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Degree of The Master of Business Administration

**Effects of Perceived Risks on Customers' Purchase Intentions
in the B2C E-commerce Environment of Azerbaijan**

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STATEMENT OF AUTHENTICITY

I have read ADA's policy on plagiarism and certify that, to the best of my knowledge, the content of this paper, entitled *Effects of Perceived Risks on Customers' Purchase Intentions in B2C E-commerce Environment of Azerbaijan* is all my own work and does not contain any unacknowledged work

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Abstract

This study has aimed to find out the relationship between risks perceived by customers during online purchasing process on perceived benefits that leads to purchase intention. Data were collected from primary sources by conducting a survey among 155 participants. Reliability and validity of research were ensured and regression analysis was applied to find out the causal relationship between the independent variable (general perceived risks and its components) and the dependent variable (perceived benefit of using e-commerce). Findings revealed that perceived general risk has a significant negative impact on the perceived benefit of adopting e-commerce for purchases in Azerbaijan. All the components of perceived general risk except perceived social risk have significant positive impact on general perceived risk.

Keywords: perceived general risk, perceived financial risk, perceived performance risk, perceived physical risk, perceived psychological risk, perceived privacy risk, perceived social risk, perceived time risk, perceived benefits of using e-commerce, online purchase intention, e-commerce adoption.

1. Introduction

Online purchasing has become the norm in today's world. Everything from textile to cosmetic items, electronics, and even groceries has become much easier to purchase thanks to e-commerce. E-commerce is described as the sale of commodities via computer networks through electronic transactions. It enables two independent systems, buyers and sellers, to communicate (EU4Digital, 2021). Electron commerce has experienced growth within the last decades and worldwide e-commerce sales have reached 4.2 trillion USD in 2020 (Coppola, 2022). The tendency keeps growing with the development of information technology, online payment systems, as well as easy accessibility of the world wide web. Especially after the Covid-19 outbreak, business enterprises have been forced to reconsider and redesign their already established business practices again. Those that have established an online presence or quickly and successfully carried their physical stores online, experienced positive trends in their sales. The Covid-19 outbreak undoubtedly derived e-commerce sales in 2020 and beyond. Not surprisingly, monthly visits to global e-commerce websites surged from 16.07 billion in January 2020 to 22 billion in June 2020 (Clement, 2021). This tendency keeps growing each and every year. In 2022, the market size of e-commerce is estimated to be worth 5.545 trillion dollars (Abrams, 2021). In total, e-commerce sales are expected to comprise 24.5% of global retail sales by 2025 (Coppola, 2022).

We experience similar trends in the e-commerce environment of Azerbaijan. Revenue from e-commerce in Azerbaijan is expected to be 2362 million USD in 2022 and grow by 17% yearly till 2025 (Gutierrez-Cruz, 2022). The introduction of local e - payments systems like GoldenPay and online security mechanisms like "Asan Imza" has bolstered e-commerce sales volume. First time in the country, in 2008, Silver Key developed e-payment system. (International Trade Administration U.S. Department of Commerce, 2021). Even though electronic payment and authentication technologies are available, most Azerbaijanis still

choose to pay in cash. Otherwise, e-commerce is generally used for international shopping (International Trade Administration U.S. Department of Commerce, 2021). According to Digital report by Dataportal, only 4.8% of Azerbaijan's population makes online purchases and pays bills online (Kemp, 2021). The Research Report named “E-commerce in Azerbaijan 2021” by Twentify has analyzed the overall e-commerce environment in the country and consumers’ online buying habits and preferences. Findings have revealed that Trendyol.com and Alibaba.com are the top online shopping platforms with a share of 54% and 24% respectively. The top local e-commerce platforms that Azerbaijani consumers use are Tap.az (23%) and Lalafo.az (22%) (Twentify, 2021). These facts confirm that e-commerce is generally used for international shopping.

The government of Azerbaijan passed the Law on Electronic Trade in 2005. According to the law, electronic commerce participants are not required to obtain a specific license, but they must be enrolled with the State Tax Service and obtain a TIN (Tax Identification Number) (International Trade Administration U.S. Department of Commerce, 2021). The Ministry of Economy oversees and regulates Azerbaijan's e-commerce environment.

1.1. Problem Statement

With the continued rise of electronic commerce sales, the need for understanding consumers' purchasing behaviours and factors that affect their buying intentions is growing. Existing problems of e-commerce in Azerbaijan entail risks for both sellers and consumers. The absence of adequate authentication systems on local e-commerce platforms, copyright concerns, privacy and data protection hurdles, and the lack of an adequate number of electronic commerce platforms are all issues that businesses in Azerbaijan confront (International Trade Administration U.S. Department of Commerce, 2021). Personal data protection and security issues may have a significant impact on consumers' behaviors since it directly entails the risk

of financial loss and stealing of card details. This can be a reason why cash-on-delivery is still one of the most popular ways to pay for items in the country (EU4Digital, 2021). In April 2017, the government passed legislation with the aim of increasing the use of non-cash payments in an attempt to boost tax collection and transparency. However, the above-mentioned problems still exist (International Trade Administration U.S. Department of Commerce, 2021). An additional concern for Azerbaijani consumers is the potential mismatch between what they order and what they receive as the information on e-commerce platforms is limited to what is displayed by the seller on the website (Orujova, 2015). Therefore, analyzing consumer behavior and potential factors such as security, personal data protection issues, and risks that consumers perceive while purchasing online that may have negative influences on their purchase decisions can help to comprehend the elements that affect the growth pattern of electronic commerce in the country. As mentioned above, although e-commerce sales have experienced some growth in the last decades in the country, only 4.8% of the population makes online purchase transactions (Kemp, 2021) which mean there is still huge potential left for growth. Prior research on consumer uncertainty and perceived risks that affect consumers' purchase intention has been primarily conducted in developed countries which is not always applicable to developing or underdeveloped economies. There is a limited number of researches that have analysed e-commerce adoption and online buying behaviours of people in developing countries like Azerbaijan. This study focuses on the Azerbaijan market and intends to reveal the effects of risks perceived by customers on their intentions to purchase online.

1.2. Research Questions:

Major Research Question:

1. What are the factors affecting the online purchase intentions of Azerbaijani consumers?

To evaluate the role of risk factors perceived during online purchasing process on the likelihood of completing transaction on e-commerce stores, this research will look for answers for the following questions, too:

Minor Research Question:

1. How relevant are risk perceptions during the purchasing process to the intention of using e-commerce sites?
2. What types of risks play a significant role in consumers' adoption of e-commerce in Azerbaijan?

1.3. Objectives of the Study

In this study, the consumers' views on the benefits obtained by the consumers from the shopping made in the e-commerce sites, the advantages of the e-commerce sites for the consumers, the risk situations that may be encountered during shopping from e-commerce sites, and the determination of their view on the e-commerce sites while purchasing products or services are researched and revealed. In addition, it is aimed to reach the final conclusion in line with the findings of the research on the consumers' view of the benefits realized in the electronic commerce sites, whether the electronic commerce sites bring value to consumers and whether they will shop from such sites. The objectives and expected benefits of this study, which measures the effect of perceived risk on consumer attitudes towards e-commerce, can be listed as follows:

1. To understand how Azerbaijani consumers feel about making purchases online.
2. To evaluate whether there is a causal relationship between customers' purchase decisions and perseverance of potential risks associated with online shopping in e-commerce or not.

3. To determine the effect of financial, physical, performance, social, psychological, time, and privacy risk types that respondents encounter or may encounter when shopping from e-commerce sites, on their choice of whether or not to shop from e-commerce sites.
4. To determine the level of importance given to the innovations of the e-commerce sites by the respondents or whether they make purchases from e-commerce sites in line with their concerns.
5. To reveal whether the benefits perceived by the respondents by shopping on the e-commerce site facilitate the act of shopping, whether they learn the shopping process from e-commerce sites easily and quickly, and whether they remember the shopping transactions on the e-commerce sites they have done in the past.

1.4. Significance of the Study

As mentioned in the above sections, currently only 4.8% of the Azerbaijani population makes online purchases which means there is huge potential left for the growth (Kemp, 2021). This study aims to understand consumers' online purchasing behavior and the risks that discourage them from adopting e-commerce faster. Therefore, the findings of the study will play a significant role by shedding light on potential problems that exist in the e-commerce environment of Azerbaijan and will assist the main stakeholders, businesses, government and academicians, to understand risks perceived by consumers throughout the online purchasing process on their purchase decision-making process.

Risks that consumers face discourage them from completing transactions online and negatively influence sales of e-commerce businesses and the overall growth of e-commerce in the country. In this regard, this study will be especially beneficial for businesses that want to boost their online sales. By understanding consumers' behaviours and risks that they confront

throughout the purchasing process, businesses will be able to take necessary actions for eliminating those risks which will have a positive reflection on their financial state.

This study will be beneficial for the government authorities as well. As the previously mentioned government has implemented legislation to boost non-cash transactions which is necessary for the development of e-commerce (ITA, 2021). However, this has not been enough, security, and privacy issues still exist. The findings of this study will assist legal authorities to understand and evaluate risks that discourage potential customers from purchasing online. Therefore, this study will be a valuable asset for policymakers.

From an academic perspective, this study will be a valuable addition to the existing literature. Currently, there is no available literature on the role of perceived risks on online purchasing behaviours of Azerbaijani consumers and global studies do not identically represent local realities. In sum, this study is significant for businesses, government authorities, and academicians who are interested in exploring consumer behaviours in Azerbaijan.

1.5. Structure of the Study

In the next section, the literature on consumers' purchasing behaviours, and perceived risks including monetary, performance, privacy, social, psychological, physical, and time risks in the context of shopping via e-commerce sites has been explored. Hypotheses have been developed based on available literature on the topic. Then, the adopted methodology and results of conducted research have been presented. Discussions on the results and contribution of the study to the existing literature and recommendation for further research will be provided at the end.

