WSB Journal of Business and Finance
Year 0000, Vol. 57, No.1
eISSN 2657-4950

The impact of website design on consumer decision making – evidence from North Macedonia

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DOI 10.2478/WSBJBF-2023-0009

Abstract

Today, almost one third of the world population are digital buyers. The hypothesis that more life moves online, the less damage to our environment is still unclear. E-commerce sites and the underlying supply chain can have both positive and negative impacts on the environment**.** Sustainable web design is an approach to designing websites that puts people and the planet first. It is a growing movement as organizations look for opportunities to reduce their influence on the environment. This research elaborates on determinants of consumer behavior that shape online purchase processes and affect the final consumer decision to buy. It discusses the importance of website design on consumer decision-making in e-commerce. Consumer decision-making and behavior during online shopping in the literature are measured by numerous models. One of the primary motivators for any online store to attract customers is the quality of website design. Website quality refers to the overall excellence, effectiveness, and usability of a website. It influences consumers' perceptions of product quality and affects online purchase intentions (Sun, Chen, and Huang, 2014) and even continuation intentions (Chawla et al., 2015). Website quality as well positively affects online impulse buying behaviour (Akram et.al. 2018). The design of a website interface plays an important role in online purchasing, and customers are more likely to visit and buy from better-designed websites (Chiu and Yang, 2016). This paper proposes that website design quality is a multi-dimensional construct. To support the importance of the construct, a review of different studies is conducted elaborating on the impact of website design on consumer attitude and behavioral intention in North Macedonia. This study has theoretical and practical implications on the existing knowledge and provides managerial insights for e-vendors implying that to promote online shopping, they need to improve the quality features of the website and enhance users' trust.

Keywords: Consumer Behaviour, E-commerce, North Macedonia, Website Design

1 Introduction

Today, e-commerce plays a crucial role in the world economy and everyone's lives. It has transformed the global retail industry and is rapidly growing. Parallel to the accelerated growth of e-commerce, its impact on the environment is gaining attention as never before. The hypothesis that the more life moves online, the less damage to our environment is still unclear and widely discussed. E-commerce sites and the underlying supply chain can have both positive and negative impacts on the environment. According to the E-commerce and the EU Green Deal

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analysis (2021) "the dichotomy between online and offline retail commerce has become increasingly blurred, and the environmental footprints of these two business models are becoming intertwined" (Collini et al., 2022). In the literature, different studies have reported both positive and negative environmental impacts of e-commerce and its supply chain. This two-dimensional impact of e-commerce on environmental sustainability is currently largely discussed. Still, there is a lack of consensus in the literature as to whether e-commerce impacts the environment more positively or negatively.

The current state and the predictions reveal that the future of e-commerce and online shopping is more than promising worldwide. But the question that arises is what this e-commerce growth means for the environment from both the buy side and sell side, or is it more environmentally friendly than the traditional brick and mortar retail? The importance of the question of the environmental sustainability of e-commerce rises in parallel with the increased growth in e-commerce share in the global economy and the increase of awareness about environmental pollution and global climate change as significant global challenges in general. Having in mind the increase in the number of digital buyers, it is largely important to understand what impacts their decision to buy online and how aware they are about the environmental impact of the products they are buying. More and more digital consumers highlighted that their environmental concerns impact their purchasing decisions (Global Web Index, 2018 cited in Rao, 2021). According to the research of Rao (2021), as consumers are becoming more aware of what their lifestyle choices are doing to the planet, their attitudes towards the environmental sustainability of the end-to-end e-commerce supply chain will impact the intention to use/continue using online shopping channels. But Tiwari and Singh (2011) state that decision-making for environmentally concerned e-commerce consumers is not that easy, given that e-commerce has both positive and negative environmental impacts (Tiwari and Singh, 2011).

