REPUBLIC OF TÜRKİYE

ALTINBAŞ UNIVERSITY

Institute of Graduate Studies

Business Administration

DETERMINING THE IMPACT OF TRUST AND PERCEIVED RISK ON CONSUMERS' ONLINE SHOPPING BEHAVIOUR: A CASE ON TURKISH ONLINE MARKET

Rayyan Abdulaziz Mubarak Saleh BATAIS

Master's Thesis

Supervisor

Asst. Prof. Dr. Zeynep CINDIK

İstanbul, 2024

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The thesis titled DETERMINING THE IMPACT OF TRUST AND PERCEIVED RISK ON CONSUMERS' ONLINE SHOPPING BEHAVIOUR: A CASE ON TURKISH ONLINE MARKET prepared by RAYYAN ABDULAZIZ MUBARAK BATAIS and submitted on 23/01/2024 has been **accepted unanimously** for the degree of Master of Business Administration.

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I hereby declare that this thesis meets all format and submission requirements for a Master's thesis.

I hereby declare that all information/data presented in this graduation project has been obtained in full accordance with academic rules and ethical conduct. I also declare all unoriginal materials and conclusions have been cited in the text and all references mentioned in the Reference List have been cited in the text, and vice versa as required by the abovementioned rules and conduct.

Rayyan Abdulaziz Mubarak Saleh BATAIS

Signature

DEDICATION

To my family and friends, especially my mother (May Allah have mercy on her soul)....

ABSTRACT

DETERMINING THE IMPACT OF TRUST AND PERCEIVED RISK ON CONSUMERS' ONLINE SHOPPING BEHAVIOUR: A CASE ON TURKISH ONLINE MARKET

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Date: January/2024

Pages: 67

Online shopping has been increasing in demand and popularity ever since the pandemic struck in 2020 and since then, the e-commerce market started to boom especially in Türkiye. Consumers have become adept and familiar with the process of online shopping yet there are still variables that cause a hindrance which online retailers fail to notice. Taking past literature into consideration, there are two major factors that are essential to analyse online shopping behaviour, Trust and Perceived Risk. The objective of this study is to determine the effects of the factors Trust and Perceived Risk towards Online shopping Behaviour within the Turkish market while having Trust as a mediator factor. The universal sample for this study is the population of online users in Türkiye. The paper approaches the study using a quantitative method where a survey is used to collect data. The analysis is conducted using Structural Equation Method (SEM) to analyse the complex model and the results concluded that Trust has a positive effect on Online shopping behaviour while Perceived Risk has a negative effect towards Trust and online shopping behaviour.

Keywords: Online Shopping, Trust, Perceived Risk, Buying Behaviour, Turkish Market.

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ABBREVIATIONS

B2B	:	Business to Business
B2C	:	Business to Customer
CAGR	:	Compound Annual Growth Rate
CB	:	Covariance Based Structural Equation Modelling
C2B	:	Customer to Business
C2C	:	Customer to Customer
EDI	:	Electronic Data Interchange
ERP	:	Enterprise Resource Planning
IT	:	Information Technology
OSB	:	Online Shopping Behaviour
OT	:	Online Trust
PLS	:	Partial Least Square Structural Equation Modelling
PR	:	Perceived Risk
SL	:	Standardized Factor Loading
TAM	:	Technology Acceptance Model
TPB	:	Theory of Planned Behaviour

1. INTRODUCTION

The internet has not only brought us closer to one another from far away, but provided knowledge, entertainment and even opportunity to many aspects of our social lives all mostly thanks to social media (Azami, 2019). Social media is having a significant impact on people's lives, even in developing regions. This is due to a number of factors, including the increasing affordability of smartphones and internet access, the growing popularity of social media platforms, and the rise of social commerce. As a result, businesses have developed a social media department where their objective is to focus on customer attraction and product advertisement. Social media is also helping to create a more personalized shopping experience for customers and to build trust and brand loyalty with customers (Chaturvedi, et al., 2016).