2. Literature Review

Purchasing decision-making process is a long journey where consumers go through several steps before and even after the purchase and consumption occurs. According to Andrew Miklosik (2015), it consists of 8 steps:

1. Customers' realization of need or feeling unsatisfied with the current state;
2. Transforming the need into tangible product description which is capable of resolving the current state of dissatisfaction;
3. Assessing available products offered in the market, collecting information and evaluating alternatives to ensure that the product is able to fulfil the need at reasonable cost within required time.
4. Making decision regarding buying conditions, choosing between retailers, online or offline stores, payment methods and etc.
5. Actual purchase of the product occurs and consumer either picks up the item or it is delivered to the door.
6. Consumption and enjoyment from the benefits of the good happens at this stage.
7. Consumer evaluates the product, either he/she feels satisfied with the product or not.
8. If the customer is not happy with the product, it can be returned to the seller.

2.1. Differences in Consumer Purchase Decision Making Process in Online Versus Offline Store

Consumers' purchase decision-making process differs from online to offline. Although emerging of e-commerce eased life in many ways, it brought uncertainties to the buying process. At an online store, consumers are able to purchase what they want without incurring the time and transportation costs that an offline store visit would incur. However, due to inability of touching, as well as time to deliver entails uncertainties throughout the buying

process (Tojo & Matsubayashi, 2011). The complexity of making a purchase decision in an e-commerce store is higher than in making a purchase in a physical store. The impossibility of touching and feeling in a virtual environment leads to uncertainties regarding the quality and features of products (Hong & Yi, 2012). As the transaction takes place in a public network on an e-commerce store, consumers have the risk of not acquiring full information about the product they want to buy and the available range of products on sale (Glover & Benbast, 2010). Therefore, there is a trade-off between purchasing from a physical store and an e-commerce store (Tojo & Matsubayashi, 2011). Unlike a physical store, where customers are able to touch and try on the product before purchasing, in an online store their knowledge is only limited to what has been represented by the seller (Chatterjee & Datta, 2008). Therefore, the ability of e-commerce to fully represent any physical goods is restricted. Imagining a physical store purchase, when a potential customer enters a store to purchase a product, he/she can touch and feel the product, identify its texture, size, functionalities, and overall complete specifications, and in most cases receive expert feedback from a salesperson. In the case of e-commerce, however, an e-commerce store user only has access to the product descriptions, in most cases images, text, and sometimes 360 angle video, and online support provided by the seller. The accuracy of the information is more questionable and limited to sellers' representation in an online environment compared to physical stores which directly impacts buying decisions (Chatterjee & Datta, 2008). Online purchasing is related to higher uncertainty than shopping in traditional stores (Li & Huang, 2009). Due to that, when customers shop online, they want higher-quality information.

The term "online purchase intention" has been defined as a factor that predicts a consumer's willingness to use the Internet to complete a transaction (Mainardes, Araujo, Lasso, & Andrade, 2017). Trust and risk are important factors in predicting and determining the customers purchasing decisions in the e-commerce environment. Many theories from

psychology have been used in the literature on e-commerce to understand customers' intentions to make online purchases. Theories include the Theory of Reasoned Action (TRA), Theory of Planned Behaviour (TPB), and the Technology Acceptance Model (TAM) (Pelaez, Chen, & Chen, 2017).

Theory of Reasoned Action (TRA) utilizes subjective norms and consumer attitudes about activities to explain behavioural intention (Pelaez, Chen, & Chen, 2017). Subjective norms and consumer attitudes lead to the behavioural intention which is turned into actual purchasing or non-purchasing behaviour afterward. The Theory of Planned Behaviour (TPB) extends the notion of reasoned action by incorporating behavioural control as a predictor of behavioural intention. Risks perceived by customers have been proven to have a huge influence on consumer transactions because uncertainty about the successful completion of a transaction diminishes perceived control which in turn negatively influences behavioural intention (Pelaez, Chen, & Chen, 2017). Technology Acceptance Model adds two more factors to explain a potential customer's inclination toward adopting information technology: perceived usefulness (PU) and perceived ease of use (PEOU). The concept is that technology with higher perceived usefulness boosts utilization. Additionally, if technology is considered to be simple to use, such as "software that requires little effort", the likelihood of using it increases (Pelaez, Chen, & Chen, 2017). Other characteristics such as trust, prior experience, and enjoyment, according to recent studies, also play a role in one's attitude towards using technology for buying things (Butt, Mukerji, Shareef, Ahmed, & Huda, 2021).

2.2. The Impact of Perceived Risk in Online Purchase Decision Making

Process:

According to the research conducted by Pappas (2016), the perception of risk is one of the essential factors of purchase behaviour that has been proven to be prevalent in most buying

decisions, especially in the context of internet shopping (as cited in Ventre & Kolbe, 2020). The notion of perceived risk was established in 1960, has been defined by Bauer as "the unforeseen effects that customers experience when engaging in purchase behaviour; these results may have a negative impact on the consumer" (as cited in Hsieh & Tsao, 2013, p.243). While compared to physical shopping channels, consumers perceive additional risks when shopping online (Hong, Yi, 2012). Perceived risk can have an adverse impact on consumers' inclination and desire to purchase from e-commerce sites, along with its negative impact on customers' attitudes toward e-commerce adoption (Hsieh & Tsao, 2013). Although many researchers have studied the impact of perceived risk on buying behaviours, the results are still controversial. According to certain studies, there is a negative correlation between risk perception and completing online transactions (Dai, Forsythe, & Kwon, 2013), on the other hand, the other researchers claim that such a link does not exist (Liao & Cheung, 2001). These inconsistencies could be explained by variation between analysing overall perceived risk against components of perceived risk by focusing just on one facet of risk, such as product risk.

The term "perceived risk" has been used by Park, Lee, and Ahn (2014) in their study on "Multidimensional facets of perceived risk in mobile travel booking", and divided into 2 elements which are transaction risk related to privacy issues and functionality related to product risk. The degree to which a person feels uncertain about any aspect of a product or service, especially the outcome of the purchase has been referred to as "Perceived Risk" (Pelaez, Chen & Chen, 2019). Consumer perception of the product influences their decisions. In another research conducted by Park and Tussyadiah, it has been defined as "a consumer's belief to suffer from negative and uncertain results when buying online" (as cited in Ventre, Kolbe, 2020, p.290). There are several types of perceived risks such as monetary risk, privacy risk, psychological risk, physical risk, performance risks, time risks and social risk (Featherman, Pavlou, 2002). Performance risk has been defined as the consumers' wariness on the likelihood

that a purchased item will not be able to perform its functions properly (Farivar, Turel, & Yuan, 2017). Unlike physical stores where consumers are able to directly interact with the product, in an online environment consumers' perception of the product is highly dependent on sellers' representations of the products. Therefore, it is quite possible for customers to experience a mismatch between represented and actual products. Information asymmetry is applicable to physical products rather than digital ones sold online. Focusing on a shopper's underlying perception about perceived risk and uncertainty around a purchase gives a significant theoretical and practical knowledge of a key component in the purchasing process. Consumer views of the procedure and prospective consequence influence their decision to buy things online (Pelaez, Chen & Chen, 2019). In the following section literature on elements of perceived risk and their effect on consumer behaviour will be analysed further.

2.2.1. Financial risk:

One of the main reasons that discourages potential customers from buying from e-commerce sites is the perception that they can experience fraud or financial loss. According to research by Pappas (2016), fear of loss of money is even higher for large financial transactions (as cited in Ventre & Kolbe, 2020). Monetary risk has been often referred to as “likelihood of suffering a financial loss due to hidden or replacement costs as a result of the lack of warranty or a faulty product” (Kiang, Ye, Hao, Chen & Li, 2011). Especially, in an online purchasing process, the fear that the product may not be delivered or shipped at high cost may entail monetary concerns for buyers (Dai, Forsythe, & Kwon, 2013). Since the transactions takes place on an online network, transparency of the system and security of money transfers between buyer and seller parties can be perceived as risk by users during online purchasing (Dai, Forsythe, & Kwon, 2013). Based on available literature, the following hypothesis is expected to hold:

H₁: Perceived financial risk increases general perceived risk in the online purchasing process.

2.3.2 Privacy risk:

Alongside with loss of money, the protection of the privacy of credit card details may raise another concern for consumers which can also be classified under financial risk. According to the research, “Innovation drivers in retail industry”, one of the primary financial risks that people confront during the online purchase process is frequently linked to cybersecurity and data privacy concerns (Pantano, 2014). Consumers feel reluctant to buy things online because of the uncertainties with the transactions and risk of fraud (Perez, 2016). People are hesitant to complete online transactions and fill out personal information required when they are unsure about the protection of their data. According to the results of survey held among over 18 000 South African internet shoppers, 48% of participants are unwilling to provide their bank card information to e-commerce businesses (Stewart, 2019). Another study by Cooley and Parks-Yancy (2019) has confirmed that privacy issues have a negative impact on consumer trust which is a determinant of purchase decision. Relying on existing literature the following hypothesis is expected to be true:

H₂: Perceived privacy risk increases general perceived risk in the online purchasing process.

2.2.2 Performance Risk:

Performance risk has been described as the likelihood that a purchased item will not accomplish the intended benefits or will malfunction (Farivar, Turel & Yuan, 2017). Performance risk has been used and interchangeable referred as product risk in available literature. Consumers' perception of the product is limited to what has been represented by the

seller. Issues with product transparency such as lack of detailed information, clear product image influences consumer trust. The ability of a consumer to fully comprehend all necessary product qualities in order to make an informed decision is referred to as product transparency (Chatterjee & Data, 2008). Ability of e-commerce to entirely represent any physical goods is restricted. Unlike e-commerce stores, when a person enters a physical store to buy a product, the customer can really evaluate numerous product qualities. In the online setting, product risk is usually associated with the inability of consumers to actually check items before buying them or with the availability of insufficient details about the product. Product risk is a major element of perceived performance risk in online shopping since consumers are unable to accurately assess a product's quality before purchasing it (Hsieh & Tsao, 2013). When dealing with tangible commodities through e-commerce, sellers might create significant knowledge asymmetry. The same physical goods may be represented differently at e-commerce sites by various retailers. Therefore, consumers' knowledge of a product is fully dependent on the seller's representation of the product because they lack the ability to touch the product in the actual world (Chatterjee, Data, 2008). The following hypotheses are put forward to analyse the probable influence of perceived product risk on online buying decisions:

H₃: Perceived performance risk increases general perceived risk in the online purchasing process.

