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# HOW GENDER AND AGE CAN AFFECT CONSUMER PURCHASE BEHAVIOR? EVIDENCE FROM A MICROECONOMIC PERSPECTIVE FROM HUNGARY

¿CÓMO EL GÉNERO Y LA EDAD PUEDEN AFECTAR EL COMPORTAMIENTO DE COMPRA DEL CONSUMIDOR? EVIDENCIA DESDE UNA PERSPECTIVA MICROECONÓMICA DE HUNGRÍA

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## ABSTRACT

The present study aimed to investigate the effect of demographic variables of gender and age on online consumer purchase behavior (CPB) on Facebook in Hungary. The statistical population of the present study consists of Facebook users in Hungary, including Hungarian natives, foreigners residing in this country including students. A sample of 433 online consumers in different age groups was surveyed. The questionnaire was shared via an online link on the Facebook platform and also on various channels. Welch's t-test was used to examine the gender variable, and Welch and Brown-Forsythe test was used to examine the age variable. The results showed that there was a significant difference between CPB in all age groups and the age group of over 50 years on Facebook. This important result emphasized the importance and impact of social networks as marketing channels on young people. Another important point was the difference between the purchase behaviors of male and female consumers. The results from this research can have implications for businesses in developing their competitive advantages and adopting proper approaches in advertising and marketing campaigns based on the socio-demographic characteristics of people.

## KEYWORDS

Consumer purchase behavior, Gender, Age, Facebook, Social networks marketing

## RESUMEN

El presente estudio tuvo como objetivo investigar el efecto de las variables demográficas de género y edad en el comportamiento de compra del consumidor *on-line* (CPB, por sus siglas en inglés) en Facebook en Hungría. La población estadística del presente estudio consiste en usuarios de Facebook en Hungría, incluidos los nativos húngaros y los extranjeros que residen en este país, incluidos los estudiantes.

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**Maria Fekete-Farkas · Abbas Gholampour · Parisa Bouzari · Hadi Jarghooiyan · Pejman Ebrahimi**  
How gender and age can affect consumer purchase behavior? Evidence from A microeconomic perspective from Hungary

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Se encuestó a una muestra de 433 consumidores en línea en diferentes grupos de edad. El cuestionario se compartió a través de un enlace en línea en la plataforma de Facebook y también en varios canales. Se utilizó la prueba t de Welch para examinar la variable de género, y la prueba de Welch y Brown-Forsythe, para examinar la variable de edad. Los resultados mostraron que hubo una diferencia significativa entre el CPB en todos los grupos de edad y el grupo de más de 50 años en Facebook. Este importante resultado enfatizó la importancia y el impacto de las redes sociales como canales de comercialización en los jóvenes. Otro punto importante fue la diferencia entre los comportamientos de compra de los consumidores masculinos y femeninos. Los resultados de esta investigación pueden tener implicaciones para que las empresas desarrollen sus ventajas competitivas y adopten enfoques adecuados en las campañas de publicidad y *marketing* en función de las características sociodemográficas de las personas.

## PALABRAS CLAVE

Comportamiento de compra del consumidor, Género, Edad, Facebook, *Marketing* en redes sociales

## 1. INTRODUCTION

Many studies show that in today's competitive world, the success of companies in maintaining, retaining and communicating with customers, and e-business can meet the explicit and implicit needs of the customers (Naeem, 2019a; Roshandel Arbatani et al., 2019). Due to increasing pricing levels and material costs over the years, enterprises have intended to lower their financial costs via Internet marketing, through which renting cost, facility setup cost, and manpower cost can be saved, and advertising cost is lowered for increasing more potential customers (Jensen & Sund, 2020; Nemati & Khajeheian, 2018). In terms of logistics, electronic commerce shortens the delivery, decreases the procurement cost, decreases unconfirmed orders, increases the control ability for the supply chain, digitalizes the operations of transaction, transportation, storehouse, and payments to analyze customers' procurement data showing the precise prediction about the required amount of supply, etc. Hence, Internet marketing has become a market territory for which each enterprise competes (Liu et al., 2013). E-commerce can be useful for a variety of reasons. For example, it provides easy access to products that may not be accessible without the Internet. Furthermore, e-commerce is an easy way to do transactions. Although it is sometimes more vulnerable than its traditional form, it can largely meet the needs consumers (Ma et al., 2015). The increasing acceptance of social media along with rapid changes in CPB is due to the fact that there are 2.789 billion social media users around the world with penetration of approximately 37% (Kemp, 2017; Shah et al., 2019).