As global carbon emissions continue to rise (EPA, 2022) concerns about the contribution of the IT industry and its impact on climate change have become more urgent. It is estimated that only the internet is responsible for 3.7 % of global greenhouse emissions and it is predicted that the IT industry will increase its responsibility by 14% by 2040 (BBC, 2020). Lately, terms such as "green coding", "green software", and "green IT" have emerged, referring to the practice of incorporating environmental considerations into software development (García-Mireles et al., 2018). It is estimated that digital technologies are responsible for roughly 4% of greenhouse gas emissions and the energy consumption of digital technologies is increasing by 9% a year (SEO blog, 2023). Websites also have a carbon footprint, which is defined as the amount of greenhouse gases (CO2 equivalent) released into the atmosphere due to the energy costs of creating the website, powering the website (electricity), transferring data to and from the website, and powering user devices (Landes, 2020). Websites can produce CO_2 and increase environmental pollution. It is estimated that an average web page tested produces approximately 0.5 grams of CO_2 per page view, meaning, for a website with 10,000 monthly page views approximately 60 kg of CO_2 per year (Website Carbon calculator). This implies that a more complex website will require more energy to load, and hence the greater climate impact it has. For example, from Amazon's overall operations, as the dominant company in the e-commerce world, the total carbon emissions in 2021 were estimated at 71.5 million metric tons of CO_2 which is 18% larger than their overall impact from 2019 (Amazon Sustainability, 2023). Between 2021 and 2022, Amazon lowered its carbon emissions for the first time since it began disclosing these figures for 0.4% (Amazon Sustainability, 2023). Amazon aims to reach net-zero carbon emissions across its operations by 2040 by investing in renewable energy, scaling solutions, and collaborating with partners to broaden their impact (Amazon Sustainability, 2023).

In this sense, having in mind the enormous increase in the number of e-shoppers and parallel the number of websites, it is important to understand what website characteristics are crucial in consumers' decision-making in online shopping to optimize its environmental impact and at the same time meet customer requirements. Based on that knowledge consumers could be stimulated to make green purchase decisions when buying online following the line of sustainability in the design of the website and promoting eco-friendly content. E-retailers will gain insights to improve their e-commerce websites and make them more environmentally friendly. In this way, areas for potential improvement will be identified to increase sustainability and minimize the carbon impact of websites. Relevant design principles and practices will be applied, and relevant features will be incorporated into the e-commerce websites to reduce websites' carbon footprint (for example green hosting, reducing the size of images and videos, regularly managing redundant content, keeping websites technically lean, etc.). Sustainable web design prioritizes people and the planet in the development of digital products and services. It is a huge topic that covers a lot of aspects, from technical details to design and the way the content is organized. It is a growing movement as organizations look for opportunities to reduce their influence on the environment.

Therefore, the goal of this research is to discuss the importance of constructs like website quality and trust as significant determinants of online consumer behavior and attitude, conducting a review and analysis of different studies in the context of Macedonian consumers. The structure of the paper is as follows: after the introduction, in Section 2 a short discussion on e-commerce and online shopping global profile and trends, as well as some facts about the e-commerce in the country are presented. In Section 3 a brief literature review on the discussed topic is

provided. Section 4 discusses available research on the importance of website quality and trust in consumer decision-making in the country. The final remarks and conclusions, originality of the study, limitations of the research as well and research plans are presented in Section 5. Used literature is presented in the reference section at the end of the paper. The study will contribute to the understanding of website design factors and will help marketers and e-retailers adopt suitable strategies for better website design, consumer engagement, and green purchases.

2 E-commerce and online shopping

The first internet-based retail transaction took place almost three decades ago (on August 11, 1994) and the internet has been continuously reshaping the way we shop ever since. Today, e-commerce plays a crucial role in the world economy and everyone's lives. E-commerce has witnessed significant growth in recent years, especially due to the COVID-19 pandemic, and has reshaped the global retail industry on a large scale. Within e-commerce, online shopping is one of the most popular online activities. While many consider synonyms and use them interchangeably, online shopping more specifically is a form of electronic commerce that allows consumers to directly buy products or services from a seller over the internet using a web browser or a mobile app. Online shopping is only one aspect of what we know as e-commerce. It is an e-commerce activity that involves purchasing items on a seller's website via credit or debit card and having the item delivered to consumers' homes (Cunningham, 2019). Online stores usually enable e-shoppers to search items online via web searches and by conducting online research with online shopping, customers purchase items from anywhere in the world via a digital platform. Access to a global marketplace and its convenience, are among the best benefits of online shopping both for buyers and/or sellers.