2.2.3. Social risk:

Social risk refers to how the shopper's buying decision will influence the attitudes of others towards the buyer. As a result, it fluctuates depending on the product's social prominence and social relevance (Korgaonkar, Karson, 2007). Attitudes of friends and family, their concerns regarding the impact of online shopping on the buyer may influence the intention of consumers to adopt e-commerce. Social risks have been defined as “Potential loss of status in

one's social group as a result of adopting a product or service, looking foolish or untrendy” by Pavlou and Featherman in their research on “Predicting E-services Adoption: A perceived Risk Facate Perspective” (Featherman & Pavlou, 2002, p.1036). The relationship between social risk and consumer buying intentions has also been studied. Wagner on his research examined the effect of resistance, which consists of the perception of risk perceived by consumers while purchasing technological products, on innovativeness. The results of the study revealed that the factors of financial risk, technological risk, time risk and social risk perceived by consumers while purchasing technological products are negatively linked to consumer inclination to purchase (Wagner, 2016).

H₄: Perceived social risk increases general perceived risk in online purchasing process.

2.2.4. Time risk:

Time risk has been described in the context of online shopping as the potential loss of time and effort, which encompasses difficulties such as website navigation, waiting time for product delivery, time spent returning erroneous items, and processing and delivery delays (Pentz, Preez, & Swiegers, 2020). The findings of research by Goode and Harris has demonstrated that a website's successful operation increases the trustworthiness of an online store, and reduces consumers' perceived time risk (as cited by Pentz, Preez , & Swiegers, 2020, p.7), and can be effectively leveraged to bring in new clients and keep already existing customers. A user should easily be able to traverse a site swiftly and without encountering any broken links. Consumers are frequently frustrated when dealing with a website that contains java script errors, broken pages, and slow loading speed (Lee, Eze & Ndubisi 2011). Furthermore, because online buying involves a remote transaction, customers who buy anything online ca not use or consume it right away and must wait for it to be delivered (Liao

& Keng, 2013). Due to the delay between buying and actual use of the product, customers may feel discouraged and have a lower inclination to purchase again (Liao & Keng, 2013). According to the research conducted among South African internet shoppers, 26% of respondents expressed dissatisfaction with delivery time concerns when they shop online (Stewart, 2019).

The quality of information offered on e-commerce sites has a significant effect on customer purchasing decisions. The intangibility of online buying raises consumers' uncertainty, and as a result, perception of time risk rises when there is insufficient description and details about the product offered, resulting in consumers' lack of confidence in their purchase decision making process (Pappas,2016). When shopping online, customers demand an adequate flow of information, interaction with others, and an availability of immediate and tailored information (Hsieh & Tsao, 2013). During online shopping, a buyer with prior experience and knowledge about a product is more likely to feel a lower danger of wasting time (Nepomucen, Laroche, & Richard, 2014).

H₅: Perceived time risk increases general perceived risk in online purchasing process.

2.2.5. Psychological risk:

Featherman and Pavlou (2003) have defined psychological risk as the likelihood of losing one's self-esteem. When consumers encounter a non-performing product, they may feel foolish, and the frustration of not reaching their purchasing goals may hurt their self-esteem (Featherman & Pavlou 2003). Customers may experience unnecessary tension or anxiety during and after purchasing process. Impact of psychological risk on online purchasing behaviours has been studied by researchers.

According to the research by Forsythe and Shi, the majority of customers utilize websites to search and gather information regarding the product before purchasing, however they still prefer to shop in physical stores because of the risks including financial risk, product risk, psychological risk, and time risk associated with online shopping (Forsythe & Shi, 2003). This demonstrates that consumers are interested in adopting e-commerce, but are reluctant to involve in due to the potential risk factors. Psychological risk as a component of overall perceived risk has been demonstrated to have an adverse impact on consumers' perceptions of benefit and can lower their willingness to make online purchases (Featherman & Pavlou 2003). As prior researches suggest, the following hypothesis is expected to be supported:

H₆: Perceived psychological risk increases general perceived risk in online purchasing process.

2.2.6 Physical Risk

Physical risk, which is another type of risk that consumers may encounter while displaying purchasing behaviour, is expressed by Jacoby and Kaplan (1974) as the uncertainty arising from the possibility of consumers to experience health problems after their purchasing behaviour. According to Mitchell (1992), physical risk is the type of risk that suggests that the performance of the product or service activity that consumers will purchase may result in health problems for the consumer. According to Solomon (2006), it is a state of uncertainty, which is likely to endanger the vitality of consumers, and which is more likely to be perceived by people who are especially old and sick than other people.

According to Lee (2009), it is defined as the probability of a product or product group purchased by consumers to endanger the lives of consumers. Finally, according to Hassan (2006), it is the possibility of encountering health problems such as headache, exposure to excessive radiation or physical injuries that may be experienced during or after online shopping

methods instead of traditional shopping methods. Therefore, it is quite likely that the below hypothesis will hold:

H₇: Perceived physical risk increases general perceived risk in the online purchasing process.

Above mentioned risks may contribute to general perceived risk which have influences on online purchase intentions of consumers. The term "purchase intention" has been defined as a consumer's interest in and likelihood of purchasing a product (Kim & Ko, 2012). Perceived benefits can lead to real purchase activity; consequently, the higher a customer's interest to buy an item or service, the higher their purchase intention (Luo, Chen, Chin, & Liu, 2011).

2.2.7 General Perceived Risk and Perceived Benefits

Mor (2015) aimed to examine the influence of consumers' trust and risk perception on their intention to purchase in a study that was applied to a total of 546 consumers with or without shopping from e-commerce sites. According to the findings of the research, it has been determined that there is no gender related difference between male and female customers, married and single in terms of marital status, in terms of perceived risk and trust on purchase intention. In addition, as a result of the research by Mor (2015), it was found that the younger ones in terms of age groups have lower purchasing intentions compared to the older ones, those with a lower level of education perceive more risk than the higher education level consumers, and low income compared to their income level. group consumers perceive more risk than high income group consumers.

Skard and Nysveen (2016) aimed to examine the risk reduction variables on the basis of different products by examining the perceived risk in e-commerce with different dimensions in their study on 206 university students. Finally, it has been determined that both the perceived risk of e-commerce and risk reduction efforts differ according to gender in different products

and dimensions, and risk perceptions has a negative impact on perceived benefits from shopping online. In addition, it has been determined that women have more financial, performance and psychological risk perception than men in e-commerce activities.

In his research on university students, Korgaonkar and Karson (2007) aimed to determine the effect of perceived risk and types of e-commerce sites on shopping tendency and to determine whether there is a disparity in terms of risk perception and types for biological sex groups. According to the findings of the study, it was concluded that as the general perceived risk in e-commerce sites increases, the tendency to shop decreases and there is no difference in perceived risk and types in terms of biological sex groups.

Tiryaki (2016) aimed to determine the relationship between the risk perceptions of consumers and e-commerce in his research, and as a result of the research, he concluded that the perceived risks in shopping made from e-commerce sites have an effect on the perceived benefits from shopping online.

Yilmaz and Sener (2017) aimed to determine the effect of perceived risk on consumers in Turkey on shopping from e-commerce sites in his research, which he applied to 321 people, and as a result of his research, perceived general risk had a negative effect on shopping intentions from e-commerce sites, and the risk of return and cancellation on shopping from e-commerce sites.

Featherman and Hajli (2016) aimed to determine whether the perceived risks and types of shopping from e-commerce sites have an effect on the tendency to shop from e-commerce sites in their study conducted among university students. As a result of the research, it was revealed that as the perceived risk for shopping from e-commerce sites increased, the tendency to shop from electronic commerce sites decreased and there was no difference between gender groups in terms of perceived risk for buying from e-commerce websites. In addition, risk

perception for purchasing from e-commerce sites among gender groups was seen in some of the perceived risk types and not in others.

Luo's (2004) study reveals the relationship between perceived risk and e-commerce, aimed to determine to what extent and how the risk variable, which is one of the most important obstacles of the e-commerce site platform, is reflected in the purchasing decisions by consumers. In the field research, it has been concluded that the expectation theory is sufficient to explain the risk avoidance of consumers in their shopping from e-commerce sites according to the expected utility theory. Thus, the following hypothesis can be formulated:

H₃: General perceived risk decreases perceived benefits of using e-commerce in the online purchasing process.

