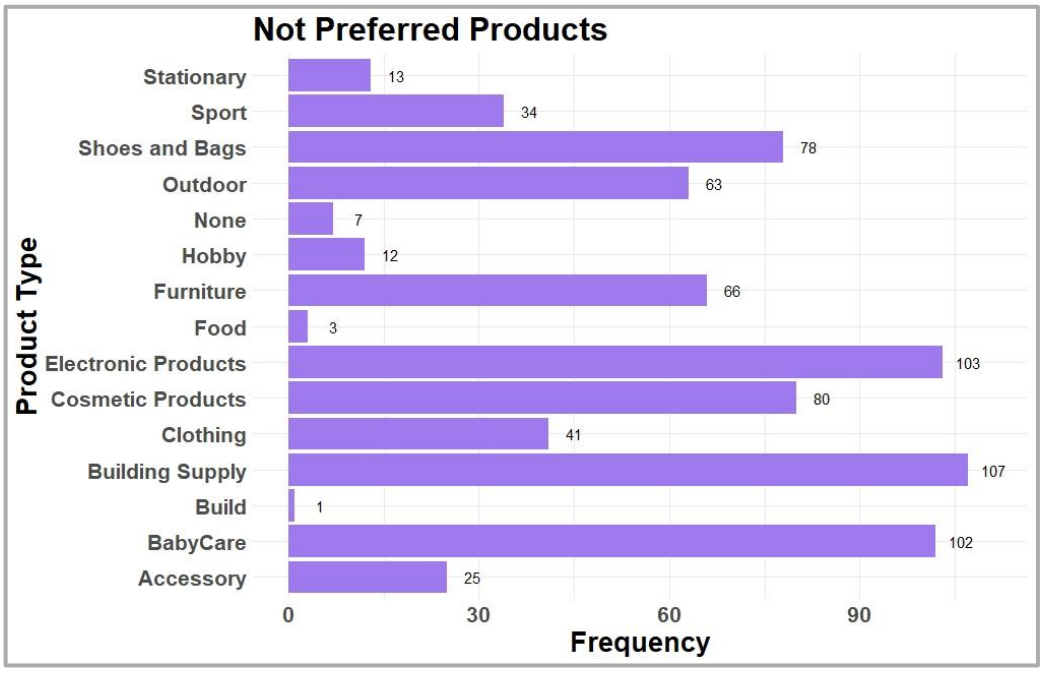


Figure 10 [Customers' least preferred products]

The question that was asked in the survey to university students about which product types they do not prefer to buy online. The results revealed that 103 people do not prefer to buy their electronics online and 78 people do not prefer to buy shoes and bags. Also, it was seen that the product type that is not preferred to be purchased via online shopping was building supplies, baby care products, and electronics. However, since most of the respondents were young university students who do not own a home or have a child, it can be thought that their answers were not because they did not prefer to buy it online, but because they did not need that specific type of product and do not buy it even through conventional shopping. Secondly, 80 people responded that they do not prefer to buy cosmetic products so this can also be about the misunderstanding of the question since many male respondents may not shop for cosmetic products.