Understanding customer purchasing behavior is among the priorities of marketers as well as researchers; Moon (2004) states that one of the fundamental issues in purchasing behavior is the way customers develop, adopt, and use decision-making strategies (Shah et al., 2019). We will gain knowledge and understand the customer behavior by investigating the factors that affect consumer behavior and looking into the impact of each of these factors on customers' behavior. Accordingly, marketers will be able to offer a product that is more consistent with the needs and preferences of consumers (Kotler & Keller, 2012). In general, various parameters influence customers' tendency to purchase a product or commodity. Online CPB,

like the traditional purchase behavior model, depends on a series of cultural, social, personal, psychological factors, etc., among which age and gender have been considered in various studies (Estiri et al., 2018; Naeem, 2019b; Nejati et al., 2011) .

Munar (2012) claims that one of the main motivations for using the Internet is online social media. Social media do not only include popular sites such as Facebook, YouTube and Twitter, but also wikis, blogs, forums and podcasts (Escobar-Rodríguez et al., 2017). Social networks have a variety of functions in social life, such as forming different social, political, cultural groups, etc., to achieve the goals of its members (Khobzi et al., 2019). According to Comscore Incorporation (2011), Facebook can be considered the most widely used social network, with 1.4 billion active users as of December 2014 (Escobar-Rodríguez et al., 2017). Also, Facebook has had one of the strongest interactive platforms for brands, with more than 90 million businesses over the last three months of 2018. This platform includes data from a large number of online businesses (Dhaoui & Webster, 2021). Facebook is a medium that is facilitating global interaction and sharing ideas and experiences for its users (Sabbar & Matheson, 2019; Zarea et al., 2020). According to Brown (2009), Facebook is a social media platform that is, in fact, a “Web based site which brings different people together in a virtual platform and ensures a deeper social interaction, stronger community and implementation of cooperation projects”. (Kahraman, 2010) defines Facebook as “the online platform that people use to share their ideas, experience, and perspectives and communicate with each other”. Millions of people are using Facebook daily. The vast use of Facebook around the globe has turned it into a new and important advertising platform, where businesses place their ads to reach their prospective customers. This is probably because Facebook allows businesses to target specific customer and promoting their product or services through effective advertisements. As Vahl (2011) argues, Facebook is facilitating the manufacturers and service providers’ access to customers of specific age group and interest. Growing Facebook-based advertising is perhaps an indication that it is becoming an important source of business presentation, and the firms are taking Facebook advertisement as a useful strategy to attract customers. Just in a few years, it has become a part of the promotional mix of the firms to create awareness in target areas and influence customers’ mind. So in the current business environment, Facebook advertisements is playing a significant role to convey a business message to the target audience (Rehman et al., 2014). If social networks have multiple and active users, they will be a good platform for marketing and advertising various products and communication with customers (Dal Zotto & Omidi, 2020; Moro & Rita, 2018; Omar Bali et al., 2020; Sadat Mirzadeh et al., 2017). Thus, Facebook, in general, should be considered as a major platform for communication and building relationships with consumers, since it has the largest number of social network users and allows direct communication with consumers (Lee et al., 2021).

Generally speaking, the Internet offers enterprises a growing market with limitless opportunities that they can tap into by providing consumers with online shopping services. While enterprises can efficiently and economically conduct their

marketing activities through the Internet, a challenge in this massive and growing market is identifying potential consumers through appropriate marketing planning and market segmentation (Liu et al., 2013). It is important to note that knowing the impact of demographic factors such as age and gender on consumer shopping behavior allows the online retailer to create stronger and more memorable ads. Also, given the fact that in Facebook, users can be selected in a completely targeted way, through examining consumer purchasing behavior and other factors affecting it, online sellers can offer their ads to the target community effectively, and increase the number of their actual customers and lower their advertising costs.

To assess the purchase behavior of consumers and investigate the effect of age and gender of consumer among Hungarian Facebook users, the study selected a sample of 433 online consumers in different age groups to conduct the research. The study is expected to offer new information in this particular knowledge area. In the second part of study, the focus is on a literature review related to the topic. The third section provides information related to the methodology of the study. In the fourth section, the results of the statistical analysis of the study are presented. The conclusion part is focused on important notes, implications, some limitations, and suggestions for future researches.