2.2.8 Conceptual Model:

In the below diagram, a conceptual model of the research has been displayed. As represented in the model, general perceived benefits that leads to purchase intention acts as dependent variable. General perceived risk contributed by its components, financial risk, physical risk, performance risk, social risk, psychological risk, time risk, privacy risk, acts as the independent variable:

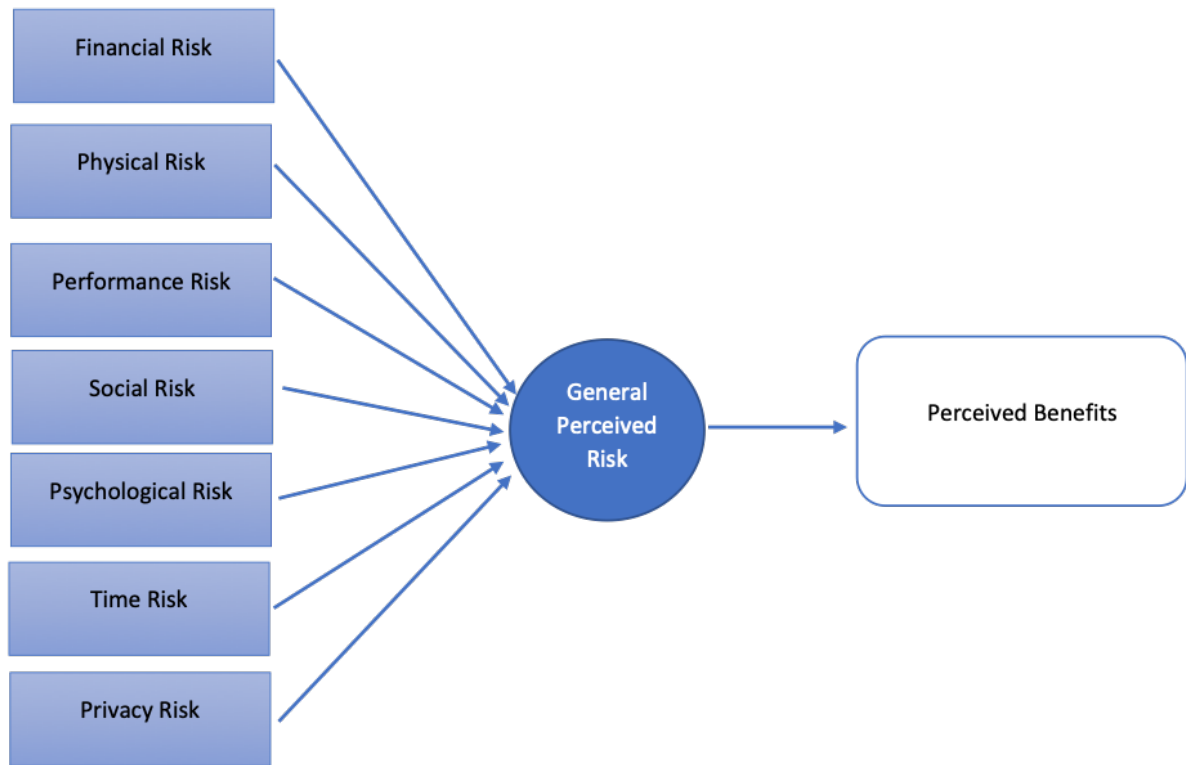


Figure 1. Conceptual Model.

3. Methodology

This section goes over the research methodology in detail, covering the sampling methods used, the target population from which data was obtained, the data collection process and the data collection technology used, and the data analysis procedure.

Quantitative research method has been utilized to find out the patterns and the significance of the causal relationship between variables. The regression equations to be tested within the scope of this research are:

$$\begin{aligned}
 \text{General perceived risk} = & \beta_0 + \beta_1 (\text{perceived financial risk}) + \beta_2 (\text{perceived physical risk}) + \beta_3 \\
 & (\text{perceived performance risk}) + \beta_4 (\text{perceived social risk}) + \beta_5 (\text{perceived psychological risk}) \\
 & + \beta_6 (\text{perceived time risk}) + \beta_7 (\text{perceived privacy risk}) + \varepsilon.
 \end{aligned}$$

$$\text{Perceived benefits} = \beta_0 + \beta_1 (\text{general perceived risk}) + \varepsilon.$$

3.1. Sampling Method

Non-probability sampling method was utilized within the scope of this thesis study. By conducting the survey online, sharing the survey link on different social media platforms such as LinkedIn and Facebook make the sampling method to be non-probability sampling. By means of this, each participant of the survey had unequal non-zero chance to participate in the survey so as while sharing the content in social media platforms, the connections of the sharer are first to see the publication. As a result, my connections in the social media had more probability to participate in this survey rather than other people. This category of non-probability sampling is called convenience sampling. This method was considered to be the most appropriate one to be applied because considering the limited resources and opportunities of the author of this thesis to reach out all the population groups and be able to distribute it in a more random manner, the author opted for the non-probability convenience population sampling method. Convenience sampling type of non - probability sampling method gives chance to the researcher to speed up the data collection process (Singh, 2021).

Considering that only 4.8% of Azerbaijani population, which is currently equal to 10,311,729, makes online purchase and complete online transaction, population size for this study is equal to $10,311,729 \times 0.048 = 494,962.992$. As it is not possible to survey whole population due to time and technical constraints, a research sample has been selected to reflect the online purchasing behaviours of the population. Sampling unit was Azerbaijan and people who is aged 18 and above and have experience with purchasing from e-commerce sites.

The necessary sample data was chosen according to the following formula:

$$\text{Necessary sample size} = [(Z \text{ score})^2 \times \text{standard deviation} \times (1 - \text{standard deviation})] / (\text{margin of error})^2 = 72 \text{ respondents.}$$

Source: <https://www.calculator.net/sample-size-calculator.html?type=1&cl=95&ci=5&pp=4.9&ps=494962&x=65&y=32>

, where confidence level = 95%

Margin of error = 5%

Population proportion = 4.9% (it is e-commerce shoppers over the total population of Azerbaijan).

Population size = 494,962 (number of e-commerce shoppers in Azerbaijan).

3.2. Data Collection

As a result of the conducted survey, the total of 155 responses were successfully collected, which is above the necessary sample size for generating robust results for the purpose of this research.

In the research, data were collected from consumers who shopped from e-commerce sites before by using the survey method with closed-ended questions. There were 3 groups of questions in the questionnaire form. All the questions have been adopted from prior researches made in this field. The first question group consists of statements to measure the respondents' e-commerce usage characteristics, the second question group's demographic and economic characteristics, and the third question group respondents' perceptions of e-commerce sites (Stone, Gronhaug, 1993); (Dholakia, 2001); and (Featherman, Pavlou, 2003) scales were used to create the general perceived risk in the model and the sub-variables of these variables, such as financial, physical, performance, social, psychological, time and privacy (Kulviwat, 2007) scale was used to create the variable of perceived benefit.

The scope of the research consists of consumers aged 18 and over who live in Azerbaijan and have shopped from electronic commerce sites before. The reason why 18-year-old respondents were included in the study was that at this age they can own bank accounts to make online purchase without participation of third parties such as family members. Additionally, similar researches in this field have also survey people 18 and above. Glover and Benbasat (2010) aimed to determine the factors affecting the perceived risk in e-commerce

sites and the effect of perceived risk on the behaviour of consumers on e-commerce sites in his research that he applied to consumers aged 18 and over. It has been determined that the age of the consumer affects the perceived risk. The survey was applied to the respondents between April 1 and April 30, 2022. Although the research was planned to be conducted by face-to-face survey method, some of the surveys were filled by the participants via e-mail and social media due to the sample size, lack of time and cost factors. Before the final survey form was prepared for the research and data collection was started, 10 people were interviewed and their opinions were taken. Then, a pilot study was conducted on these people, and the survey questions were rearranged according to the results obtained.

With regard to the ethical considerations of the questionnaire design, all the ethical factors were addressed in the beginning of the survey notifying the potential respondent about the perseverance of confidentiality and privacy of the information provided by the potential questionnaire participant. The duration of filling the survey was shared with the participants as well as the questions groups were grouped under perceived risk types. In social media posts, the purpose and application of the questionnaire were stated.

The extent to which respondents agree with the statements to measure their perceptions of e-commerce sites was measured with a 5-point Likert scale (5 = I strongly agree, 1 = I strongly disagree). To ensure validity, questionnaires with the following criteria was removed from the analysis: (1) incomplete responses; (2) identical responses to all questions; and (3) completed in a short amount of time (Luo and Ye 2019). STATA software program was used in the analysis of the data. Means, standard deviations, frequency distributions, reliability analyzes, confirmatory factor analysis, bivariate and multiple regression analysis were performed in the research. Confirmatory Factor Analysis (CFA) was utilized to ensure the validity and reliability of research. CFA helps to identify the unidimensionality of constructs and

we adopted standard of eliminating loading factors less than 0.5 to ensure reliability and validity (Hsieh, Tsao, 2013).

Survey questions has been adopted from prior researches:

Variables	Adopted from
Perceived benefits	Steven Glover and Izak Benbasat
Perceived financial risk	Steven Glover and Izak Benbasat; Ivan Ventre & Diana Kolbe; Prateek Kalia, Dr Richa Arora and Sibongiseni Kumalo
Perceived social risk	Steven Glover and Izak Benbasat
Perceived physical risk	Steven Glover and Izak Benbasat
Perceived performance risk	Steven Glover and Izak Benbasat; Prateek Kalia, Dr Richa Arora and Sibongiseni Kumalo
Perceived time risk	Steven Glover and Izak Benbasat
Perceived psychological risk	Steven Glover and Izak Benbasat
Perceived privacy risk	Steven Glover and Izak Benbasat

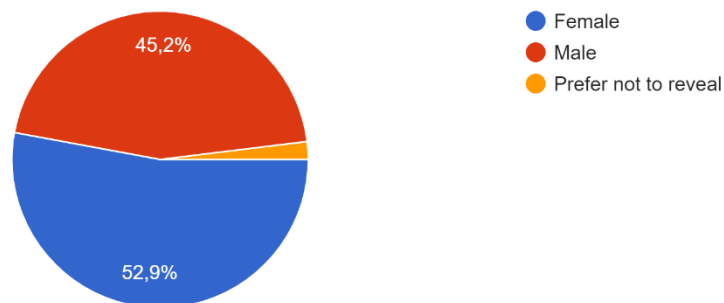
4. Findings

In this section, the findings of data analysis will be represented, including descriptive statistics, Confirmatory Factor Analysis for reliability and validity check, multiple and simple linear regression analyses to determine the significance of relationship between independent (financial, physical, performance, social, psychological, time, privacy, and general risk) and dependent variable (perceived benefit)

4.1. E-Commerce Usage Demographic and Economic Characteristics of Respondents

Figure 1. Gender Statistics.