One of the many things the internet has brough, Online shopping has been booming within the recent decade because it is more convenient and affordable than traditional shopping. This is because online shoppers can browse and compare products from a wider range of retailers without having to leave their homes. They can also often find better deals on products online than in stores. (Vasic, et al., 2019). According to (Ling, et al., 2011), the majority of customers use the internet to perform their banking, investing, and shopping activities. Users visit an online storefront to make purchases of clothing, cosmetics, electronics, vacation packages, hotels, and other items on specific websites where these activities are carried out. The reliability of businesses, website technology, and online security and privacy are all cited by Chen and Barnes (2007) as factors in why individuals do not make online purchases of products and services. While a study by El-Ansary (2013), the variables that affect consumers' web-based buying behaviour include demographics, trust, e-administration quality, attitude toward online shopping, and e-administration attitude (Bahl & Kesharwani, 2020).

This thesis aims to identify the key factors that motivate Turkish consumers to shop online, with a focus on trust and perceived risk. The objective of this study has help propose a model to explain the underlying motivations of online consumers and to analyse the key factors that contribute to their increased willingness to shop online.

1.1 BACKGROUND OF THE STUDY

The internet has revolutionized many aspects of human life, including shopping. It has become increasingly popular in recent years due to its ease of use, vast amount of information, frequent updates, and declining cost (Azami, 2019). E-commerce, or online shopping, has emerged as a major retail channel in the wake of the internet's explosive growth in the 1990s. It offers consumers a convenient and affordable way to shop, saving them time and money. The interactive elements of the internet, such as search engines, product reviews, and social media, are influential towards the development and growth of e-commerce. These elements allow consumers to easily find and compare products, research retailers, and share their shopping experiences with others (O'Cass & Fenech, 2003). The retail industry has been significantly affected by the e-commerce market. It has forced traditional retailers to adapt their business models to meet the needs of online shoppers. E-commerce has also created new opportunities for businesses of all sizes, regardless of their location (Huang, et al., 2007).

Online marketing allows sellers to bypass intermediaries, such as wholesalers and retailers, and sell their products directly to consumers. This means that sellers can reach a wider audience and potentially make more money by selling their products online without having to go through middlemen (Azami, 2019). Businesses can also reduce their costs by imploring e-commerce applications which can also increase revenue. For example, with enterprise resource planning or (ERP), businesses can automate tasks to reduce the fixed and variable costs. Moreover, using Electronic Data Interchange (EDI) when operating with Business to Customer (B2C), or Business to Business (B2B) to reduce variable manufacturing and delivery costs. Additionally, these services can assist businesses increase productivity and enhance performance. Information technology (IT) and e-commerce are closely related, and IT may assist companies in raising the capability of their e-commerce businesses. (Walizad, 2022).

1.2 PROBLEM STATEMENT

Nowadays, the market of e-commerce or online shopping is increasing daily, however, there are still many concerns from consumers when online shopping mostly due to trust and perceived risk. According to (Sevim & Hall, 2014), Trust is an essential factor when it comes to online shopping, websites or applications must express a certain connection or provide faith and loyalty towards their consumers so that when they purchase an item, they can feel assured that their purchases will meet expectations and be provided to them safely. Online customers also have a significant concern about perceived risk, as they may worry about things like fraud, shipment delays, and product quality (Arshad, et al., 2015).

To boost online shopping adoption and enhance the online shopping experience, it is critical to comprehend how consumers' perceptions of risk and trust influence their online purchasing behaviour. For the Turkish setting, there hasn't been much research done on this subject.

This study intends to fill this vacuum in the literature by analysing how customers' online buying behaviour in the Turkish online market is influenced by perceived risk and trust. Additionally, the study will investigate how customer satisfaction mediates the relationship between perceived risk, trust, and online purchase behaviour.

With that being mentioned, the outcome this research will aim to provide, offers to positively influence Turkish consumers online shopping behaviour. Such information can be used by businesses to refocus their marketing objectives towards the main concerns shown by their target audience.

1.3 RESEARCH QUESTIONS

The study will focus on the role of trust and perceived risk on online shopping behavior. The following research questions will be addressed:

i. How does the level of trust effect Turkish consumers' online shopping behaviour?

ii. What is the effect of perceived Risk on Trust?

iii. What is the effect of Perceived Risk on online shopping behaviour?

iv. Does trust mediate the relationship between perceived risk and online shopping behaviour?

1.4 RESEARCH OBJECTIVE

i. To examine the effect of trust on Turkish consumers' online shopping behaviour.

ii. To investigate the effects of perceived risk on Trust.

iii. To analyse the effect of perceived risks on online shopping behaviour.

iv. To evaluate the mediation effect of trust between perceived risk and online shopping behaviour.

