ISSN 2409-2665
Journal of Logistics, Informatics and Service Science
Vol. 8 (2021) No. 1, pp. 1-19
DOI:10.33168/LISS.2021.0101

Differentiation of E-commerce Consumer Approach by Product Categories

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Abstract. E-commerce is a cost-effective way to communicate with consumers and its role is growing both in fast-moving goods retail and in specialized retail. This is due to the growing adoption of e-commerce tools by consumers in various product categories. Nevertheless, primary research in the field of e-commerce approaches e-commerce as a general sales channel and examines the attitudes and behavior of consumers regardless of the type of product being purchased. The literature in the field of retail management and marketing indicates that consumers have different attitudes and different behaviors concerning the product category they purchase. On the other hand, the majority of research papers and studies in the field of e-commerce approach the analysis of consumer behavior regardless of the type of product purchased. Therefore, this paper aims to examine whether there are differences in the attitudes and behavior of consumers in e-commerce while taking into consideration the product category being promoted and purchased. The primary research is conducted for three product categories (1) groceries, (2) consumer electronics, (3) clothing and footwear. In the survey consumers' attitudes in four behavior patterns were tested. Following behavior patterns were tested: (1) hedonism, (2) search for information, (3) saving possibilities, (4) skepticism towards e-commerce. The results confirm the existence of statistically significant differences in consumer attitudes and behavior among tested product categories. Therefore, in future research studies and management practice, e-commerce should be approached and scrutinized not only as a general sales channel but also as a specialized sales channel regarding product categories.

Keywords: E-commerce, electronic retailing, B2C, consumer attitudes, consumer behavior, groceries, consumer electronics, clothing, and footwear.

1. Introduction

The intensive development of information and communications technology, global Internet availability, overall network coverage, and increasing computer literacy of the population are all factors that are contributing to e-commerce popularization and importance. E-commerce is a cost-effective way of communicating with consumers, so over the recent decades, its role has grown rapidly in the segment of consumer goods, as well as in specialized retail. Indeed, recent research shows that the COVID-19 pandemic of e-commerce is gaining momentum and that the number of consumers who frequently shop online has increased about 30% in European countries (DirectLink, 2020).

In the European Union, the share of individuals who use e-commerce has exceeded 70% of the population over the age of 16, and the share of those who buy online is the highest in the younger generations of consumers (Knezevic et al., 2020).

This paper aims to, first of all, define e-commerce, point out its advantages from the consumer's point of view and further explain the meaning of e-retail over different product categories.

In order to identify these differences in consumer behavior, concerning product categories that are bought and sold online, a primary survey has been conducted for three different product categories among which differences in consumer behavior were analyzed. The comparison was made for all four common types of consumer behavior when shopping in e-commerce: (1) hedonism - enjoying the very experience of shopping; (2) curiosity - passionately gathering information about products and services; (3) thrift - the search for action prices and savings; and (4) suspicion - fear and suspicion towards a new sales channel.

The structure of the paper is as follows. Firstly, the characteristics and development of e-commerce as a new modern sales channel are going to be defined and elaborated with an emphasis on product categories. Secondly, the methodology used and sample details of the primary research will be explained and presented. Thirdly, results of the primary research will be discussed focusing on four main consumer behaviors (shopaholics, researchers, savers, skeptics). Finally, conclusions will be outlined together with research limitations and implications.

2. Characteristics and development of E-commerce

Different sources give fundamentally different definitions of e-commerce. Laundon and Traver (2015, p. 49) define e-commerce as “the use of the Internet, the World Wide Web, and mobile applications to conduct business activities. More formally, these are digitally enabled commercial transactions between organizations and/or individuals. ” Panian (2000) defines e-commerce as the process of buying, selling, or exchanging products, services, or information via a publicly available computer

network, the Internet, which offers a great opportunity to reduce costs and shorten transaction times. Chaffey (2014, p. 12) argues that e-commerce is "any electronic exchange of information between a company and its external stakeholders".

Continuing on the above, e-commerce can be defined in the narrower and the broader sense. In the narrower sense, e-commerce is digital purchasing and sales as well as related transmission of products, services, information, and money via computer networks (including the Internet). Some authors here include all of the sales support and promotional activities, supported by computer networks before as well as after the purchase. Other authors point out that individuals can participate in sales and sales support transactions, as well as private and public organizations (Knezevic et al., 2018). Turban et al. (2015, p. 7) argue that some authors do not distinguish between the concepts of e-commerce and e-business, so e-commerce in the broader sense includes commercial activities and activities that support the sales process but also encompassing e-learning, online collaboration, and other digital business activities.