Please indicate your gender.
155 ответов

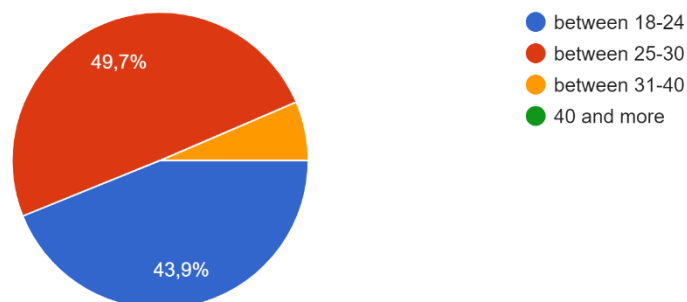


Source: Google forms.

As can be seen in Figure 1, 45.2% (70 respondents) of the sample size consists of males, whereas 52.9% (82 respondents) of the sample are female respondents.

Figure 2. Age Statistics.

Please indicate your age.
155 ответов

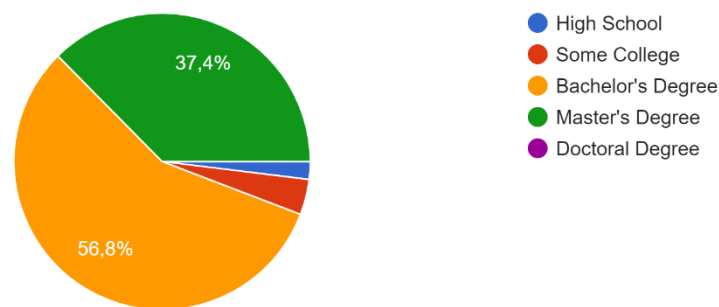


Source: Google forms.

The age group between 25-30 makes up the vast majority of the sample size with 49.7% share (77 respondents), the age group 18-24 constitutes 43.9% (68 respondents) of the sample, and 6.5% (10 respondents) indicated that they belong to the age group of 31-40. No responses were collected from individuals belonging to the age group “40 and more”.

Figure 3. Education Statistics.

Please indicate your highest educational attainment.
155 ответов

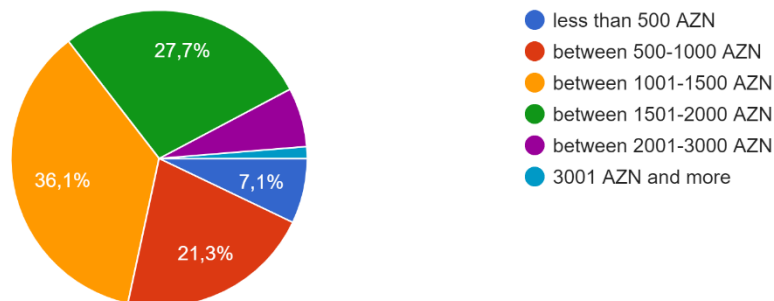


Source: Google Forms.

As it can be inferred from the Figure 3., the sample size of the questionnaire consists of the educated individuals. More specifically, 56.8% (88 respondents) of the sample’s highest educational attainment is bachelor’s degree, which is followed by the second biggest share of the sample with the highest educational attainment of master’s degree, making up 37.4% (58 respondents) of the sample. 3.9% (6 respondents) of the sample indicated to be graduates from some college and 1.9% (3 respondents) indicated being graduates from high school. No responses were collected from individuals possessing doctoral degree.

Figure 4. Income Statistics.

Please indicate your monthly income.
155 ответов



Source: Google Forms.

The income statistics indicate that 36.1% (56 respondents) share of the sample size consists of individuals with monthly income between 1001-1500 AZN, 27.7% (43 respondents) with income between 1501-2000 AZN, 21.3% (33 respondents) with income between 500-1000 AZN, 7.1% (11 respondents) with income less than 500 AZN, 6.5% (10 respondents) with income between 2001-3000 AZN, and 1.3% (2 respondents) with income more than 3000 AZN.

4.2. Averages and Standard Deviations of Respondents' Perceived Risk

Types and Perceived Benefits for E-commerce Sites

The variables regarding the risk perceptions of the respondents towards e-commerce sites were grouped into eight groups. These are general perceived risk, financial risk, physical risk, performance risk, social risk, psychological risk, time risk, and privacy risk.

Table 1. Test Statistics for General Perceived Risk.

<i>General Perceived Risk</i>		
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<i>Cronbach Alpha Coefficient = 0.844</i>		<i>Mean</i>	<i>Standard Deviation</i>
<i>Code</i>			
<i>GPR1</i>	“Shopping using electronic commerce sites is risky.”	2.8898	0.94224
<i>GPR2</i>	“It is risky to become a member of the site to shop online.”	2.7323	0.92437
<i>GPR3</i>	“It is dangerous to shop using electronic commerce sites.”	2.6168	0.91487
<i>GPR4</i>	“When I shop using electronic commerce sites, I may be at risk of having my personal information stolen.”	3.4672	0.89860
<i>GPR5</i>	“It is a mistake to shop using electronic commerce sites.”	2.1732	0.79896
<i>GPR6</i>	“I think shopping using electronic commerce sites is a problem.”	2.2415	0.88820

Source: Stata output, own construction.

As can be seen in Table 1, the general perceived risk variable with a Cronbach alpha coefficient of 0.844 has the highest average of 3.4672 for the statement "When I shop using electronic commerce sites, I may face the risk of my personal information being stolen." The statement “It is a mistake to shop using electronic commerce sites” has the lowest average with an average of 2.1732. These ratios show that the general perceived risk of respondents participating in the survey study towards e-commerce sites is mostly due to the possibility of their personal information being stolen. In addition, it has been determined that the respondents do not see shopping from e-commerce sites as a mistake or a problem.

Table 2. Test Statistics for Perceived Financial Risk.

<i>Perceived Financial Risk</i>		<i>Mean</i>	<i>Standard Deviation</i>
<i>Cronbach Alpha Coefficient = 0.743</i>			
<i>Code</i>			
<i>FIN1</i>	“Spending money on shopping using e-commerce sites is a bad choice.”	2.1732	0.89526
<i>FIN2</i>	“I think my bank account information can be stolen when I shop using electronic commerce sites.”	3.1549	0.95953
<i>FIN3</i>	“The idea of shopping using electronic commerce sites is not a good idea financially.”	2.3202	0.96373
<i>FIN4</i>	“When I shop using e-commerce sites, I worry that I will not be able to get what I pay for.”	2.9633	1.01240

Source: Stata output, own construction.

As can be seen in Table 2, the statement "I think my account information may be stolen when I shop using electronic commerce sites" of the financial risk variable with a Cronbach alpha coefficient of 0.743 has the highest average with an average of 3.1549. The statement “It is a bad choice to spend money on shopping using electronic commerce sites” has the lowest average with an average of 2.1732. These ratios show that the reason for the respondents participating in the survey to perceive shopping from e-commerce sites as a financial risk is that their account information is most likely to be stolen.

Table 3. Test Statistics for Perceived Physical Risk.

<i>Perceived Physical Risk</i>		<i>Mean</i>	<i>Standard Deviation</i>
<i>Cronbach Alpha Coefficient = 0.782</i>			
<i>Code</i>			
<i>PHY1</i>	“I am concerned about whether shopping using e-commerce sites will adversely affect my health.”	2.2520	1.00238
<i>PHY2</i>	“When I shop using electronic commerce sites, I get extremely nervous.”	2.4226	0.99600
<i>PHY3</i>	“When I choose to shop using electronic commerce sites, I am exposed to digital viruses and malware.”	2.6693	0.96291

Source: Stata output, own construction.

As can be seen in Table 3, the statement "When I prefer to shop using electronic commerce sites, I am exposed to viruses and malware" of the physical risk variable with a Cronbach alpha coefficient of 0.782 has the highest average with an average of 2.6693. The statement “I am worried about whether shopping using electronic commerce sites will adversely affect my health” has the lowest average with an average of 2.2520. These rates show that the most common reason for respondents to perceive e-commerce sites as physical risk is viruses and malware infecting computers, laptops or mobile phones.

Table 4. Test Statistics for Perceived Performance Risk.

<i>Perceived Performance Risk</i>			

<i>Cronbach Alpha Coefficient = 0.878</i>		<i>Mean</i>	<i>Standard Deviation</i>
<i>Code</i>			
<i>P1</i>	“I am worried that shopping transactions using electronic commerce sites may not be handled well.”	2.8373	0.97321
<i>P2</i>	“I am worried that the performance of my shopping transactions using electronic commerce sites will not be reliable.”	2.9606	0.98463
<i>P3</i>	“I am afraid that I will not get the performance I expect when I shop from electronic commerce sites.”	3.0656	1.02001

Source: Stata output, own construction.

As can be seen in Table 4, the expression "I am afraid that I will not get the performance I expect when I shop from electronic commerce sites" of the performance risk variable with a Cronbach alpha coefficient of 0.878 has the highest average with a mean of 3.0656. The statement “I am afraid that I will not get the performance I expect when I shop from electronic commerce sites” has the lowest average with an average of 2.8373. These rates show that the reason for the respondents' perception of performance risk in shopping made from e-commerce sites is mostly due to the fear of not getting the performance they expected.

Table 5. Test Statistics for Perceived Social Risk.

<i>Perceived Social Risk</i>	<i>Mean</i>	<i>Standard Deviation</i>
<i>Cronbach Alpha Coefficient = 0.843</i>		

<i>Code</i>			
<i>S1</i>	“My friends criticize me to shop using electronic commerce sites.”	2.2756	0.99216
<i>S2</i>	“Shopping using electronic commerce sites worries my friends and family that I can be scammed.”	2.3491	1.00338
<i>S3</i>	“Spending a lot of time while shopping using electronic commerce sites causes my relations with my relatives to deteriorate.”	2.0630	0.92122
<i>S4</i>	“Shopping using electronic commerce sites does not fit well with myself.”	2.2861	1.01023

Source: Stata output, own construction.