1.5 SIGNIFICANCE OF THE STUDY

Based on (Dierks, 2023), it is forecasted that the Türkiye's e-commerce market is to reach 140 billion USD dollars approximately which represents a compound annual growth rate from 2021 of 27.6%. Currently, e-commerce market in Türkiye values at 42.9 billion US dollars, in contrast towards regular retail shopping, which is 108 billion US dollars, the e-market is slowly yet steadily growing and becoming a major influence in Türkiyes' economy (Dierks, 2023). However, based on previous research, trust and perceived risks are two important factors when it comes to online shopping and this study aims to determine the impact of trust and perceived risk towards online shopping behaviour in the Turkish online market (Arshad, et al., 2015). The findings of this study will be significant for a variety of stakeholders, including businesses, policymakers, and consumers.

Businesses and online retailers can utilize these results to work on more effective online marketing strategies and to improve the online shopping experience for consumers. To take in a scenario, businesses can build strategies to address concerns that reflect towards their trust and perceived risk. When identifying these factors businesses can improve their trust with consumers and decrease the perceived risk expectations that consumers may feel when browsing their sites or applications (özsürünç, 2017). Moreover, not only businesses can benefit from the research results, but also legislatures. Legislators can run these results and help maintain the e-commerce market by identifying or developing policies and regulations to promote the online market for the Turkish consumers, this can be done by identifying any barriers that can be seen as an obstacle and remove or modify them to be more compromising for consumers and online retailers. This includes protecting consumers form potential online frauds to help improve trust and regulate perceived risks.

In the case of consumers, they are able to use the results to help build more informed decisions when online shopping, this can be helping them understand the risks related with online shopping and how they can help prevent them, moreover, they can identify what influences their trust towards certain online retailers to see how other online retailers and if there is a certain or positive relation they can connect with (Turkmen, 2020).

1.6 STRUCTURE OF THE STUDY

This study focuses and investigates on the impact and relationship of Trust and perceived risk on online shopping behaviour with a focus on the Turkish market. The Structure of the study is as follows.

The introduction is done to provide a background on the study and what are the problems considered and identified for this research to tackle on. This first chapter of the study also shows the potential significance of the study when implemented.

In the literature review, multiple studies have been reviewed in terms of Online shopping behaviour, The factors affecting online shopping in general and in Türkiye and why some factors are seen to be more influential in compared to other factors. The studies helped create a better understanding and a foundation for this research model.

The research methodology approached was based on how the past literature have approached this study and what data techniques and tools were used to assist in collecting and analysing the data. From there, the results are then analysed using statistical software applications and specific statistical model based on the data sample size and normality.

Finally, after collecting, analysing and interpretating the data, in the discussion and limitation section, the results are then discussed based on the study’s findings and how it compares with the past literature that have been previously reviewed and what differentiates this study with the other literature. The obstacles faced while working on this study is also discussed as a means to express better options when tackling a similar study for future research. The study is then concluded whether the research objectives were met and how the research can have an impact towards today’s society.

2. THEORETICAL FRAMEWORK (LITERATURE REVIEW)

A literature review has been conducted based on research related to this study and certain topics have been taken out to review and analyse for further discussions and relate to the current study. This includes online shopping, factors identified which literature seem to be essential and variables that is core to this study in general.

2.1 TECHNOLOGY ACCEPTANCE MODEL

An extension of the theory of reasoned action or (TRA) the Technology Acceptance model (TAM) has been adapted. TRA was a framework to measure the output of computer acceptance of consumers by intention based on the influence of perceived ease of use and perceived usefulness (Davis, 1989). However according to the developer of the model Davis Fred (Davis, 1989) (Davis, et al., 1989), perceived ease of use did not have a strong effect on purchase intention while perceived usefulness has a strong effect (Davis, 1985). Based on these attitude effects, the TAM was then modified to measure the intention as a mediator to attain a better measurement of acceptance on computer use, thus making it a leading contender to implement for research studies compared to other models due to its robust and more close nature (Zabukovek, et al., 2020). According to (Davis, et al., 1989) the complexities that exist in the decision-making process towards the personal usage of computer are successfully measured based on attitudes an intention towards technology learning. According to a literature study done by (Ling, et al., 2011), TAM has two main elements, Perceived ease of use and perceived usefulness, and they both fall under the variable of perceived technology. From the study (Zabukovek, et al., 2020) (Davis, et al., 1989) state that the two variables perceived ease of use and perceived usefulness have a positive effect towards attitude towards new technology and that also positively effects the intention which then translates to its actual usage of the technology. (Zabukovek, et al., 2020) states that the essential objective of TAM is to trace the relation between the external factors with the internal factors including beliefs, attitude of use and the intentions.