When discussing different forms of e-commerce, B2C e-commerce (e-commerce to consumers also known as e-retail) is the dominant form that is measured by the number of transactions performed in a given period, while B2B e-commerce (e-commerce between companies or e-wholesale) is the dominant form measured by generated revenues (Knezevic et al., 2017). Both of the e-commerce forms grew rapidly even during the deep economic crisis of 2008-2014.

In e-retail (B2C e-commerce, e-retail, or e-tailing) the buying process consists of several steps and it is no longer possible to fully distinguish where e-commerce begins and where it ends, given that at each stage of the sale process the digital channel can be used to execute a particular phase of buying or selling (see Fig. 1). Typical retail steps are (1) seeking products information in traditional stores or online, (2) the act of buying a product that can be done online or in traditional stores, then (3) paying for products or services electronically or with cash payment upon the product being received and (4) collection of the product in a web store (for digital products) or in a traditional store (for physical products) or delivery of the purchased product to the consumer via delivery service or mail.

Laundon and Traver (2015, p. 375) and Turban et al. (2010, p. 77) argue that important drivers and benefits of online shopping from a consumer perspective are: ubiquity (the ability to buy anytime, anywhere), lower product prices, and service, convenience (buying from home), the possibility of 24-hour shopping, greater information availability (easier to find all the necessary products or services with comprehensive information about their features), increased variety of available products, improved comparison of products and sales conditions, full customization ability, for digital products instant delivery since the digital products can be downloaded immediately after payment, virtual socialization possibility in online communities along with the exchange of useful information about the quality of

products and services.

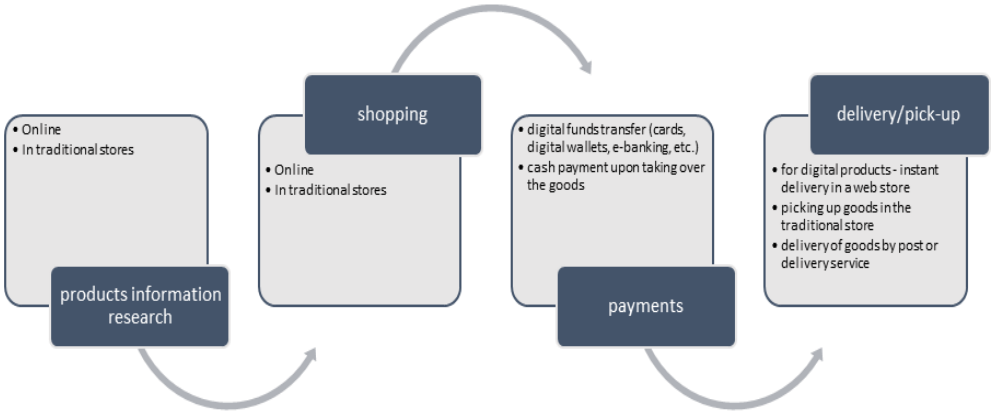


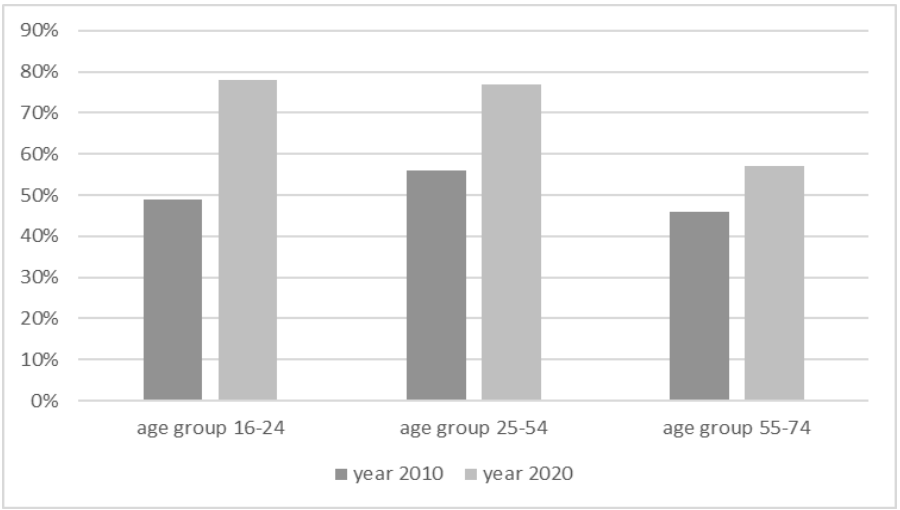
Fig. 1: Purchasing cycle in modern retail.