## 2. LITERATURE REVIEW

The issue of CPB is crucial in the marketing literature. Consumer behavior includes all aspects of purchase and the use and disposal of products and services. According to Kotler & Keller (2012) “CPB is the study of how individuals or groups buy, use and dispose of goods, services, ideas and experiences to satisfy their needs and wants”. When it comes to consumers’ buying decision behavior, it is important to understand the different types of consumers with different buying decision behaviors based on the level of involvement and the ability to perceive significant differences among the brands. Hawkins & Mothersbaugh (2010) define the term buying involvement as the degree of interest a consumer possesses when it comes to buying a product or service. Kotler & Armstrong (2018) describe Assael’s consumers’ buying decision behavior types’ model as following:

1. Complex buying behavior - refers to consumers’ high purchase involvement and their ability to perceive significant differences among brands.
2. Dissonance-reducing buying behavior - refers to consumers’ high purchase involvement and their inability to perceive significant differences among brands.
3. Habitual buying behavior - refers to consumers’ low purchase involvement and their inability to perceive significant differences among brands.
4. Variety-seeking buying behavior - refers to consumers’ low purchase involvement and the ability to perceive significant differences among brands (Palalic et al., 2020).

CPB has been influenced by the emergence of information and communication technology (ICT) and the spread of social media (Fauser et al., 2011; Frutos et al., 2014; Kotler & Keller, 2012; X. Wang et al., 2019). Early models of consumer response to marketing efforts for purchasing activity focused merely on attracting customer attention, but interaction with business and social networks is nowadays a key component to grow and succeed in global markets (Gonda et al., 2020; Hossain, 2019).

Dahlqvist and Wiklund (2012) states that personal behavior theories such as personality traits, theory of reasoned action, theory of planned behavior and personality traits are focused on analyzing, motivating, guide and change the attitude of consumers using social networking platforms. These theories are helpful to learn how companies can engage existing customers as well as attract new customers by analyzing their personality traits and behavioral aspects. Ngai et al. (2015) and Kim and Ko (2012) claim that social theories are more useful to identify important social factors that can enhance collective actions and positive social image for services providing organizations. Based on social factors, managers can develop marketing strategies to enhance relationship building, social networks, social image, social trust and social influence. Social behavior theories are more important in the context of social media marketing. For example, social capital theory highlights how social relations or social connections with consumers can enhance the effectiveness of customer relationship management. Para-social interaction theory highlights the importance of opinion leaders and celebrities that are involved in social media marketing. These celebrities can share positive word of mouth, endorsement and positive information on the offered services, and their followers can show trust and a greater level of intention to purchase (Sabbar & Hyun, 2016). This study is performed based on social interaction and social influence theory. Social interaction theory is focused on constructing affection and interaction among social groups. By using this theory, organizations can increase the interaction with internet users or consumers and can engage consumers to generate reviews to improve service quality. Social interaction theory indicates the importance of various affections such as positive sentiment, attraction and liking. Social influence theory develops the concept of how people opinions, thoughts, emotions and intention to purchase can be affected by family, friends, celebrities, opinion leaders or any other credible sources. Social influence can be analyzed in form of peer pressure, conformity, obedience, persuasion, socialization, leadership, marketing and sales. It is also found that people prefer to gather information in the context of product reviews and experiences about any brand before purchase. If people express positive feelings, emotional attachment, observations, and thoughts, other social media users can also be influenced and may intend to purchase that particular service. Both theories describe the importance of adopting social networking technologies to gather information regarding customers' need, expectations, demands, and experiences to enhance service quality and purchase intention (Naeem, 2019b).

Electronic commerce (or e-commerce) carries out traditional commercial activities through the new medium of the Internet. E-commerce can be defined as any commercial transaction conducted in an electronic format. Kalakota and Whinston (1997) suggested that e-commerce is the use of the Internet for purchasing, selling or trading products and services. The aim is to reduce costs, shorten product lifecycles, speed up customer feedback and improve the quality of service. E-commerce is the process of online transactions between individuals and enterprises. These include Business-to-Business (B2B) transactions, Business-to-Consumer (B2C) retail sales (or e-retail) and Consumer-to-Consumer (C2C) transactions (Liu et al., 2013).