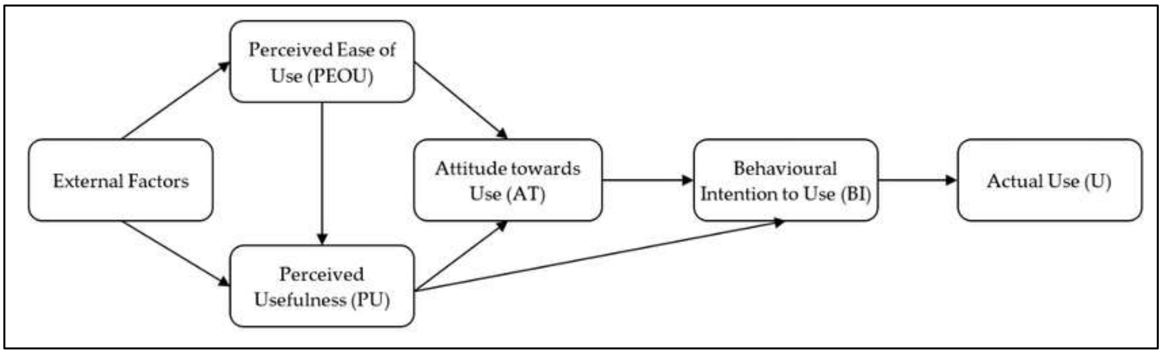

Figure 2.1: Technology Acceptance Model **(**Davis**,** et al**.,** 1989**).**

The study by (Li, et al., 2007) developed a TAM model to measure the purchasing intention of consumers when online shopping, they believed that Perceived ease of use and Perceived usefulness were important for analyzing web quality, while (WR & Ariyanti, 2017) developed a TAM model based on perceived technology, perceived risk, perceived reputation and e-commerce knowledge with online trust as a mediator. Their study explained that Perceived technology was derived from TAM. However, the empirical evidence by (Azami, 2019) believed that habits, external factors, and motivations affect consumers online shopping, this includes social factors and consumers shopping habits.

Similarly to the studies (Azami, 2019) (Bahl & Kesharwani, 2020) the use of TAM model can help measure the acceptance and usage behaviour towards online shopping however the limited scope of using perceived ease of use and perceived usefulness will neglect other major factors that need to be identified in order to measure online shopping behaviour. As such, they developed a model with social factors as the variable measurements to analyze the technological usage derived from the TAM model which is online buying behaviour Therefore, based on the reviews of past literature, the usage of their models can help provide a clear effect based on the intentions and attitudes, in terms of this study, the focus is on the acceptance and usage of online shopping in the Turkish online market based on other variable influences.

2.2 THEORY OF PLANNED BEHAVIOUR

Unlike the TAM, the Theory of Planned Behavior (TPB) is an extended version of the TRA. While TAM focuses on the internal variables influencing the computer or technological usage, TPB focuses on the internal and external variables. According to (Ajzen, 1991), TPB though is more complex, provides a better understanding on behavioral model based on whether an individual performs a certain behaviour and control over that behaviour. Accordingly, assumed that behavioral beliefs are influenced by attitude while control beliefs are based on the foundation of behavioral control (Lim, et al., 2016). The attitudes are viewed on how individuals express themselves towards obtaining positive behaviour (Azami, 2019). The perspective of online shopping is reviewed by the effect of individuals perception of control and their behaviors that affect their decision making towards the ability of consumption.