Source: own representation

Some studies empirically test and explain consumers' perceptions of the e-commerce benefits regardless of the type of product being purchased. Dholakia and Uusitalo (2002) demonstrate that e-commerce and traditional commerce are different in terms of perceived benefits from shopping. Bonera (2011) found that the aforementioned utilitarian motives for using e-commerce must be supplemented by perceptions of the usefulness and emotional commitment to the online shopping platforms, and points out that perceived security of online shopping also plays an important role in online shopping decisions. Security and privacy are two factors related to customer trust and they are directly related to consumer perception of the network threats and network fraud, so Chellappa and Pavlou (2002) and Suh and Han (2014) show a significant link between information security perception and trust in e-commerce transactions, while Kim et al. (2008) argue that it is the confidence of online consumers in a new sales channel that has a strong influence on online shopping decisions. Zhang et al. (2017) explain how recommendations and reviews on online platforms affect consumer behavior in e-commerce. Strugar et al. (2011) explain the Croatian students' perception of the advantages of e-commerce compared to traditional stores and show that students out of ten offered benefits of using e-commerce, find the most important one to be "availability of goods and services not offered in a particular market", followed by “easier comparability of prices and product characteristics”, while “the possibility of buying abroad without travel costs” is the third most important advantage of e-commerce.

Due to the benefits that e-commerce brings to consumers, the growing consumers IT literacy, and the economic empowerment of millennials as a "generation of the information society" (see Fig. 2). In 2010, the age group 55-74 accounted for 45%

of online shoppers, while in 2020 that share was 57%; for the age group 25-54, the share increased from 56% to 78%, while in the age group 16-24 this share increased from 49% in 2008 to 78% in 2020 (Eurostat, 2021). Likewise, the share of companies involved in e-commerce activities grew from 13% in 2008 to 20% in 2017 (see Eurostat, 2020).



Source: own presentation according to Eurostat data (2021)

Fig. 2: Proportion of Internet users who have purchased online in the European Union in the past year

If we observe sales growth from 2010 to 2015, clothing and consumer electronics have become the most important branches in the B2C model of e-commerce (Mangiaracina et al., 2015). Clothing and footwear are, according to a large number of research and studies, always among the three most popular product categories in e-commerce. AC Nielsen's Global E-Commerce Report (2014) shows that in 2014, the share of consumers who bought and intended to buy clothing, footwear, and fashion accessories online was 46%, and this was the second online consumer category after the airline tickets and tourism reservations (48%). In addition, this indicator was 34% for consumer electronics and 27% for groceries.

In almost all European countries, the category of clothing and footwear is the most important in e-retail when it comes to products only (DirektLink, 2020). In Table 1 the percentage of online shoppers who purchased online in the last year is shown according to product categories in UK, France, Spain, Italy, and the Netherlands. It can be observed that clothing and footwear remained the top product category bought online by more than 50% of online shoppers. But there is a respectively high proportion of online shoppers purchasing home electronics (proportion is higher than 40% in all observed countries). While in the food (groceries) category more than one-quarter of online shoppers bought some product

during the last year.

Table 1: Percentage of e-commerce shoppers who did online purchase last year in selected European countries.

Product category	United Kingdom	France	Spain	Italy	Netherlands
home electronics	43%	36%	59%	51%	47%
clothing and footwear	68%	54%	63%	57%	65%
food (groceries)	45%	27%	36%	24%	23%

Source: Direct Link (2020)

The official statistics of the European Union (Eurostat, 2021) show similar data, stating that in three months the largest number of online purchases in the area of goods (without services!) was in the category of clothing, footwear and fashion accessories bought by 64% of respondents, then followed by deliveries of food and beverages from restaurants or caterers (29% of respondents), furniture and home and garden decoration (28%), cosmetics or wellness products (27%), printed books, magazines and newspapers (27%), and computers, tablets, mobile devices and related equipment (26%).