In the wake of the technological revolution that is happening around the globe, social media has flourished in every sphere of communication and as a result of this, there has been innovative ways of communicating among people. The advent of social media has influenced the way companies forge links with their customers and the services offered by social media are not only high tech but also fast, effective and convenient. They are spontaneous and visual and can be broadcasted almost in any part of the world as long as the Internet is existent. As users of these social media, prospective consumers get involved in groups with particular interests and this peculiarity enables effortless marketing strategies (Kahle & Valette-Florence, 2012.).

Unlike the one-way information transmission of traditional media, social media is a two-way communication tool that promotes conversation among users. While traditional media allows for vertical flow of content from powerful conglomerates to isolated consumers, social media has paved the way for information to flow horizontally among consumers. Consumers identify social media as a more trustworthy source of information compared to the traditional marketing communication tools; this allows organizations to integrate social media into their existing marketing mix, not only to communicate with customers, but also to get feedback (Shah et al., 2019).

Interaction with business and social networks can provide the necessary conditions for improving the performance of companies in international markets by providing the required knowledge to network members (Emami et al., 2011; Horst & Hitters, 2020). Expanding customer access to social networks and increasing the time spent on such platforms is an opportunity for organizations to improve their services and products (Ma et al., 2015) and enhance customer relationships to understand their needs better (Demmers et al., 2020). The results of research conducted by Prasad et al. (2017) suggest that the use of social media and electronic advertising expressed by customers had a positive impact on CPB. More attention has been paid to investment and entrepreneurship through social networks (Ebrahimi, Kot & et al., 2020; Tajeddin et al., 2018).

Nowadays, increasing investment of companies in social networks, especially Facebook, has become a reality. For example, (Gamboa & Gonçalves, 2014) examined Zara brand fans on Facebook and found that Facebook enhances relationships that increase loyalty through trust, customer satisfaction, perceived value, and commitment. It is a new opportunity for marketing managers to achieve customer

loyalty. Relevant and specific information is obtained directly from consumers who have purchased and used the product. Thus, online consumer surveys are widely used to search for and find product information (Wang & Sun, 2010). This information is more convincing and reliable than the information generated by the seller (Timoshenko & Hauser, 2019). Previous studies have indicated that online reviews on social networks, including Facebook, greatly influence consumer decision-making processes and behavioral goals (Broeder & van Hout, 2019).

### 2.1. The effect of gender on CPB

Gender differences can affect consumer decision-making approaches and the difficulty of decision-making. Gender differences also affect behaviors and attitudes. There are also differences in the responses of males and females to advertising in marketing (Haji & Stock, 2021). Males and females have different paths in data processing and in evaluating their services. Females are more likely than males to have negative evaluations of services, since females consider more value for negative information (Emami & Naderi, 2018; Pinar et al., 2017).

Moderating the gender effect can be explained according to social role theory and evolutionary psychology. Studies indicate that males show a higher tendency to conscientiousness and being systemic and take more risks than females (Rahman et al., 2018), since these individuals are socially expected to behave in this way (social role theory), and this adaptive behavior in the natural selection process designates special characteristic advantages to individuals (evolutionary psychology). Psychological studies conducted over the last years have identified different gender differences that are potentially related to e-consumer behavior. However, little research has been conducted on the effect of these differences on e-consumer behavior (Molinillo et al., 2021; Oláh et al., 2018).

The results of a study conducted by Sandström et al. (2008) show that males use electronic purchase sites that are highly hierarchical easier than females. In general, the results of studies indicate that considering male and female websites can be more successful in satisfying e-consumers (Kim et al., 2019). The marketing literature has long been interested in evaluating gender differences in the use of the Internet and the use of Facebook and other platform (Ghanbary et al., 2021). For example, Gefen and Straub (1997) found significant differences between male and female perceptions of email use. Similarly, Venkatesh & Morris (2000) found differences between males and females in the use of software in the workplace. Ono & Zavodny (2003) carried out a research study and found a significant relationship between males and females in using the Internet. Some research shows that male users spent more time using Facebook in comparison with female users (Escobar-Rodríguez et al., 2017).