Online shopping has grown significantly in the last few years, and from the numbers, it can be expected this market to grow even bigger. It is estimated that currently over 26.5 million e-commerce websites are operating worldwide and more and more are being created every day. Between 2019 and 2023, the number of e-commerce websites worldwide has increased from 9.2 million to 26.5 million. The United States is the leading country having the most e-commerce websites almost14 million websites (13.98 million), followed by United Kingdom (1.24 million), Brazil (0.73 million), Germany (0.72 million), Australia (0.65 million), France (0.57 million), Russia (0.55 million), Italy (0.49 million), Canada (0.47 million) and India (0.43 million) (Kiniulis, 2023). With the rise of the number of e-commerce websites, the number of online shoppers worldwide has risen as well. As it stands in 2023, the number of digital buyers is 2.64 billion—this one one-third (33.3%) of the total world population. One in three people is an online shopper. This is not surprising, as internet connectivity penetrates the world and online shopping becomes increasingly convenient. From a marketing perspective, online shopping events offering huge discounts such as Black Friday and Cyber Monday, Singles' Day in China, and Amazon Prime Day have also played their part in stimulating shoppers to buy online. The number of online shoppers is expected to continue rising to 2.71 billion in 2024 and 2.77 billion in 2025. According to available data, in 2021, retail e-commerce sales amounted to approximately 5.2 trillion U.S. dollars worldwide (Statista, 2023). In 2022, global e-commerce sales grew by 6.5 percent compared to the previous year and it accounted for approximately 19% of all retail sales worldwide. It is expected (forecasted) that these figures will grow by 56% over the next years, reaching about 8.1 trillion dollars by 2026. (Statista, 2023). For years, online retailers have been optimizing the mobile experience to increase their online sales. As a result, mobile commerce is growing as well. According to Statista's Market Insights, mobile e-commerce sales reached $2.2 trillion in 2023 and now makeup 60 percent of all e-commerce sales around the world (Buchholz, 2023). As of April 2023, Amazon was the most popular online marketplace worldwide, averaging about 4.8 billion visits that month. The second most visited shopping site was eBay, with roughly 1.2 billion visits (Statista, 2023). Furthermore, by the end of 2023, nearly 21% of retail purchases and by 2026, 24% of retail purchases are expected to take place online. The e-commerce market is expected to grow to a total of over $8.1 trillion. Amazon accounts for 37.8% of e-commerce sales, the highest market share of all e-commerce companies. While some customers might shop online occasionally, most of them, 79%, do so monthly, and 58.4% of internet users buy something online every week. The current categories with more spending are consumer electronics ($988.4 billion) and fashion ($904.5 billion) (Kemp, 2022). Although there are no age barriers to buying online, online shopping is very attractive among young consumers. It is part of their routine, regardless of what they're looking for and how much money they are ready to spend. According to Forbs e-commerce recent statistics, online shoppers spent $9.12 billion only on Black Friday in 2022 and 87.12 million people shopped online at the same event (Forbs, 2023).

2.1. E-commerce and online shopping in North Macedonia

E-commerce is growing in North Macedonia, but is still relatively limited, both in terms of local retail selling and consumers shopping online. According to the UNCTAD report of 2020, measuring the B2C e-commerce index of countries North Macedonia was ranked 52 out of 152 countries. The country was no exception regarding the dynamic growth in e-commerce boosted by the COVID-19 pandemic, witnessing online sales growth, exclusively for grocery shopping (www.unctad.org). According to the official statistics of the NBRNM for 2021, the value of online transactions realized in the country and abroad amounted to 86.6 million euros, which compared to the same period in 2020 is an increase of 74.6%. According to the NBRNM data on the number of virtual sale points (e-commerce websites), as of March 31, 2021, there were 1,552 active virtual sale points in the country, and in June 2022 this number increased to 1762. (www.nbrm.gov.mk).