We can provide the following information on the strength and reach of e-commerce in Croatia. According to the Central Bureau of Statistics (2016), 91% of Croatian citizens used the Internet to collect the data on products and services, 91% to read newspapers and magazines, 80% to watch videos such as YouTube, 79% to communicate via e-mail, 73 % for collecting health data, 69% for using social networks, etc. Already in 2016, the share of online consumers in the total population exceeded 30%, and products of the following categories were most often bought on the Internet: clothing and sports equipment (57% of respondents), household goods (34%), event tickets (31%), electronic equipment (29%) and computer components (25% of respondents).

Numerous research studies show that e-commerce is changing the way consumers search for information and the way they buy products and services. However, the largest number of such research studies refer to the general range and explains the general appearance of e-commerce without considering the specifics of the assortment offered. (Suh and Han, 2011; Bonera, 2011; Mann and Liu-Thompksins, 2019; Knezevic and Delic, 2017; Ngwe et al., 2019; Yu and Kim, 2019; Connell et al., 2019; Delic et al., 2017; Svobodova and Rajchlova, 2020). Even if there are studies on a specialized assortment of e-commerce, they refer to only one type of product or only one product group and they explain the behavior of consumers towards one specialization in e-commerce. For instance, Hao et al. (2020), Faraoni et al. (2019), Seitz et al. (2017) explore e-commerce in the segment of groceries; Supryn and Sobczyk (2016), Escobar-Rodriguez and Bonson-Fernandez (2017), Knezevic et al. (2018) elaborate e-commerce in clothing and footwear. While e-commerce of consumer electronics is the topic of interest in

studies by Dayal and Palsapure (2020), Szopinski et al. (2020), Duch et al. (2017).

Comparative studies that examine the behavior of individual consumers in the situation of buying products among different product groups are extremely rare. To fill this gap, in our primary research we will focus on examining the individual consumers' behavior by asking them questions related to four types of shopping behavior for three different product groups in e-commerce. The three groups of products we will focus on are (1) clothing and footwear, (2) consumer electronics, and (3) groceries.

3. Research methodology and sample

According to research studies in the field of marketing and retail (for instance: Beatty and Smith, 1987; Heitz-Spahn, 2013; Cleveland et al., 2011; Abbey et al., 2015; Hardgrave et al., 2011; Flamand et al., 2017), consumer attitudes and behavior significantly depends on the product category or the type of product being purchased in numerous aspects. However, as we elaborated in the previous chapter, there is a scarcity of comparative research studies addressing this aspect in e-commerce. Most available studies explain either general e-commerce acceptance, attitudes or behavior, or elaborate only one specific product category.

Therefore, our main research question is:

RQ(1): Is there a difference in attitudes and behavior of individual consumers in e-commerce regarding the product group being purchased?

Research house AC Nielsen conducted the research and published the survey on consumer behavior in e-commerce in the area of consumer goods (regardless of the product group being purchased) in August 2014 (AC Nielsen, 2014). According to this research, four basic patterns of consumer behavior are identified when buying or seeking product information through e-commerce tools. Those are:

(1) enjoying the shopping experience or hedonism (the study for consumers with such a prevailing behavior uses the name shopaholics)

(2) researching or curiosity (researchers is used in the study for consumers with such a behavior)

(3) thrift or search for special prices and savings (the study for consumers with such a behavior uses the name savers)

(4) Suspicion or fear of technology and a new sales channel (the study for consumers with such a behavior uses the name: skeptics)

To prove that consumer behavior in e-commerce strongly depends on the category of products they are buying, a primary survey was conducted on consumer attitudes towards 4 basic patterns of e-commerce behavior in the case of three product groups "clothing and footwear", "consumer electronics" and "groceries".

The primary research was conducted on younger consumers in Croatia in the period from 2018 to 2020. The research sample includes 68% women and 32% men.

Most of the respondents (97% of them) are between the ages of 18 and 40 and use the Internet on a daily basis to research information on products and services and/or to purchase products and services online. A total of 236 valid questionnaires were collected and analyzed. For each form of conduct, 4 to 5 claims were offered for which consumers could express agreement or disagreement with the claim, given the purchasing situation according to the three product groups offered. The analysis shows the relative frequencies (percentages) of those consumers who agreed with the offered claims.