**H1:** *Gender has a significant effect on consumer purchase behavior in an online shopping context*



## 2.2. The effect of age on CPB

Age is a crucial marketing phenomenon since it affects people consumption patterns and is associated with several important social and psychological factors (such as family size, income and self-knowledge)(Punj, 2011). Service providers should consider age and gender as important factors in designing their services (Dabija et al., 2017; Leong et al., 2013; Nathan et al., 2020; Rather & Hollebeek, 2021). In this regard,(Vahl, 2011) states that Facebook facilitates the efforts of manufacturers and service providers to reach customers of specific age groups and interests. Studies indicate that older consumers show a lower tendency to search for new information. The age component modulates the relationship between product satisfaction and loyalty, so that this relationship is stronger for older consumers (Tiruwa et al., 2018).

Jackson et al. (2011) believe that people born in the same generation usually have the same behavioral patterns because of shared experiences that influenced their childhood. For example, Taylor & Keeter (2010) categorized different age groups into five categories ranging from 22 years old to over 74 years old. Using this category, researchers such as (Cabral, 2011) have stated that social media is the main priority for the age group between 22 and 33 years old, and it is almost impossible to separate them from social networks (Darbha & Rao, 2016). Almost 63% of young people like or follow brands on Facebook (Khalaf Ahmad, 2016). A survey to know how the younger generation makes decisions showed that family, friends, and digital media play a major role in their decision-making process (Haji & Stock, 2021).

**H2:** *Age groups have a significant effect on consumer purchase behavior in an online shopping context*

## 3. METHODOLOGY

In the present study, a 10-item CPB questionnaire developed by (Turban et al., 2008) was used (Appendix 1). It was adapted and modified according to the objectives of this study. Also, a pre-test was performed to examine the accuracy of the items in the statistical population of the study. Also, a 7-point Likert scale from 1 = strongly disagree to 7 = strongly agree was used. The verification of the ICC coefficient was done regarding consistency and absolute agreement to confirm the questionnaire's content validity (Ebrahimi et al., 2021; Janavi et al., 2021; Khajeheian & Ebrahimi, 2020).

The statistical population of the present study consists of Facebook users in Hungary, including Hungarian natives, foreigners residing in this country or foreign students. In fact, the statistical population of the present study consists of all users, including online consumers. The research respondents were asked to answer questions if they had at least once online purchase experience via Facebook marketing channels. A sample of 433 online consumers in different age groups was surveyed. The questionnaire was shared via an online link on the Facebook platform and on various channels. Also, a pilot study as a common method was conducted

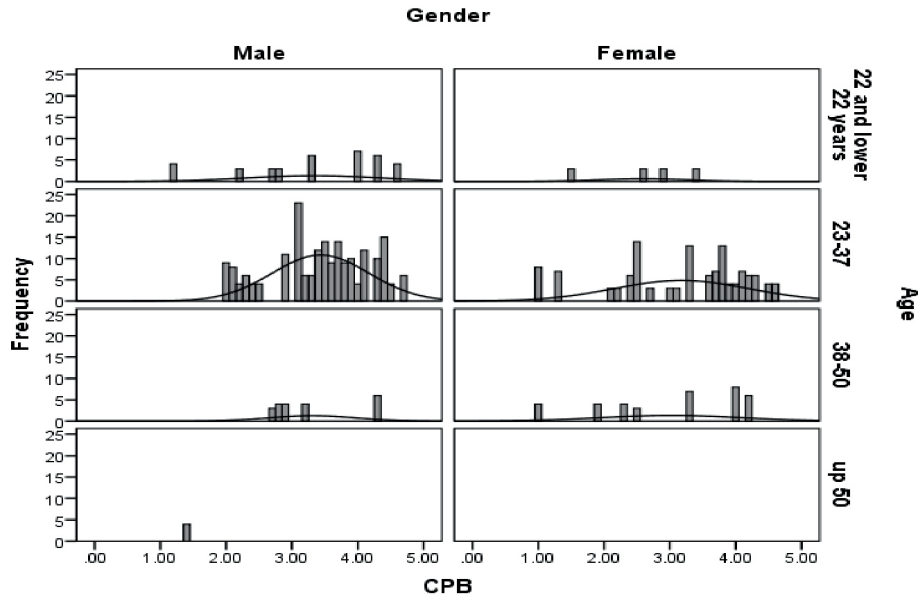
(Ebrahimi et al., 2016) to confirm the content validity of CPB items. Cronbach's alpha coefficient was also used to confirm the reliability of the research questionnaire. The value of this coefficient was greater than 0.7 (Hair et al., 2017; Salamzadeh et al., 2021; Solatianaghizi et al., 2017; Vafaei et al., 2019), indicating the internal consistency of CPB questionnaire items. Also, the AVE index value is greater than 0.5 (Ebrahimi, Hajmohammadi, et al., 2020; Moghadamzadeh et al., 2020; Sanchez, 2013), indicating the convergent validity of the CPB questionnaire items.