As can be seen in Table 5, the statement "My shopping using electronic commerce sites worries my close circle" of the social risk variable with a Cronbach alpha coefficient of 0.843 has the highest average with an average of 2.3491. The statement “Spending a lot of time while shopping using electronic commerce sites causes my relations with my relatives to deteriorate” has the lowest average with an average of 2.0630. These rates show that the respondents' social risk perception when they shop from e-commerce sites is mostly due to the concern of their immediate surroundings.

Table 6. Test Statistics for Perceived Psychological Risk.

<i>Perceived Psychological Risk</i>		
	<i>Mean</i>	<i>Standard Deviation</i>
<i>Cronbach Alpha Coefficient = 0.900</i>		

<i>Code</i>			
<i>PSY2</i>	“Shopping using electronic commerce sites causes me to feel unnecessary tension.”	2.4777	1.00925
<i>PSY3</i>	“When I shop from e-commerce sites, I feel anxious. Shopping from electronic commerce sites makes me feel more uncomfortable than traditional commerce.”	2.6037	1.01975
<i>PSY4</i>	“When I shop from e-commerce sites, I feel anxious.”	2.5118	1.02751
<i>PSY5</i>	“Browsing e-commerce sites causes me to feel anxious.”	2.2625	0.95663

Source: Stata output, own construction.

As can be seen in Table 6, the expression "Shopping from electronic commerce sites makes me feel more uncomfortable compared to traditional commerce" of the psychological risk variable with a Cronbach alpha coefficient of 0.900 has the highest average with an average of 2.6037. The statement “Browsing on electronic commerce sites causes me to feel anxious” has the lowest average with an average of 2.2625. These rates show that the psychological risk perception of the respondents who participated in the survey study when they shop from e-commerce sites is mostly due to the fact that electronic commerce makes them feel more uncomfortable than traditional commerce.

Table 7. Test Statistics for Perceived Time Risk.

<i>Perceived Time Risk</i>		
	<i>Mean</i>	<i>Standard Deviation</i>
<i>Cronbach Alpha Coefficient = 0.732</i>		

<i>Code</i>			
<i>T1</i>	"I lose a lot of time when shopping on e-commerce sites."	2.4357	0.93987
<i>T2</i>	"It takes a lot of time to correct the mistakes I encounter while shopping on electronic commerce sites, causing a great loss of time."	2.7743	1.08408
<i>T3</i>	"The time constraints of shopping transactions on electronic commerce sites cause me to experience time pressure."	3.0367	1.12564
<i>T4</i>	"Shopping from electronic commerce sites means that I use time inefficiently."	2.1575	0.91845

Source: Stata output, own construction.

As can be seen in Table 7, the time risk variable with a Cronbach alpha coefficient of 0.732 has the highest average with a mean of 3.0367, with the statement "The time constraints of shopping transactions on electronic commerce sites cause me to experience time pressure." The statement "Shopping from electronic commerce sites means that I use time inefficiently" has the lowest average with an average of 2.1575. These rates show that the reason why the respondents who participated in the survey study perceive shopping on e-commerce sites as a time risk is mostly the time constraints of shopping transactions.

Table 8. Test Statistics for Perceived Privacy Risk.

<i>Perceived Privacy Risk</i>	<i>Mean</i>	<i>Standard Deviation</i>
<i>Cronbach Alpha Coefficient = 0.867</i>		

<i>Code</i>			
<i>PR1</i>	“When I shop from electronic commerce sites, I think that the confidentiality of my payment information is not at a sufficient level.”	3.0262	0.99702
<i>PR2</i>	“The use of personal information required for shopping on electronic commerce sites causes my private information to be lost.”	2.9528	1.98027
<i>PR3</i>	“Shopping from e-commerce sites exposes my account information to being hijacked by internet thieves.”	3.1837	0.96945
<i>PR4</i>	“When I shop from electronic commerce sites, I am more likely to encounter unsolicited messages in my e-mail accounts.”	3.5553	0.99847

Source: Stata output, own construction.

As can be seen in Table 8, the statement "When I shop from electronic commerce sites, I am more likely to encounter unsolicited messages in my e-mail accounts" of the privacy risk variable with a Cronbach alpha coefficient of 0.867 has the highest average with an average of 3,5553. The statement “The use of personal information required for shopping from electronic commerce sites causes the loss of my private information” has the lowest average with an average of 2.9528. These rates show that the reason for the respondents to perceive shopping on e-commerce sites as a privacy risk is that they are most likely to encounter unwanted messages accumulated in their e-mail accounts.

The respondents' averages and standard deviations of perceived benefits for e-commerce sites are mentioned below.

Table 9. Test Statistics for Perceived Benefits.

<i>Perceived Benefits</i>		<i>Mean</i>	<i>Standard Deviation</i>
<i>Cronbach Alpha Coefficient = 0.762</i>			
<i>Code</i>			
<i>B1</i>	"Using electronic commerce sites helps me to shop more effectively."	4.1737	0.70156
<i>B2</i>	"Shopping using electronic commerce sites is more efficient than traditional commerce."	3.4684	1.00477
<i>B3</i>	"Shopping using e-commerce sites saves time."	4.1237	0.76048
<i>B5</i>	"It is easy to shop using electronic commerce sites."	4.0947	0.67482

Source: Stata output, own construction.

As can be seen in Table 9, the expression "Using electronic commerce sites helps me to shop" of the perceived usefulness variable with a Cronbach alpha coefficient of 0.762 has the highest average with an average of 4.1737. The statement "Shopping using electronic commerce sites is more efficient than traditional commerce" has the lowest average with an average of 3.4684. These ratios show that respondents' perceived benefits of e-commerce sites are mostly due to the fact that it helps them to shop.

4.3. Confirmatory Factor Analysis Results for Perceived Risks and Benefits

Confirmatory factor analysis was conducted to test the validity of the dimensions of Perceived Risk for the research sample. As a result of the analysis, it was seen that the

dimensions of general perceived risk, financial risk, performance risk, psychological risk, time risk, which constitute the perceived risk, do not have an acceptable model fit value. As a result of the proposed modification, a statistically inappropriate variable among the dimensions of general perceived risk, performance risk, psychological risk; Two variables that are not statistically appropriate within the dimension of financial risk and time risk have been eliminated. The model goodness-of-fit values obtained after the modification are as shown in Table 10.

Table 10. Fitted Values Tests for Perceived Risk.

<i>Model Fit Indices</i>	<i>Model Fit Values</i>	<i>Acceptable Fit Values</i>
<i>Chi-Square (χ^2)</i>	494.433	
<i>Df</i>	124	
<i>(χ^2) / Df</i>	3.987	1-5
<i>p-value</i>	0.000	
<i>RMSEA</i>	0.072	$0.05 \leq \text{RMSA} \leq 0.10$
<i>RMR</i>	0.049	$0.05 \leq \text{RMR} \leq 0.10$
<i>AGFI</i>	0.810	$0.85 \leq \text{AGFI} \leq 0.90$
<i>NFI</i>	0.887	$0.90 \leq \text{NFI} \leq 0.95$
<i>CFI</i>	0.922	$0.90 \leq \text{CFI} \leq 0.97$

<i>GFI</i>	0.854	$0.90 \leq GFI \leq 0.95$
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Source: Stata output, own construction.

As seen in Table 10, the $(\chi^2)/Df$ ratio was found to be 2,953 below the reference value. RMSEA is at an acceptable level with 0.072. NFI, CFI, GFI and AGFI values are also seen to be at an acceptable level of compliance. In Table 11, the expressions of the variables constituting the perceived risk as a result of confirmatory factor analysis are given.

Table 11. Confirmatory Factor Analysis Results for General Perceived Risk.

<i>General Perceived Risk</i>		<i>Estimates</i>	<i>S.E.</i>	<i>C.R.</i>	<i>Standardized Coefficients</i>
<i>Code</i>					
<i>GPR1</i>	Shopping using electronic commerce sites is risky.	0.796	0.076	10.525	0.560
<i>GPR2</i>	It is risky to become a member of the site to shop online.	0.910	0.074	12.367	0.652
<i>GPR3</i>	It is dangerous to shop using electronic commerce sites.	1.028	0.072	14.246	0.744
<i>GPR5</i>	It is a mistake to shop using electronic commerce sites.	0.937	0.063	14.895	0.776
<i>GPR6</i>	I think shopping using electronic commerce sites is a problem.	1.000			0.746

Source: Stata output, own construction.

According to the results of confirmatory factor analysis, the results obtained regarding the general perceived risk confirm the factor structure of the scale.

Table 12. Confirmatory Factor Analysis Results for Perceived Financial Risk.

<i>Perceived Financial Risk</i>		<i>Estimates</i>	<i>S.E.</i>	<i>C.R.</i>	<i>Standardized Coefficients</i>
<i>Code</i>					
<i>FIN1</i>	“Spending money on shopping using e-commerce sites is a bad choice.”	0.991	0.64	15.480	0.806
<i>FIN3</i>	“The idea of shopping using electronic commerce sites is not a good idea financially.”	1.000			

Source: Stata output, own construction.

According to the results of confirmatory factor analysis, the results related to financial risk confirm the factor structure of the scale.

Table 13. Confirmatory Factor Analysis Results for Perceived Physical Risk.

<i>Perceived Physical Risk</i>		<i>Estimates</i>	<i>S.E.</i>	<i>C.R.</i>	<i>Standardized Coefficients</i>
<i>Code</i>					

<i>PHY1</i>	“I am concerned about whether shopping using e-commerce sites will adversely affect my health.”	1.166	0.093	12.574	0.733
<i>PHY2</i>	“When I shop using electronic commerce sites, I get extremely nervous.”	1.302	0.094	13.821	
<i>PHY3</i>	“When I choose to shop using electronic commerce sites, I am exposed to digital viruses and malware.”	1.000			

Source: Stata output, own construction.