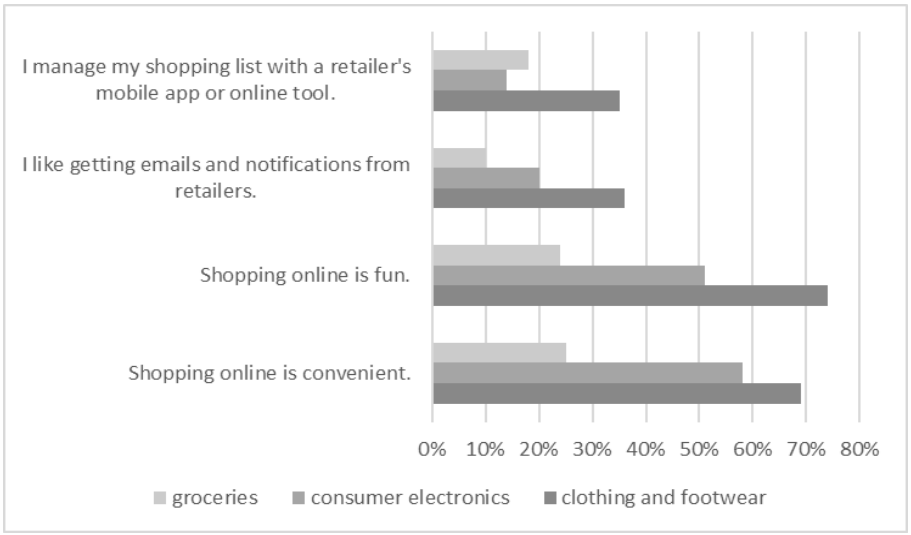
To observe is there a statistically significant difference in consumers' attitude and behavior regarding product categories, we applied ANOVA analysis followed by post hoc t-tests (two samples for means) on pairs of product categories for each behavior pattern. In the next chapter results of the analysis are elaborated for each behavior pattern.

4. Discussion on research results

4.1. Hedonistic or shopaholic consumer behavior

Firstly, consumer behavior was tested concerning their overall shopping experience, i.e., regarding statements regarding enjoyment in the very shopping experience. In the AC Nielsen study (2014), a high level of agreement with this set of statements indicated the existence of online "shopaholics" within the tested sample. In Fig. 3 we can observe that in the product group "clothing and footwear" there is a respectively higher proportion of consumers that agree with given statements comparing to other product categories. Moreover, for the "clothing and footwear" product category, there is a respectively high proportion of consumers who point out that online shopping is fun (74% of consumers agreed) and convenient (69% of consumers agreed). In the "consumer electronics" category there are 51% of consumers claiming that online shopping is fun and 58% claim that online shopping is convenient. In addition, less than 25% of respondents agree on given statements when we observe groceries as a product category.

To examine whether the observed differences in consumer hedonistic behavior between product categories are statistically significant, we performed a one-way ANOVA. In Table 2, we can observe that in the category "clothing and footwear" the mean (see column Average) for hedonistic behavior is the highest, while in category "grocery" the mean is the lowest. Results of ANOVA are given below the data summary. Performed ANOVA analysis shows that on the significant level of 0.1 (as P-value is lower than 0.1) we can accept the hypotheses that there is a difference between means regarding product categories. At least one of the product categories differs from others in the case of hedonic (or shopaholic) behavior in online shopping.



Source: own research

Fig. 3: Relative frequencies of agreement on statements regarding the hedonistic behavior in e-commerce

Table 2: One-way ANOVA results for hedonistic behavior in online shopping

SUMMARY						
Groups	***Count***	***Sum***	***Average***	***Variance***		
Groceries	4	0.766949	0.191737	0.004589		
Consumer Electronics	4	1.444915	0.361229	0.048326		
Clothng and Footwear	4	2.135593	0.533898	0.044707		
ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.234155	2	0.117078	3.597876	0.071086	4.256495
Within Groups	0.292867	9	0.032541			
Total	0.527022	11				

Source: own research

As ANOVA indicated that there is a difference between behavior patterns regarding product categories, we performed a post hoc t-test for two samples for means to examine which pairs of product categories show statistically significant differences. In Table 3 results of the t-test are shown regarding tested pairs of product categories. At the level of significance of 0.05 we can conclude that there is a statistically significant difference between product categories “groceries” and “clothing and footwear” and between “clothing and footwear” and “consumer electronics” while the difference between “groceries” and “consumer electronics” is statistically significant at the level of 0.1.