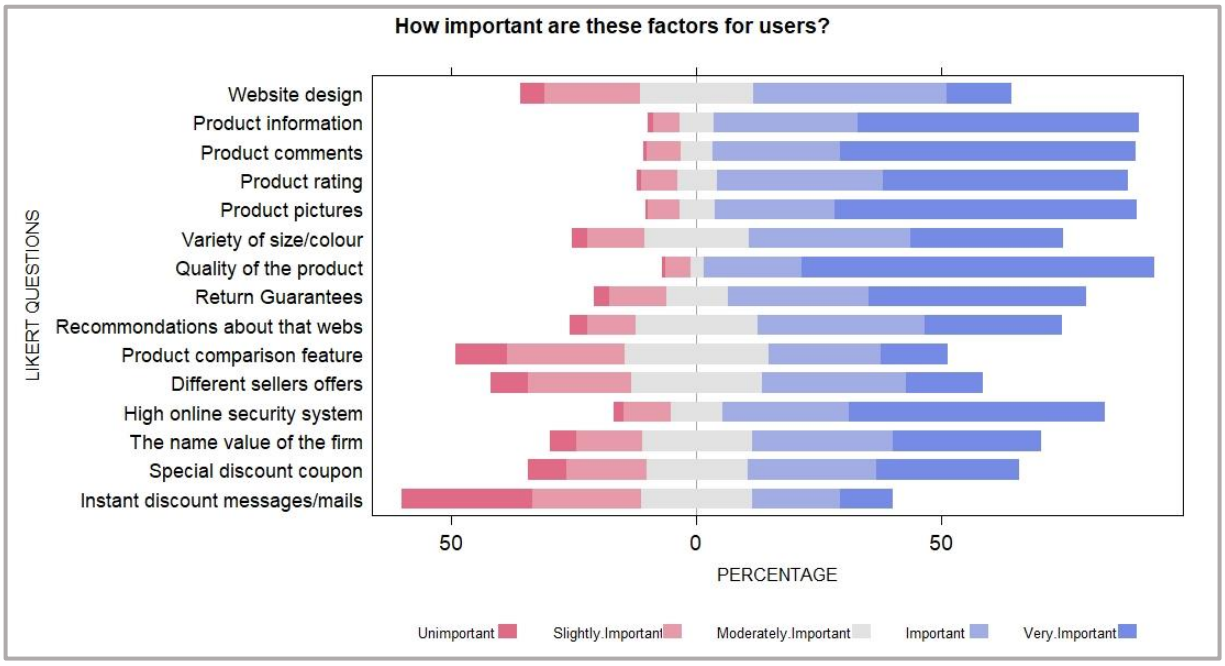


Figure 11 [Likert Bar Plot]

In the survey, to better understand the online shopping behaviors of university students, they were asked Likert scale questions about how important the features they encounter on online shopping sites are for them.

Cronbach's Alpha:
0.8954

Variable	Mean (Out of 5)
Website design	3.364
Product information	4.364
Product comments	4.383
Product rating	4.249
Product pictures	4.403
Variety of size/color	3.773
Quality of the product	4.575
Return Guarantees	3.997
Recommendations about that website	3.732
Product comparison feature	3.051
Different sellers offer	3.243
High online security system	4.163
The name value of the firm	3.652
Special discount coupon	3.527
Instant discount messages/mails	2.639

Table 2 [Likert questions' means table]

The answers (Figure 11) revealed that the most important feature for them was the quality of the product. After the quality of the product, the second most important feature was pictures of the products followed by product comments. In addition, the plot showed that many respondents also value product pictures, the high-security system, and return guarantees of shopping websites. Also, according to the answers given, the product comparison feature has great importance for some participants, while this feature was found to be unimportant or less important compared to an almost equal number of other participants. For further analysis, Table 2 shows us the mean of responses for Likert scale questions. Finally, more than half of the respondents stated that instant discount messages or emails were the less important function of any online shopping website.

A reliability test has been conducted; Cronbach's Alpha value (0.8954) shows us that our survey's reliability is almost excellent.

4. Analysis

4.1. Welch Two Sample t-test

First, cities were sub-grouped into two groups: three big cities (Ankara, Istanbul, Izmir) and other cities. Then a hypothesis test has conducted at a 95% level of significance to see if there is a difference between these groups' means of purchase frequency.

H_0: There is no difference between the purchase frequencies of people who live in three big cities and other cities.

H_1: There is a difference between the purchase frequencies of people who live in three big cities and other cities.

The R Studio result is below:

Welch Two Sample t-test

data: freq by city

t = -3.4232, df = 132.41, p-value = **0.0008239**

alternative hypothesis: true difference in means between group 0 and group 1 is not equal to 0.

city	count	mean	sd
0	28	23	18.81292
1	295	41.88776	72.34661

1 = three big cities (Istanbul, Ankara, Izmir)
0 = other cities

Table 3 [Cities' purchase frequency table]

As one can see with the p-value (**0.0008239)** of the test, there is enough evidence to reject the null hypothesis at a 95% significance level. It can be stated that there is a difference between the means of these city groups. Moreover, to generalize this result to the population, it can be stated that three big cities mean more than other cities.

4.2. Contingency Table

To visualize two questions together, a cross-table has been made. In the column, there are the income levels of respondents and rows are the answers to the question: "Did you use sites with decision support systems to compare products, such as cimri.com, etc., while collecting information about the products you will buy?". As can be seen, there is little difference between "Yes" and "No" responses. Indeed, university students have been doing previous research when they want to buy something online.