According to the results of confirmatory factor analysis, the results related to physical risk confirm the factor structure of the scale.

Table 14. Confirmatory Factor Analysis Results for Perceived Performance Risk.

<i>Perceived Performance Risk</i>		<i>Estimates</i>	<i>S.E.</i>	<i>C.R.</i>	<i>Standardized Coefficients</i>
<i>Code</i>					
<i>P1</i>	“I am worried that shopping transactions using electronic commerce sites may not be handled well.”	0.954	0.052	18.321	0.822
<i>P2</i>	“I am worried that the performance of my shopping transactions using	1.046	0.052	20.263	0.891

	electronic commerce sites will not be reliable.”				
<i>P3</i>	“I am afraid that I will not get the performance I expect when I shop from electronic commerce sites.”	1.000			0.822

Source: Stata output, own construction.

According to the results of confirmatory factor analysis, the results related to performance risk confirm the factor structure of the scale.

Table 15. Confirmatory Factor Analysis Results for Perceived Social Risk.

<i>Perceived Social Risk</i>		<i>Estimates</i>	<i>S.E.</i>	<i>C.R.</i>	<i>Standardized Coefficients</i>
<i>Code</i>					
<i>S1</i>	“My friends criticize me to shop using electronic commerce sites.”	1.000			0.702
<i>S2</i>	“Shopping using electronic commerce sites worries my friends and family that I can be scammed.”	1.072	0.056	19.149	0.745
<i>S3</i>	“Spending a lot of time while shopping using electronic commerce sites causes my relations with my relatives to deteriorate.”	0.980	0.075	13.068	0.741

S4	“Shopping using electronic commerce sites does not fit well with myself.”	1.079	0.082	13.110	0.744
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Source: Stata output, own construction.

According to the results of confirmatory factor analysis, the results related to social risk confirm the factor structure of the scale.

Table 16. Confirmative Factor Analysis Results for Perceived Psychological Risk.

<i>Perceived Psychological Risk</i>		<i>Estimates</i>	<i>S.E.</i>	<i>C.R.</i>	<i>Standardized Coefficients</i>
<i>Code</i>					
<i>PSY2</i>	“Shopping using electronic commerce sites causes me to feel unnecessary tension.”	1.000			0.832
<i>PSY3</i>	“When I shop from e-commerce sites, I feel anxious. Shopping from electronic commerce sites makes me feel more uncomfortable than traditional commerce.”	1.030	0.051	20.098	0.848
<i>PSY4</i>	“When I shop from e-commerce sites, I feel anxious.”	1.081	0.050	21.140	0.884
<i>PSY5</i>	“Browsing e-commerce sites causes me to feel anxious.”	0.880	0.050	17.468	0.773

Source: Stata output, own construction.

According to the results of confirmatory factor analysis, the results related to psychological risk confirm the factor structure of the scale.

Table 17. Confirmatory Factor Analysis Results for Perceived Time Risk.

<i>Perceived Time Risk</i>		<i>Estimates</i>	<i>S.E.</i>	<i>C.R.</i>	<i>Standardized Coefficients</i>
<i>Code</i>					
<i>T2</i>	“It takes a lot of time to correct the mistakes I encounter while shopping on electronic commerce sites, causing a great loss of time.”	1.021	0.082	12.502	0.750
<i>T3</i>	“The time constraints of shopping transactions on electronic commerce sites cause me to experience time pressure.”	1.000			0.707

Source: Stata output, own construction.

According to the results of confirmatory factor analysis, the results related to time risk confirm the factor structure of the scale.

Table 18. Confirmatory Factor Analysis Results for Perceived Privacy Risk.

<i>Perceived Privacy Risk</i>		<i>Estimates</i>	<i>S.E.</i>	<i>C.R.</i>	<i>Standardized</i>

					<i>Coefficients</i>
<i>Code</i>					
<i>PR1</i>	“When I shop from electronic commerce sites, I think that the confidentiality of my payment information is not at a sufficient level.”	1.000			0.828
<i>PR2</i>	“The use of personal information required for shopping on electronic commerce sites causes my private information to be lost.”	1.008	0.053	19.013	0.848
<i>PR3</i>	“Shopping from e-commerce sites exposes my account information to being hijacked by internet thieves.”	1.011	0.052	19.354	0.861

Source: Stata output, own construction.

According to the results of the confirmatory factor analysis, the results regarding the privacy risk confirm the factor structure of the scale.

Confirmatory factor analysis was performed to test the validity of the variables that make up the Perceived Benefit for the research sample. As a result of the analysis, it was seen that the perceived benefit dimension, which constitutes the perceived benefit, did not have an acceptable model fit value. As a result of the proposed modification, a variable that was not statistically appropriate within the perceived benefit dimension was eliminated. The model goodness-of-fit values obtained after the modification are as shown in Table 19.

Table 19. Fitted Values Tests for Perceived Benefit.

<i>Model Fit Indices</i>	<i>Model Fit Values</i>	<i>Acceptable Fit Values</i>
<i>Chi-Square (χ^2)</i>	6.331	
<i>Df</i>	2	
<i>(χ^2) / Df</i>	3.1665	1-5
<i>p-value</i>	0.41	
<i>RMSEA</i>	0.075	$0.05 \leq \text{RMSA} \leq 0.10$
<i>RMR</i>	0.013	$0.05 \leq \text{RMR} \leq 0.10$
<i>AGFI</i>	0.956	$0.85 \leq \text{AGFI} \leq 0.90$
<i>NFI</i>	0.983	$0.90 \leq \text{NFI} \leq 0.95$
<i>CFI</i>	0.988	$0.90 \leq \text{CFI} \leq 0.97$
<i>GFI</i>	0.990	$0.90 \leq \text{GFI} \leq 0.95$

Source: Stata output, own construction.

As seen in Table 19, the (χ^2)/Df ratio was found to be 3.165, below the reference value. RMSEA is at an acceptable level with 0.075. NFI, CFI, GFI and AGFI values are also seen to be at an acceptable level of compliance.

Table 20. Confirmatory Factor Analysis Results for Perceived Benefit.

	<i>Perceived Benefit</i>	<i>Estimates</i>	<i>S.E.</i>	<i>C.R.</i>	<i>Standardized Coefficients</i>
<i>Code</i>					
<i>B1</i>	“Using electronic commerce sites helps me to shop more effectively.”	1.000			0.656
<i>B2</i>	“Shopping using electronic commerce sites is more efficient than traditional commerce.”	1.392	0.145	9.605	0.637
<i>B3</i>	“Shopping using e-commerce sites saves time.”	1.199	0.116	10.353	0.724
<i>B5</i>	“It is easy to shop using electronic commerce sites.”	1.041	0.101	10.260	0.709

Source: Stata output, own construction.

According to the results of the confirmatory factor analysis, the results regarding the perceived benefit confirm the factor structure of the scale.

4.4. Impact of Perceived Risk Types on General Perceived Risk

Multiple regression analysis was conducted to measure the effect of the sub-variables of the perceived risk types factor, namely financial risk, physical risk, performance risk, social risk, psychological risk, time risk and privacy risk, on the general perceived risk. Before performing the multiple regression analysis, the linearity of the relationships between the

perceived risk types and the general perceived risk, whether they are related to each other and whether the error terms are normally distributed, were examined. It was determined that the distribution of the variables was normal. Since the F value of the multiple regression analysis is 80.808 and the p value (0.000) is small, 0.05 shows that the general perceived risk can be estimated with at least one subvariable of the perceived risk types variable. When we looked at the p value of each sub-variable, it was determined that there was no variable that did not make a significant contribution to the model, except for social risk (0.860). Therefore, social risk was excluded from the analysis. When we look at the VIF values of the variables, it was concluded that the sub-variables of time (15,496) and privacy (17,318) were greater than the desired value of 10, that is, these two variables were related to each other. In this case, the variance ratios were used to make a final decision, and they were not excluded from the analysis because the variance ratios of both the time risk (0.95) and the privacy risk (0.97) were close to the lower limit of 0.90.

Table 21. Regression Analysis Measuring the Impact of Perceived Risk Types on General Perceived Risk.

$R = 0.777$		$R^2 = 0.603$		$Adjusted R^2 = 0.596$		
$P: 0.000$		$F = 80.808$		$Standard Error = 0.4439$		
<i>Dependent Variable: General Perceived Risk</i>						
<i>Independent Variables</i>	Standardized Coefficients		Not Standardized Coefficients			
	β	Standard Error	β	t	Sig.	VIF
<i>Constant</i>	0.6932	0.0911		7.6121	0.0000	

<i>Financial Risk (FIN)</i>	0.3871	0.0382	0.4635	10.1342	0.0000	1.9540
<i>Physical Risk (PHY)</i>	0.1029	0.0501	0.1203	2.0322	0.0435	3.2798
<i>Performance Risk (P)</i>	0.0816	0.0391	0.1037	2.0444	0.0427	2.3801
<i>Social Risk (S)</i>	0.0088	0.0463	0.0093	0.1762	0.8606	2.7682
<i>Psychological Risk (PSY)</i>	0.1572	0.0404	0.2082	3.9093	0.0000	2.6566
<i>Time Risk (T)</i>	-0.2357	0.1112	-0.2721	-2.1140	0.0356	15.4965
<i>Privacy Risk (PR)</i>	0.2510	0.1229	0.2795	2.0504	0.0415	17.3182

Source: Stata output, own construction.