Table 3: Results of t-test (two samples for means) for hedonistic behavior in online shopping

Pair of variables	Pearson coefficient	t-stat	P-value (one tail)
Groceries – Clothing and Footwear	0.8594	4.4566	0.0105*
Groceries – Consumer Electronics	0.8208	1.9662	0.0720**
Clothing and Footwear – Consumer Electronics	0.9698	6.6017	0.0035*

*Note: * - significant at 0.05; ** - significant at 0.10*

Source: own research

Based on all the above mentioned we can conclude that the shopaholic way of behavior where consumers find shopping as fun, convenient and enjoyable to receive information on products from retailers are the major characteristics of consumer behavior in the product category „Clothing and footwear ". Those are also somewhat present in the product category „Consumer electronics ", but, in comparison to „Clothing and footwear ", it is on a smaller scale or intensity. In the case of „groceries", this way of online shopping behavior is not dominant.

4.2. Online research behavior or curiosity of consumers

Fig. 4 shows the attitudes related to consumer behavior when buying among three different product categories. Consumer electronics stand out here. The largest percentage of consumers agreed (about 85% of them) to read online reviews before buying the product. As many as 80% of consumers pointed out that they often look at products online before buying at the point of sale i.e. they apply the ROBO principle - research online and buy offline. In addition, 80% of consumers pointed out that they take considerable time researching products online before buying.

Source: own research

Fig. 4: Relative frequencies of agreement on statements regarding research behavior

In Table 4 it is shown that in category "consumer electronics" the mean (see column Average) for research behavior in online shopping is the highest, while in category "grocery" the mean is the lowest. Results of ANOVA are given below the data summary. Performed ANOVA analysis shows that on the level of significance of 0.1 we can accept the hypotheses that there is a difference between means regarding product categories (as P-value is lower than 0.1). At least one of the product categories differs from others in the case of research behavior in online shopping.

Table 4: One-way ANOVA results for research behavior in online shopping

SUMMARY						
Groups	***Count***	***Sum***	***Average***	***Variance***		
Groceries	5	1.533898	0.30678	0.006191		
Consumer Electronics	5	3.538136	0.707627	0.020172		
Clothing and Footwear	5	2.957627	0.591525	0.005571		
ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.425397	2	0.212699	19.98167	0.000152	3.885294
Within Groups	0.127736	12	0.010645			
Total	0.553134	14				

Source: own research

According to the results of the t-test (two samples for means) for research behavior in online shopping, it can be concluded that there is a statistically significant difference in this type of behavior between all pairs of product categories at the level of 0.05 (all P-values shown in Table 5 are lower than 0.05).

Table 5: Results of t-test (two samples for means) for hedonistic behavior in online shopping

Pair of variables	**Pearson coefficient**	**t-stat**	**P-value (one tail)**
Groceries – Clothing and Footwear	0.6752	10.6145	0.0002*
Groceries – Consumer Electronics	0.4244	6.9738	0.0011*
Clothing and Footwear – Consumer Electronics	0.6399	-2.3869	0.0377*

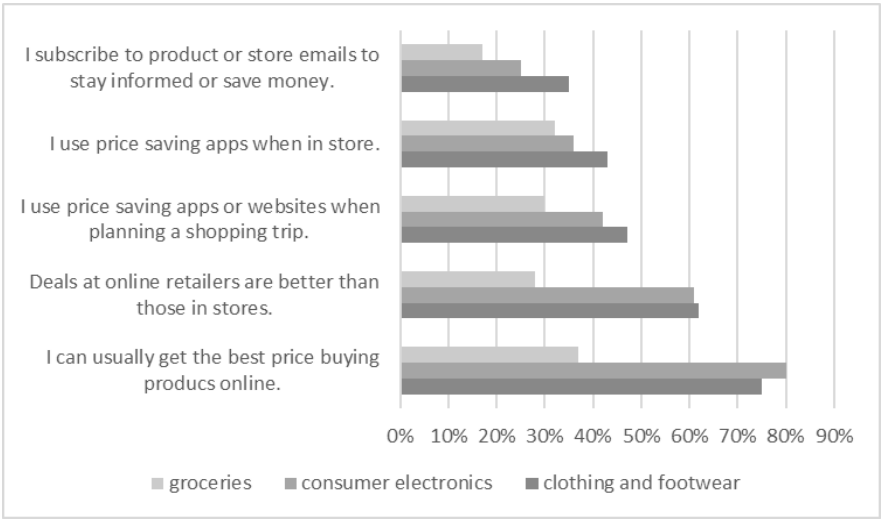
*Note: * - significant at 0.05*

Source: own research

4.3. Saving behavior

The highest percentage of consumers claim that they can usually get the best price buying products online for all tested product categories. Most of the consumers (80%) claim that they can usually get the best price buying online when they are buying consumer electronics (Fig. 5). A high percentage of consumers, 75% of them, claim that when they are buying clothing and footwear, they can usually get the best price buying products online. Over 60% of consumers point out that "deals

at online retailers are better than those in stores" when buying "consumer electronics" and "clothing and footwear".