	NA	No	Yes	Sum
1001 TL - 2500 TL	5	23	52	80
2501 TL - 4000 TL	2	31	62	95
4001 TL - 5500 TL	0	18	29	47
Less than 1000 TL	0	10	13	23
More than 5500 TL	3	21	54	78
Sum	10	103	210	323

Table 4 [Contingency table about income and decision support system usage]

4.3. Ordinal Logistic Regression

Our model is an ordinal logistic regression model because it is "the relationship between an ordinal response variable and one or more explanatory variables." (Parry, 2016). As can be seen in Table 5, our response variable is purchase frequency and it has 5 levels: Never, Once a year, Once a month, Once a week, and Once a day.

	freq	Never	Once a year	Once a month	Once a week	Once a day	Sum
city	income						
Other cities	Less than 1000	0	0	2	0	0	2
	1001-2500	0	0	7	3	0	10
	2501-4000	0	0	5	2	0	7
	4001-5500	0	0	1	1	0	2
	More than 5500	1	0	4	2	0	7
Istanbul, Ankara, Izmir	Less than 1000	0	0	15	6	0	21
	1001-2500	5	2	40	20	3	70
	2501-4000	1	3	47	31	5	87
	4001-5500	0	1	22	20	2	45
	More than 5500	2	0	34	32	3	71
Sum		9	6	177	117	13	322

Table 5 [Contingency table of city, income, and purchase frequency]

In the model, response values are logistic and have threshold values. So, there are 4 different models.

Model 1 ~ logit "$P\ (Y \leq$ " $Once\ a\ year$) = -2.5229 + 0.44 * city + 0.2048 * income

Model 2 ~ logit "$P\ (Y \leq$ " $Once\ a\ month$) = -1.9950 + 0.44 * city + 0.2048 * income

Model 3 ~ logit "$P\ (Y \leq$ " $Once\ a\ week$) = 1.4623 + 0.44 * city + 0.2048 * income

Model 4 ~ logit "$P\ (Y \leq$ " $Once\ a\ day$) = 4.2730 + 0.44 * city + 0.2048 * income

And the R-studio output for the coefficients is down below.

Value	Std. Error	p-value
city	0.4399669	0.2631985 ☹
income	0.2048298	0.0185287 *

Although the city coefficient's p-value is not statistically significant, the income is. It can infer that, while the city has no effect on purchase frequency, income level does.

4.4. Chi-Square Test

There is a curiosity about if university students were doing previous research about the most preferred products. So, the cross-table (Table 6) was created and a chi-square test at a 95% level of significance was conducted.

H_0: The proportion of people doing online shopping that collect information about the products is the same for all mostly preferred products.

H_1: The proportion of people doing online shopping that collect information about the products is not the same for all mostly preferred products.

Collecting info	No	Yes
Product types		
Accessory	1	64
Building Supply	1	2
Clothing	2	272
Cosmetic Products	0	138
Electronic Products	5	149
Furniture	1	5
Hobby	1	45
Outdoor	0	9
Sport	1	43

Table 6 [Contingency table about preferred products vs collecting info]

chi2 statistic: 33.925

p-value: **0.000041923**

The p-value is smaller than our alpha value (**0.05**). There is enough evidence to reject the null hypothesis. So, university students do make research about the products even if they prefer them the most.

5. Discussion/Conclusion

In a nutshell, this research examines university students' online purchase behaviors, and this purpose has been accomplished by conducting a survey. After collecting data, there are various analyses done on it. If one wants to conclude these results briefly, here is a short result of what this research has achieved:

Women prefer online shopping more than men. In addition, the top three most preferred products while shopping online are clothing, electronic products, and cosmetic products, respectively. On the other hand, the first three products that are never preferred while shopping online are building supplies, electronic products, and baby care, respectively. Therefore, while clothes and cosmetic products are most preferred during online shopping, building supplies and baby care products are not preferred much, and electronic products are preferred by some consumers while not preferred by some of them in online shopping. In addition, while instant discount messages or emails are mostly unimportant for consumers in online shopping, the quality of products is very important for most consumers. The product comparison feature in online shopping is moderately important for most consumers. Additionally, the frequency of online shopping by consumers in the big city and the small city differs. The proportion of people doing online shopping that collect information about the products is not the same for all mostly preferred products.

As a suggestion, product owners who want to sell their goods to university students efficiently should decrease the instant messages and should focus on the quality of the product more.

References

Ahmad, M., Bashir, S., Turi, J. A., Muqarrab, H., & Farah, G. A. (2018). Online shopping behavior among university students: case study of must university. *Advances in Social Sciences Research Journal*, *5*(4). https://doi.org/10.14738/assrj.54.4429

Anderson, R. E., & Srinivasan, S. S. (2003). E-satisfaction and e-loyalty: A contingency framework. Psychology & marketing, 20(2), 123-138.