As seen in Table 21, as a result of multiple regression analysis, the perceived risk type variable, which consists of sub-variables of financial risk, physical risk, performance risk, social risk, psychological risk, time risk and privacy risk, has a 60.3% power to explain the effect on general perceived risk. In this situation:

4.5 Impact of Perceived General Risk on Perceived Benefits

Bivariate regression analysis was conducted in order to measure the impact of general risk on the perceived benefits from using e-commerce. Before performing the bivariate regression analysis, the linearity of the relationships between the two variables were examined,

and the linear relationship was revealed. The fact that the bivariate linear regression analysis had an F value of 69.679 and a p-value (0.000) of 0.05 indicates that the general perceived risk and the perceived benefits variable can be estimated.

Table 22. Regression Analysis Measuring the Impact of General Perceived Risk on Perceived Benefits.

$R = 0.395$		$R^2 = 0.156$		$Adjusted R^2 = 0.153$	
$P: 0.000$		$F = 69.679$		$Standard Error = 0.6021$	
<i>Dependent Variable: Perceived Benefits</i>					
<i>Independent Variable</i>	Standardized Coefficients		Not Standardized Coefficients		
	β	Standard Error	β	t	Sig.
<i>Constant</i>	5.0141	0.1159		7.6121	0.0000
<i>General Perceived Risk (GPR)</i>	-0.3701	0.0438	-0.3945	-8.4497	0.0000

Source: Stata output, own construction.

As seen in Table 22, as a result of simple linear regression analysis, the effect of the general perceived risk variable on the perceived ease of use has the power to explain approximately 15%. In this situation:

Table 23. Hypotheses Results.

<i>Hypothesis</i>	<i>Result</i>

<p><i>H₁: Perceived financial risk increases general perceived risk in online purchasing process.</i></p>	<p>supported</p>
<p><i>H₂ : Perceived privacy risk increases general perceived risk in online purchasing process.</i></p>	<p>supported</p>
<p><i>H₃: Perceived performance risk increases general perceived risk in online purchasing process.</i></p>	<p>supported</p>
<p><i>H₄: Perceived physical risk increases general perceived risk in online purchasing process.</i></p>	<p>supported</p>
<p><i>H₅: Perceived psychological risk increases general perceived risk in online purchasing process.</i></p>	<p>supported</p>
<p><i>H₆: Perceived time risk increases general perceived risk in online purchasing process.</i></p>	<p>supported</p>
<p><i>H₇: Perceived social risk increases general perceived risk in online purchasing process.</i></p>	<p>not supported</p>

<i>H₈: Perceived general risk decreases perceived benefits of using e-commerce in online purchasing process.</i>	supported
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Source: own construction.

5. Discussion

As a result of this research, which measures the effect of perceived risk on perceived benefits of using e-commerce, the following conclusions were reached.

Respondents do not see it as a problem or mistake when shopping on e-commerce sites, being a member of the site and facing the risk of having their personal information stolen. However, in general, it has been determined that they are not prejudiced about whether shopping from e-commerce sites carries a risk or not. In the literature, there are studies by Erel (2008), Cody (2015) and Cody (2017) similar to this result.

Respondents are of the opinion that shopping from e-commerce sites does not carry any financial risk or not. However, he is undecided about the possibility of stealing his account information and whether he is at risk of not getting what he paid for. It has been determined that they prefer that shopping from e-commerce sites does not pose any risk in terms of physical risk or not. It has been determined that both the health of consumers shopping from e-commerce sites and personal computers, smartphones or tablets that mediate consumers' shopping from e-commerce sites are mostly not exposed to viruses or malware.

It has been determined that the respondents are mostly in an undecided tendency about whether shopping from e-commerce sites carries a performance risk or not. It has tended to remain undecided due to both the performance of the product or service purchased and the possibility that the product or service purchased may not achieve the performance they expect

from the shopping transactions on the website. They think that shopping from e-commerce sites clearly does not carry a risk in terms of whether it carries a social risk or not. This result shows that consumers' shopping on e-commerce sites is due to the fact that the close circle of consumers does not welcome them, they are worried and their relations with these people are likely to deteriorate.

Respondents think that both surfing and shopping on e-commerce sites are not a concern as to whether shopping from e-commerce sites carries a psychological risk. However, it tends to remain undecided about feeling anxiety in e-commerce activities compared to traditional commerce. Respondents have a tendency not to be clear about whether shopping from e-commerce sites carries a time risk. However, it takes a long time to solve the problems encountered while shopping and the time constraints increase the level of risk perception. It tends to remain undecided about whether shopping on e-commerce sites carries a privacy risk. The possibility of stealing both personal and account information has led to a hesitant attitude towards e-commerce applications.

It has been determined that the most effective of these risk types is financial risk. The reason for this can be explained by the importance consumers give to money. Money is the medium of exchange necessary to meet the basic and special needs of people. So, money is indispensable for people. For this reason, consumers perceive the behaviour of shopping from e-commerce sites, which they see as one of the behaviours that are likely to lose their money, as risky.

Respondents have a positive tendency towards innovations in e-commerce sites, as they perceive shopping on e-commerce sites as pleasant and think that they have better shopping opportunities. In addition, it has been determined that respondents tend to use innovative applications that they think will benefit them, not every application that e-commerce sites

perform, and when they have to choose between innovative e-commerce sites and non-innovative e-commerce sites, they prefer the innovative e-commerce site. However, it has been determined that innovative sites tend to be undecided between the two types of commerce because they are not sufficiently satisfied with the security of their applications.

Respondents think that when the authorities who own an e-commerce site want to develop an innovative application regarding both the site and the shopping transactions carried out on the site, not only their own but also their customers' views and opinions should be taken into account. It has been determined that taking into account the opinions and thoughts of customers is important and meaningful for e-commerce sites, and it is likely to be a worrying situation for customers when it is not taken into account.

Respondents think that shopping from e-commerce sites mostly helps consumers by making their work easier and saves time. Behind this positive opinion of the respondents is that both using e-commerce sites and shopping are simple, easy and fast, and that even after a long break, they can learn to shop easily and quickly.

The findings obtained as a result of testing the research model are as follows:

As a result of the research, it has been determined that the general perceived risk variable has a positive effect on the perceived risk types variable. This result shows that the increase in the financial, physical, performance, social, psychological, time and privacy risk levels perceived by the respondents from electronic commerce sites also increases the risk level they perceive in general.

It was concluded that the general perceived risk variable had a negative effect on the perceived benefits. This result shows that as the risk generally perceived by consumers shopping from e-commerce sites increases, their perceived benefits will decrease.

6. Limitations and Recommendations

In line with the results obtained from the study, the following recommendations for practical implications can be made:

The research has come to the conclusion that consumers who shopped with traditional commerce method and operators selling products or services in the past have the opposite view towards e-commerce sites. As a result of the research, there is a positive opinion about shopping on e-commerce sites in general. This situation contains reliable information at a level that will eliminate the concerns of e-commerce owners, potential people who are considering opening an e-commerce site in the future, and consumers who are afraid to shop from electronic commerce sites.

The research reveals important information about the perceived risk in e-commerce sites. Azerbaijani consumers perceive financial, privacy, performance, time, psychological risks while online purchasing process which is negatively associated with their perceived benefit of purchasing from e-commerce. In the light of this information, it is thought that institutions should take actions to close these situations that they have not seen as incomplete or error until today. This foresight allows e-commerce site owners to look to the future with hope.

Whether it is the food industry, the clothing industry or the automobile industry, competition is at a high level today. In the years when the understanding of competition was at this level, companies had to produce innovative products, services, ideas or applications from rival companies by performing production activities at a level that would meet the requirements of the age, unlike the products or services produced by companies that they saw as competitors. For this reason, in line with the results of the research, it is recommended that companies

allocate a significant number of resources from their total budgets to innovation or innovative applications.

Due to the fact that technology is developing by accelerating every day and the understanding of competition is at a high level, the situation of constantly producing innovative products, services or applications for companies has become one of the basic strategies of today's businesses. For this reason, when companies introduce a new product or service to the market, they first need to reach opinion leaders, which we call innovative consumers. These opinion leaders consist of masses who have the power to spread the products or services of the companies whose innovations they like with the snowball effect. In addition, thanks to the feedback received from these masses, it is thought that businesses will have the ability to quickly eliminate the problems that may come in the way of future applications by obtaining quick feedback on the products or services they produce.

When companies propose a new product or service, they should inform both internal and external target audiences correctly and transparently. Misinformation will damage the image of both the institution and the product, which will naturally lead to a decrease in profit rates, which is the ultimate goal of businesses. For this reason, it is suggested that the communication department working in the institutions should be in symmetrical communication with their target audiences through their promotional activities.

It is thought that the research will attract the attention of e-business owners rather than consumers. Because as a result of this study, the view of consumers towards innovative applications in electronic commerce sites is revealed very clearly.

This research is equally important for the Azerbaijani government to boost online sales and the adoption of innovation in light of e-commerce adoption in the country. As it has been mentioned in the problem statement, current policies and laws are not enough to ensure the

security and privacy protection of online transactions. The findings of this research has also supported that Azerbaijani consumers observe financial and privacy risks while participating in online transaction in e-commerce sites. Therefore, legal authorities should take necessary actions to eliminate this situation and help both businesses and customers to adopt e-commerce without safety and security concerns.

In addition to being important for e-business owners, and legal authorities, the research is thought to contribute to the Azerbaijani literature as it includes both theoretical and practical phases. It can be said that it is a study that can lead researchers who want to work on consumer innovation, perceived risk and e-commerce in the coming years.

The limited situation of the research is that the survey is not carried out for a specific region or city, only 155 people participate, some of the surveys are filled face-to-face and some of them are filled by e-mail and social media. It is recommended to increase the number of subjects of the study in order to enable researchers who will conduct research in the future to reach more reliable results.

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Appendix:

Survey:



Survey Results - Measuring the Impact of Perceived Risk on Customer's Online Purchase

Intentions

Survey link: https://docs.google.com/forms/d/e/1FAIpQLSeCLqmLI3I-LjiJ-ce0x9SHBvHn0YvLtm11IaqCZBDmo8ErqA/viewform?usp=sf_link