#### 4. RESULTS

The present study focuses on the demographic variables of gender and age. In fact, demographic variables can show small differences and details in online consumer behavior. In the present study, 60.3% (261 respondents) of the respondents were male, and 39.7% (172 respondents) of the respondents were female. The highest number of respondents was in the age range of 23 to 37 years (74.8%), indicating that young people have a higher interest in the Facebook platform in Hungary. In addition, 172 respondents (39.7%) had a master's degree, 29.8% of respondents had a bachelor's degree, indicating educated people welcome the Facebook platform more. Moreover, most respondents (33.3%) reported that they spend 1 to 2 hours per day on Facebook, and 88.2% of respondents reported that they spend at least 1 hour per day on sales and search channels for purchasing on Facebook.

It should be noted that the test of homogeneity of variance was examined. According to the results of Levene's test for equality of variance and the value of  $\text{sig} < 0$ , inequality of variance is considered for both variables of gender and age. Welch's t-test was used to investigate the gender variable and Welch and Brown-Forsythe test was used to investigate the age variable. Figure (1) emphasizes the inequality of variance in two groups of gender and age.

Fig 1. Frequency of variables with paying attention to homogeneity



The gender variable was first examined. According to the results of Table (1), the sig value is less than 0.05, and the t-value is greater than 1.96, indicating that the behavior of male and female consumers are significantly different at a significant level of 95%. Therefore, the first hypothesis of the research is confirmed, and it can be stated that gender has a significant effect on CPB in an online shopping context.

Table 1. Results of Welch's t-test for CPB

Gender	N	Mean	SD	Levene's test for equality of variances		Welch's t-test	
				F	Sig	t	df
Male	261	3.378	0.813	17.352	0.000	3.011**	308.402
Female	172	3.099	1.020				

Note : SD, Std. Deviation;  $t > 1.96$  at  $* p < 0.05$ ;  $t > 2.58$  at  $** p < 0.01$ ;  $t > 3.29$  at  $*** p < 0.001$ ; two-tailed test

Regarding the second hypothesis of the study, robust tests of equality of means were used due to the inequality of variances. The results of Welch and Brown-Forsythe test showed that the second hypothesis of the research is confirmed, and it can be stated that age groups have a significant effect on CPB in an online shopping context.

Also, according to Table (2), post hoc tests were used for multiple comparisons between different age groups based on Tamhane post hoc test.

Table 2. Multiple comparisons based on Tamhane post hoc test

Age group (I)	Age group (II)	Mean difference	SD	Sig	CI 95%
22 and below 22	23 to 37	-0.185	0.156	0.806	[-0.611, 0.240]
	38 to 50	0.023	0.194	1.000	[-0.500, 0.546]
	Over 50	1.747	0.148	0.000*	[1.339, 2.156]
23 to 37	22 and below 22	0.185	0.156	0.806	[-0.240, 0.611]
	38 to 50	0.209	0.134	0.552	[-0.155, 0.573]
	Over 50	1.933	0.047	0.000*	[1.806, 2.060]
38 to 50	22 and below 22	-0.023	0.194	1.000	[-0.546, 0.500]
	23 to 37	-0.209	0.134	0.552	[-0.573, 0.155]
	Over 50	1.724	0.126	0.000*	[1.380, 2.068]
Over 50	22 and below 22	-1.747	0.148	0.000*	[-2.156, -1.339]
	23 to 37	-1.933	0.047	0.000*	[-2.060, -1.806]
	38 to 50	-1.724	0.126	0.000*	[-2.068, -1.380]

Note : SD, Std. Deviation; CI, Confidence Intervals; \* Sig <0.05 significant at 95% CI; two-tailed test

The results of Table (2) show that the CPB in the age group of 22 and below 22 years old is significantly different from that in the age group of more than 50 years old on the Facebook platform. The results also showed that the purchase behavior of Hungarian consumers in the age groups of 23 to 37 years old and 38 to 50 years old was significantly different from those in the age group of more than 50 years old. In fact, the CPB in all age groups shows a significant difference between all age groups and the age group of over 50 years old on the Facebook platform.