According to the Annual Report of the Association for E-commerce of North Macedonia, for 2022, the Macedonian e-shopper mostly buys clothes online, and the least furniture and food, and he does it once up to two times in 3 months in orders usually up to 50 euros. 67% of Macedonians who shopped online in the last 3 months bought/ordered clothes (including sportswear, shoes, and accessories), and are close to the European average of 68% for these products. Sports equipment was bought by 16% of Macedonians, then other products by 12%. A much smaller percentage of Macedonian online shoppers bought or made orders for other categories compared to the European average. According to the data of the State Statistics Office (2022), 86.4% of the population aged 16-74 use the Internet (this percentage in developed countries is almost 100). From the analysis of the online activities of Macedonian internet users, it is noted that most of them use the internet to chat and less to write, search for information, sell online, or learn and pay online. Significantly below the European average, Macedonians use the Internet to find information about products and services (66%), to send e-mails (56%), internet banking (31%), online learning (15%), and selling products and services, (6%) etc. At the same time, 46% of Macedonian internet users bought/placed an order online in 2021 compared to 40% in 2020. According to the Report of the Association of E-commerce of North Macedonia (2022), compared to the region, the Republic of North Macedonia is two places higher than last year, i.e., it is better than Romania and Bulgaria, in addition to Bosnia and Herzegovina, Montenegro and Albania. The Balkan countries are still at the bottom of the ranking table with European countries, and Serbia is the best ranked, where 53% of internet users made online orders. The analysis of all available data in 2022 shows that despite the progress made compared to other European countries, acceleration is needed in all links of the chain of e-commerce operations in the country.

3 Theoretical background

In recent years, consumers are becoming more and more aware of the impact of the products they buy on the environment and hence it is expected that many buyers are more likely to gravitate towards retailers who are serious about sustainability. One study found that nearly 30% of consumers would stop buying clothing from a company if they discovered it was not committed to sustainability (Nosto blog, 2019). Conscious consumers are the leading cause for the rise of sustainability within the e-commerce industry (Llewellyn, 2023). Hence, it is important to understand why and how consumers make green purchase decisions when shopping online.

Consumer buying behavior is considered a complex phenomenon. It is generally shaped by various factor groups including cultural, social, personal, and psychological. In the literature, consumers' online shopping behavior is being affected by different factors and measured by different models. Theories and models of adoption of new technologies are explanations of the factors influencing the decision-making over the adoption and usage of new technologies and therefore they are relevant to explore the adoption of online shopping behavior. Website design and characteristics have proven to be important in determining the intention of consumers to buy online, as was explained previously. The quality of website design is very important for any online store to attract customers (Ganguly et.al., 2010). Website quality refers to the overall excellence, effectiveness, and usability of a website. Website quality influences consumers' perceptions of product quality and affects online purchase intentions (Sun, Chen, and Huang, 2014) and even continuation intentions (Chawla et al., 2015). The website quality as well positively affects online impulse buying behavior (Akram et.al., 2018). The importance of website design is high since it affects customers directly during the purchasing process. It is confirmed that website characteristics determine the customer's perception of the online store (Yoo et.al. 2023) and can impact the final decision to buy. Website design can be observed through its three dimensions: information design, navigation design, and visual design. In the literature, certain website design elements directly influence customer satisfaction and e-commerce loyalty (Mitas et al., 2006, Tarafdar, 2016).

In the last couple of years, our research was intended to explain shopping behavior among youth in North Macedonia, focusing on specific circumstances such as the COVID-19 crisis, payment options, and specific products (food, apparel, gadgets…). For that purpose, we conducted several surveys (150-200 respondents) and investigated demographic characteristics and online behavior. Questionnaires were prepared to follow the models.