Source: own research

Fig. 5: Relative frequencies of agreement on statements regarding saving behavior

When observing categories in Table 6, "clothing and footwear" the mean for saving behavior in online shopping is the highest, while in category "grocery" the mean is the lowest (see column Average). Results of ANOVA are given below the data summary. Performed ANOVA analysis showed that on the significance level of 0.1 we can accept the hypotheses that there is a difference between means regarding product categories (as P-value is lower than 0.1). At least one of the product categories differs from others in the case of saving behavior in online shopping.

Table 6: One-way ANOVA results for saving behavior in online shopping

SUMMARY						
Groups	***Count***	***Sum***	***Average***	***Variance***		
Groceries	5	1.449153	0.289831	0.006424		
Consumer Electronics	5	2.436441	0.487288	0.047328		
Clothing and Footwear	5	2.631356	0.526271	0.027097		
ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.160689	2	0.080344	2.981257	0.088897	3.885294
Within Groups	0.323398	12	0.02695			
Total	0.484087	14				

Source: own research

T-test (two samples for means) results given in Table 7 shows that for saving

behavior in online shopping at the level of 0.05 there is a statistically significant difference in behavior when buying groceries comparing to clothing and footwear (P-value is 0.0054 which is less than 0.05), while the difference between groceries and consumer electronics is significant at the level of 0.1. The difference between categories clothing and footwear and consumer electronics is not statistically significant (P-value is higher than 0.1).

Table 7: Results of t-test (two samples for means) for saving behavior in online shopping

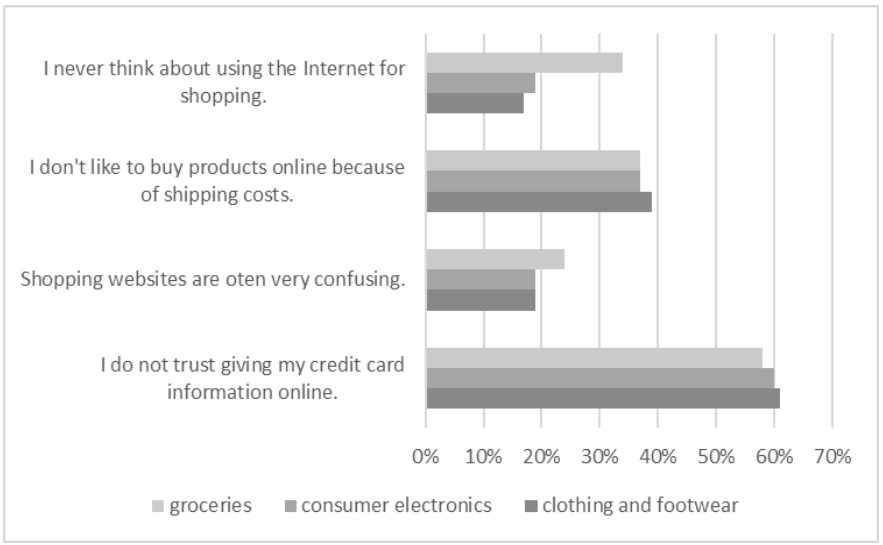
Pair of variables	Pearson coefficient	t-stat	P-value (one tail)
Groceries – Clothing and Footwear	0.7321	4.5036	0.0054*
Groceries – Consumer Electronics	0.7413	2.6239	0.0586**
Clothing and Footwear – Consumer Electronics	0.9997	1.3846	0.1192

*Note: * - significant at 0.05; ** - significant at 0.10*

Source: own research

4.4. Scepticism and fears in online shopping

When analyzing statements regarding skeptic behavior, the main problem that stood out is a level of trust to give credit card information online. For all tested product categories almost 60% of respondents pointed out that they don't trust giving their credit card information online (see Fig. 6).