## 5. CONCLUSION

The present study emphasized the importance of demographic variables of gender and age in the purchase behavior of Hungarian on the Facebook platform. The results revealed that the purchase behavior of young consumers had a significant difference with that of the age group of more than 50 years old. This result is in keeping with Joines et al.,(2003), Korgaonkar and Wolin, (1999), Roy Dholakia and Uusitalo (2002). They also show that young consumers are more likely to shop products online than older consumers. The results are contrary to the results of a study by Sorce et al., (2005), who found that age did not impact consumer purchase

behavior. This result emphasizes the importance and impact of social networks as marketing channels on young people. In fact, young consumers spend much time on social networks and different platforms and show a higher tendency for online shopping. In contrast, the age group over 50 years old is more conservative in online shopping. So the result implies that different marketing strategies and approaches are necessary for the different consumer age segments in E-Commerce (Nemati & Khajeheian, 2018). For example, older people should be induced to get online in the first place by introducing technology and teaching them how to use it. Also, Younger consumers need enticement to repurchase.

Another important point was the difference in the purchase behaviors of male and female consumers. This is consistent with (Lin et al., 2019) empirical study that shows that men and women are different, and therefore, to influence their purchase intentions via their attitudes, men are more affected by the interactivity of a website than women. In contrast, women are more affected by vividness, diagnosticity of the information, and perceived risk (Emami, 2017). This is opposite to the result of a study by (Modahl, 1999), who found that the gender of people did not impact consumer purchase behavior. Since gender influences consumer online shopping behavior, and given that the study found men shop online more often than women, it is suggested that online sellers find the factors that prevent female consumers from translating their shopping and browsing into actual purchasing. For example, if the security of online transactions is the problem, online sellers should offer more secure transaction methods for female consumers. If the website content is the problem and products need to be explained in more detail, online sellers should consider providing more detailed explanations for female consumers. Overall, marketing channels should pay particular attention to this issue and select different approaches and advertisements in their marketing according to the gender of people.

Although the results are mostly statistically significant, there are several limitations to this study.

- One of the limitations of this study was data collection during the Covid-19 outbreak.
- Given that the research was conducted in Hungary, this should be considered as a limitation, and it should be noted that it has restricted the ability to generalize the result for Facebook users in other countries.
- Self-reports are used to measure behavior. According to Feldman & Lynch (1988), Self-reports may create self-generated validity and thus inflated causal linkages.
- Users' responses may not be actual perceptions, but rather the subject's report of their perception.
- Data used in this paper are derived from a questionnaire administered at a single point in time; therefore, the variables are not measured over time.

The question of what are the differences between purchase behaviors of male and female consumers can be examined via qualitative studies in the future. It

is recommended for future studies to use qualitative methods to examine the behavioral differences between males and females in online shopping. Future researchers are also recommended to examine the behavioral differences of consumers in different age groups, especially in qualitative studies and through interviews. Also, it is recommended for future researchers to conduct a similar study in other countries with different demographic variables, including the education and occupation of the participants.

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### ***APPENDIX 1: QUESTIONNAIRE***

Gender: 1- Male 2-Female

Age: 22 years and lower - 23–37 years - 38–50 years - above 50 years -

Education: 1- Diploma and lower 2- Associate 3- Bachelor 4-Master 5- Ph.D.

Time on Facebook (Daily average): 1- below one hour 2. One to two hours 3. Two to three hours 4. More than 3 hours

Time on Facebook (for purchase goal): 1- below one hour 2. One to two hours 3. Two to three hours 4. More than 3 hours

Consumer purchase behavior (Turban et al., 2008)

1. I am familiar with online purchase on Facebook.
2. I am familiar with searching for the products I need in online stores on Facebook.
3. I constantly use the online purchase of Facebook.
4. Using online purchase on Facebook is a daily routine for me.
5. I have used Facebook online purchase many times
6. Online purchase is a good idea for modern life.
7. Based on my experience, online purchase is safe.
8. Online purchase saves me time.
9. In many cases, I prefer online purchase to traditional purchase.
10. Online purchase provides many options for comparing price and quality.