We used TAM (Technology Acceptance Model) and UTAUT (Unified Theory of Acceptance and Use of Technology) models with their basic constructs (Davis, 1989; Venkatesh et al., 2003). More recent literature reviews on those popular and widely exploited models can be found in Bulsara and Vaghela (2020) and Haryanti and Subriadi (2020). The most recent advances in the development of the models imply several new determinants to be considered. Extensions of the initial well-known models are numerous and are very diverse. Extended TAM models are extended from the original by adding trust and enjoyment. Trust as an independent variable is embedded in the system and influences e-commerce transactions and thus (Yoo and Jang, 2019) thus opening research space to uncover the reliability of trust variables in current e-commerce. User experience connected with the quality of the websites and applications is one of the reasons for reusing systems and tools for online shopping. Still, user experience that ultimately determines user interface design is very dependent on the segment chosen (youth, generation Z, gender, cultural habits, socio-economic factors) and the psychological characteristics of the respondents. Extended TAM where trust of payment is added as an independent variable can be found in Bailey et al. (2017). Website quality and brand equity are proven to significantly influence online shopping (Chi, 2018). Perceived enjoyment, privacy, and security have a significant positive influence on behavioral intention in online shopping behavior (Barry and Jan 2018).

Authors (Venkatesh et al., 2012) have extended UTAUT (named UTAUT 2) by exploring the technological internet usage of mobiles. UTAUT extended constructs are mainly in the direction of including trust and enjoyment (Nur and Panggabean, 2021; Nur and Gosal, 2021). In their research, it was explained that there is a significant positive relationship between web quality, effort expectancy, and perceived enjoyment with online purchase intention. Furthermore, the findings confirmed the importance of integrating risk when studying technology adoption factors in the consumer context. Financial risk has a direct negative impact on online purchase intention and an indirect one on online repurchase intention. Perceived risk while shopping online as an extension of a UTAUT model is used in Aref (2023). Internet facilitating conditions are negatively associated with perceived risk. Since the quality of a website can influence making an online presence, it can be valuable to explore the influence of e-shopping service quality (or online shopping service quality) as an additional construct of UTAUT (Rehman et al., 2019). In a recent study by Rehman et al. (2022), they investigated the UTAUT extended model with two added constructs - e-shopping service quality and offline brand trust and their influence on online shopping intention and moderating effect on online shopping drivers (the original UTAUT constructs). The results of their study indicate that e-shopping drivers are indeed influenced by e-shopping service quality and offline brand trust is the key factor that moderates the relation between e-shopping drivers and e-shopping intention.

There are many ways that e-commerce companies are moving towards greater sustainability, such as using biodegradable packaging, reducing packaging size, using recyclable materials when possible, optimizing the transport of packages, green hosting, etc. Website development is essential for creating an online presence, e-commerce, communication, and information sharing, making it crucial in today's digital era since it represents the foundation for building a successful brand in the digital world. In recent years, the web development industry has made websites more sustainable through green hosting and sustainable approaches in both back-end and front-end levels of websites to design lower-impact websites in the e-commerce sector. Hence, website development is another strategy for e-retailers to achieve greater sustainability by creating sustainable, lower-impact websites. To do that, important website characteristics and features should be analyzed from the customer's perspective. In the literature and practice, there is a large discussion on dimensions of website design quality defined as a set of technical and non-technical characteristics of a web system, that allow the user to achieve their goals in a website in an accessible, efficient, and pleasant way (Semerádová, 2020). A quality website is effective, user-friendly, and functional, as well as offering accurate and useful content. The most cited dimensions directly related to the widely accepted understanding of website quality are navigability concepts or user guidance; system accessibility and reliability; interactivity and information presentation (Hassan and Abuelrub, 2011, Tezza et.al., 2018, Semerádová, 2020). Usability/navigability, presentation of the information, accessibility, and interactivity of the system are considered technical characteristics, while non-technical features are considered, design, aesthetics, visual/commercial appeal, reliability, hedonism, and empathy. Understanding the multidimensionality of website design quality will support the quality measurement in commercial websites as an important aspect to identify possible improvements to the interface and develop different tools and features for useful diagnostics to improve website designs. In their research, Ashraf et al., (2019) discuss the role of website design artifacts on consumer attitudes and behavioral intentions in online shopping. Their results confirm that website design artifacts (visual design, interactive design, content design, and navigation design) are significant for making consumers' attitudes positive toward e-commerce websites and also to improve their intentions to purchase from online stores.