Source: own research

Fig. 6: Relative frequencies of agreement on statements regarding skeptic behavior

When analyzing skeptic behavior in categories shown in Table 8, "groceries" the mean (see column Average) for skepticism in behavior in online shopping is the

highest, while in category "consumer electronics" the mean is the lowest. However, performed ANOVA analysis (see Table 8) shown that P-value is higher than 0.1 (P-value is 0.922619) and we can conclude that there is no statistically significant difference between product categories when analyzing skepticism in consumer behavior in online shopping.

Table 8: One-way ANOVA results for skeptic behavior in online shopping

Groups	***Count***	***Sum***	***Average***	***Variance***		
Groceries	4	1.538136	0.384534	0.020916		
Consumer Electronics	4	1.351695	0.337924	0.037973		
Clothing and Footwear	4	1.364407	0.341102	0.041254		
ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	0.005425	2	0.002713	0.081264	0.922619	4.256495
Within Groups	0.300426	9	0.033381			
Total	0.305851	11				

Source: own research

In Table 9 the results of the t-test (two samples for means) among pairs of product categories are shown. Given results, support our conclusion based on ANOVA analysis. The differences in skeptical behavior between pairs of product categories are not statistically significant at the level of 0.05 nor the level of 0.1.

Table 9: Results of t-test (two samples for means) for skeptic behavior in online shopping

Pair of variables	**Pearson coefficient**	**t-stat**	**P-value (one tail)**
Groceries – Clothing and Footwear	0.9223	-0.9224	0.2122
Groceries – Consumer Electronics	0.9979	0.2918	0.3944
Clothing and Footwear – Consumer Electronics	0.9441	-1.1852	0.1606

Source: own research

5. Conclusion

In the past ten years, e-commerce has gone through rapid development, and in the EU the notably higher share of consumers that frequently buy online in various product categories has been reached. The data shows that there was an increase in all of the consumer generations. In addition, the ongoing pandemic is further accelerating the growing importance of e-commerce in the daily lives of consumers, and consumers have significantly increased the frequency of online shopping.

The contemporary approach to e-commerce scientific analysis dominantly treats e-commerce as a new sales channel regardless of product categories. Numerous authors in the field research general consumer behavior in e-commerce. On the other hand, literature in retail and marketing suggests that attitudes and behavior of

an individual consumer heavily depend on the product category being purchased. Therefore, in this paper, we focused on one research question: RQ(1): Is there a difference in attitudes and behavior of individual consumers in e-commerce regarding the product group being purchased?

To answer the RQ(1), the primary research is conducted for three product categories (1) groceries, (2) consumer electronics, (3) clothing and footwear. In the survey, consumers' attitudes in four behavior patterns were tested. Following behavior patterns in e-commerce were tested: (1) hedonism, (2) search for information, (3) saving possibilities, (4) skepticism towards e-commerce. The sample included 236 respondents. Differences between categories were tested by the one-way ANOVA method and post hoc t-tests were performed to explain differences in consumer attitudes between product categories.

For tested product categories, the analysis shows that there are statistically significant differences in consumer attitudes and behavior in e-commerce regarding product categories in three out of four mentioned patterns of consumer behavior differences. Compared to other product categories, "clothing and footwear" are a category where hedonistic or shopaholic consumer behavior is emphasized when shopping online. The search behavior pattern is the most important for the "consumer electronics" category. While "groceries" are also differentiated in online savings behavior patterns when compared to "consumer electronics" or "clothing and footwear". Only for skepticism, the differences between product categories are not statistically significant.

In this paper, we proved that a product category significantly shapes consumers' attitudes and behavior in e-commerce. Therefore, future research studies on e-commerce and its potential, importance, advantages, disadvantages, etc., should focus on a specific product category rather than e-commerce in general. One of the research limitations is the sample size, which is 236. Therefore, in future research, the sample should be broadened. Other limitations are that this research focuses on only three particular product categories in the particular market (Croatia). In the future, the range of product categories should be wider, and research should be conducted in more countries. That would enable further analysis of consumer behavior differences in e-commerce.

Identified and described differences in consumer behavior concerning product categories, can serve managers in planning and conducting adjusted marketing and sales activities in e-commerce. Additionally, based on the results of the research, we suggest researchers focus future analysis on a specific category of product or service in e-commerce, rather than on the analysis of e-commerce as an undefined, general retail channel. Such an approach would provide a better understanding of the functioning of e-commerce in individual sales categories and would provide more valuable in-depth insight into e-commerce consumer behavior.

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