Angelovska, N. (2018, October 23). *6 Reasons Why Europeans Don't Shop Online.* Forbes. https://www.forbes.com/sites/ninaangelovska/2018/10/23/6-reasons-why-europeans-dont-shop-online/?sh=277bc2342869

Bhatnagar, A., Misra, S., & Rao, H. R. (2000). On risk, convenience, and internet shopping behavior. *Communications of the ACM*, *43*(11), 98–105. https://doi.org/10.1145/353360.353371

Bigne, E., Ruiz, C., & Sanz, S., (2005) The impact of internet user shopping patterns and consumer. *Qualitative Market Research, (5),* 281-290.

Dennis, C., & Sandhu, B. (2002). From bricks to clicks: understanding the e-consumer. Qualitative Market Research: An International Journal.

Gommans, M., Krishnan, K.S., Scheffold, K.B., (2001). From brand loyalty to e-loyalty: a conceptual framework. *J. Econ. Soc. Res. 3,* 43–58.

Ha, Y., & Im, H. (2012). Role of web site design quality in satisfaction and word of mouth generation. *Journal of Service Management*.

Hernández, B., Jiménez, J., & José Martín, M. (2011). Age, gender, and income: Do they really moderate online shopping behavior? *Online Information Review*, *35*(1), 113–133. https://doi.org/10.1108/14684521111113614

Lin, C. C. (2003). A critical appraisal of customer satisfaction and e-commerce. Managerial Auditing Journal.

Lohse, G. L., & Spiller, P. (1998). Electronic shopping. *Communications of the ACM, 41(7),* 81-87.

Lu, J., Yu, C.S., Liu, C. & Yao, J. (2003), Technology acceptance model for wireless internet, *Internet Research: Electronic Networking Applications and Policy*, *3(13),* 206-22.

Miller, E. (2022, October 17). *Online Shopping Habits of Today's Different Generations.* OptiMonk. https://www.optimonk.com/online-shopping-habits-of-todays-different-generations/

Nayak BK. Understanding the relevance of sample size calculation. Indian J Ophthalmol. 2010 Nov-Dec;58(6):469-70. doi: 10.4103/0301-4738.71673. PMID: 20952828; PMCID: PMC2993974.

Parry, S. (2016, June). Ordinal Logistic Regression models and Statistical Software: What You Need to Know. Cornell Statistical Consulting Unit. https://cscu.cornell.edu/wp-content/uploads/91_ordlogistic.pdf

Rajnerowicz, K. (2022, December 19). *Online Shopping Statistics: Ecommerce Trends for 2023*. Tidio. https://www.tidio.com/blog/online-shopping-statistics/

Seock, Y. K., & Chen-Yu, J. H. (2007). Website evaluation criteria among US college student consumers with different shopping orientations and Internet channel usage. *International Journal of Consumer Studies, 31, 204-212*. https://doi.org/10.1111/j.1470-6431.2006

Shin, D. H. (2009), Towards an understanding of the consumer acceptance of mobile wallet. *Computers in Human Behavior, 25(6),* 1343-54.

Smith, C. (2015, April 27). *Gen X and baby boomers present a huge opportunity for online retailers*.Inseder.https://www.businessinsider.com/the-age-demographics-of-who-shops-online-and-on-mobile-2015-4

Stafford, T. F., Turan, A., & Raisinghani, M. S. (2004). International and cross-cultural influences on online shopping behavior. Journal of Global Information Technology Management, 7(2), 70-87.

Sun, H., & Zhang, P. (2006). The role of moderating factors in user technology acceptance. *International Journal of Human-Computer Studies*, *64*(2), 53–78. https://doi.org/10.1016/j.ijhcs.2005.04.013

Swaminathan, V., Lepkowska-White, E., & Rao, B. P. (1999). Browsers or buyers in cyberspace? An investigation of factors influencing electronic exchange. *Journal of computer-mediated communication, 5(2), JCMC523.*

Trocchia, P.J. & Janda, S. (2000), A phenomenological investigation of Internet usage among older individuals, *Journal of Consumer Marketing*, *17(7)*, 605-616. https://doi.org/10.1108/07363760010357804

Uzun, H., & Poturak, M. (2014). Factors Affecting Online Shopping Behavior of Consumers. *European Journal of Social and Human Sciences, 3*.

Wan, Y., Nakayama, M., & Sutcliffe, N. (2012). The impact of age and shopping experiences on the classification of search, experience, and credence goods in online shopping. Information Systems and e-Business Management, 10(1), 135-148.

Zellweger, P. (1997). *Information Systems and e-Business Management, 10(1),* 135-148. Web-based sales: Defining the cognitive buyer. *Electronic Markets, 7(3), 10-16.*