4 Evidence from North Macedonia

In this section, a review of different studies analyzing the online consumer behavior currently available in the country is presented (Table 1). This will be helpful for researchers and e-retailers who want to see the effect of different determinants on consumer attitudes, behavioral intentions, and behavior of Macedonian consumers in a different context. Although in the analyzed studies it is confirmed that consumer behavior is determined by different factors, authors emphasize the importance of website quality and trust. In e-commerce websites are a means of communication between the consumer and retailer and a marketplace where they can share products, services, and related information. The design of the websites should be user-friendly, attractive, and interactive for the establishment of better relationships between consumers and retailers (Ashraf et.al., 2019). But despite the importance and the progress in e-commerce, different statistics also show that a huge number of users abandoned a shopping cart, among other reasons, because of the poor and complicated interface design and lousy navigation. This implies that there is a potential to improve website design practices to stimulate and manage online retail channels.

Table 1: Determinants of online consumer attitude and behavior in North Macedonia

Study reference	Determinants	Performance measure
Trenevska Blagoeva and Mijoska (2017a)	perceived usefulness, perceived ease of use, attitude, behavioral intention, customer service, website usability, trust	online shopping
Trenevska Blagoeva and Mijoska (2017b)	performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit	mobile internet usage
Trenevska Blagoeva and Mijoska (2018)	performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit	online shopping
Trenevska Blagoeva et al. (2021)	perceived usefulness, perceived ease of use, attitude, behavioral intention, customer service, website trust	online food ordering.
Mijoska et al. (2022)	performance expectancy, effort expectancy, social influence, facilitating conditions, perceived enjoyment, behavioral intention	online learning
Trenevska Blagoeva et al.(2022)	perceived usefulness, perceived ease of use, attitude, behavioral intention, satisfaction	online learning
Mijoska et.al. (2023) (ongoing research)	perceived ease of use and convenience, perceived added value and usefulness, impulse buying tendency, website quality, behavioral intention	online impulse buying

In Trenevska Blagoeva and Mijoska (2017a) TAM extended model is used with relevant constructs that are essential for online shopping adoption among youth– trust, website usability, and customer service. In our research model, we have hypothesized the influence of website usability and customer service on the perceived usefulness defined and measured through a total of 7 statements proven to be relevant (high Cronbach's alpha) to represent the idea. Both hypotheses that website usability and customer service influence perceived usefulness were not rejected, as well as the hypothesis that trust influences attitudes toward online shipping.

In Trenevska Blagoeva and Mijoska (2017b), the authors used the basic UTAUT 2 model to investigate the adoption of mobile internet usage in the country. In the context of the research to add relevant new constructs, attention is paid to habit, hedonic motivation, and price value as predictors of mobile internet usage. In the context of promoting sustainability, the growth of mobile technology and smartphones allows users to control when, where, and how they engage in chosen activities that serve their needs, saving time, completing a task (utilitarian), entertain them (hedonic), or connect with others who share certain believes and values (social). Findings indicate

that mobile users' engagement motivations including hedonic motivation do influence perceived value, satisfaction, and mobile engagement intention.

In Trenevska Blagoeva and Mijoska (2018) UTAUT 2 was selected as a model to explain online shopping behaviour in North Macedonia. Experience and habit (HA) are related predictors that influence user adoption of technology. Passage of time can result in the formation of differing levels of habit depending on the extent of interaction and familiarity that is developed with a target technology. In this context, habit is a perceptual construct that reflects the results of prior experiences. In their research, Wang, Harris, and Patterson (2013) concluded that as learning occurs and experience accumulates, customers continued use of a certain technology is initially largely rational-driven (self-efficacy), then largely emotional-driven (satisfaction), and, finally, habitual (habit). Over time, habit completely mediates the impact of intentions on future usage. Those added constructs to the initial model in our research were significant predictors of the behavior and intention to shop online. Therefore, following the line of sustainability in the design of the website and promoting eco-friendly content is instrumental in the actual usage and intention.

The COVID-19 pandemic changed consumer behavior towards online shopping. In this respect, Trenevska Blagoeva et al. (2021) extended TAM approach was used to explore the determinants of online food ordering. To get insights regarding the young consumer behavior towards online food purchasing in the country, a survey was conducted among more than 150 young people during April and May 2021. This study examines the crucial factors encouraging young consumers to use online food delivery channels based on the following constructs: perceived ease of use, perceived usefulness, attitude towards using, actual use, and website trust. Website trust is an important factor that significantly contributes to the perception of online food purchases. If the customers find the websites to be safe, with correct information, clearly stated conditions for purchase, and guaranteed privacy, they will be encouraged to think that online food purchase is a good idea, and they will begin to like to concept and use this type of purchase in the future. Website trust is measured by the acceptance of several characteristics typical for sites for food ordering such as simplicity and convenience, expense effectiveness, availability 24/7, easy way of payment, delivery (fast, free, correct address), diverse menu, safe for consumption, and easy way to order. For further research food origin, organic production, low energy consumption, and other factors can be included in the model.

Both extended models (TAM and UTAUT) were empirically tested to explain the behavior of students while learning online due to the pandemics (Mijoska et. al., 2022; Trenevska Blagoeva et. al., 2022). Perceived enjoyment positively influences behavioral intention. The entertaining perception of online learning contributes to the intention to further use online learning in future educational activities and satisfaction.

The authors' current research aims to fill this gap and explore the influencing factors on young consumers' impulsive behavior while online in North Macedonia. Website quality and impulse buying tendency are the main significant predictors of impulse buying while online. This research supports the presumption that website quality is an important predictor of the consumer's impulsive intentions. Generation Z customers have different motivations to create a flow state that leads to impulse buying behavior. The type of products offered online was found important predictor of online IBB in some studies. Still, this result should be analyzed in further research more thoroughly by describing the features of the websites in more detail and incorporating economic factors in the general model.

The research studies comprised with this analysis, build up on the knowledge of generic technology acceptance models (like TAM, UTAUT, UTAUT2, etc.) and test the significance not only of the basic constructs proposed by the generic models but additional constructs, as well. In this research, the respondents were mainly the young population (Gen Z, or younger than 40 years old) due to their limitless use of new technologies in their lives. These insights and theoretical considerations led to the author's suggestion that website design and trust are critical determinants of online consumer behavior. Based on this knowledge, the importance of website design and trust in the context of green purchasing behavior in online shopping of Macedonian consumers can be tested, as potential stimuli mechanisms of environmentally friendly consumer decision-making in online shopping. Also, a more detailed analysis of specific web design characteristics like navigation, visual design, interactive design, and content design is suggested since it could provide detailed insights for future e-retailer actions and website development.

5 Conclusion

The environmental impact of human-computer interaction includes electronic waste, resource depletion, increased energy consumption, and carbon footprint. The growth rates in e-commerce in general impose that solutions are needed on both the buy side and the sell side. This requires understanding consumer decision-making processes and online behavior as well as a more sustainable approach to website design especially for virtual stores. Website development is another strategy for e-retailers to achieve greater sustainability by creating sustainable, lower-impact websites. In North Macedonia, there is a steady positive trend of e-commerce growth. Still, there is

room for further development of e-commerce in the country. However, offering a sophisticated online shopping experience as in developed markets requires a holistic approach and investments in technology, processes, people, and resources. Our past and current empirical research of the determinants that influence technology use indicate that various aspects of website design and user experience such as joy, habit, and trust are significant predictors of online shopping intention. Sustainable e-commerce, environmentally conscious consumers, and low-impact websites are promising solutions for ensuring that the growth of online shopping will have a positive impact on the environment and hence benefit all.

The originality of this study is reflected in the elaboration of the importance of constructs like website design and trust in consumer behavior in online shopping. In future research, the importance of website design and trust in the context of green purchasing behavior in online shopping of Macedonian consumers will be examined, as potential stimuli mechanisms of environmentally friendly consumer decision-making in online shopping. Website quality is a multi-dimensional construct. Therefore, in future research, a more detailed analysis of specific web design characteristics will be performed to get detailed insights for better website development. The essence and nature of consumers' behavior is a dynamic and complex phenomenon, and therefore further research can be also focused on longitudinal studies to compare changes in consumers' behavior and explain different predictors. This research contributes to broadening existing knowledge and understanding of the importance of specific constructs in consumer behavior in online retailing across electronic channels from a consumer perspective as potential aspects for stimulating environmentally friendly online behavior.

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