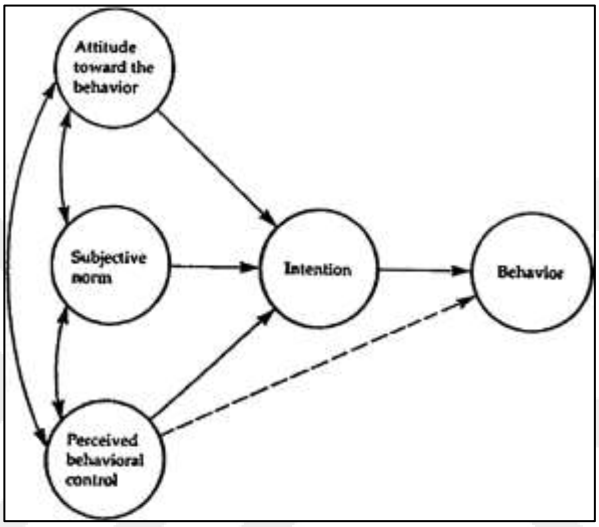

Figure 2.2: Theory of Planned Behaviour Model (Ajzen, 1991).

From Figure 2.2 a visual representation of the theory planned behaviour by (Ajzen, 1991) the intention is the element for an individual's planned behaviour. The concept of intention is to capture the individual's motivation, that is the attitude, subjective norm, and behavioral control in order to perform a certain behaviour. As such, with strong intentions, the more willing the individual is to perform the behaviour, nevertheless, the individual must also have a certain control over that behaviour.

In reference to empirical findings to predict an individual's behaviour, (Ajzen, 1991) (Ajzen & Fishbein, 1980) stated that several conditions need to be met. The first condition is that perceived behavioral control must be corresponded to behaviour to be predicted. For example, in this study the behaviour that is to be measured or predicted is "online shopping in the Turkish market" therefore the intentions that are needed to be measured is the intention to "online shop in the Turkish market."

The research by (Pappas, 2015), reviewed that TPB is considered to be one of the commonly used models due to its ability of measuring and predicting the behaviour of individuals in different fields and that includes online shopping. According to (Al-Lozi, 2011) the TPB model states that the activity with attitude is influenced by behavioral beliefs which is known as the inner beliefs of an individual regarding the potential consequences of the particular activity. Therefore, according to (Pappas, 2015) those beliefs are based on the individuals experience, background, characteristics, and personality traits. Based on the (Ajzen, 1991) (Ajzen & Fishbein, 1980) and their statement on TPB, the study (Al-Debei, et al., 2015) developed the research model to measure the attitudes towards online shopping by measuring the effects of three behavioral beliefs, Perceived benefits, trust and web quality as they aim to achieve to cover the personal, psychological and technological needs of the consumer.

Towards the relation of this study, TPB also incorporates the mediation mechanism since attitude, subjective norm and perceived behavioral control are factors that are mediators between independent variables and the intention to engage and accept a technological behaviour. Unlike TAM, TPB allows the incorporation of other variables that are considered to be essential towards the assessment of online shopping behaviour such as Trust and Perceived Risk. Therefore, the merge of TAM and TPB to incorporate a more flexible model can help interplay the other variables with the focus on the technological behaviour acceptance factor which online shopping behaviour. Such methods have been incorporated by studies such as (Al-Debei, et al., 2015) (Azami, 2019) (Bahl & Kesharwani, 2020) (Lim, et al., 2016) and (Sevim & Hall, 2014) developed their models using merged theories of TPB and TAM.

2.3 ONLINE SHOPPING BEHAVIOUR

The concept of online shopping can be defined as the activity of buying and selling a product or service from online retailers through the internet (Hamli & Sobaih, 2023). The transformation and rise of the internet have changed today’s society when shopping. With the advancement of technology, consumers can use smartphones, tablets or laptops to make purchases on e-commerce websites or applications (Lim, et al., 2016). With the ability to purchase products and services in a much more convenient and efficient manner, online shopping has become increasingly popular recently. With a simple flick over a screen, consumers can now browse through products and shop without leaving their comfort environment and they can also find better deals and offers when online shopping. (Walizad, 2022). Online shopping has also made it easier to find products that are not available locally.

Consumers have the ability to buy and sell products across many countries, which has expanded their choices and made shopping more enjoyable, thus allowing the retail industry to be heavily affected by the internet. Online shopping has become an essential part of our lives, and it is likely to continue to grow in popularity in the future (Walizad, 2022). Online shopping has become a demand from consumers where it has become an issue for management to keep up with online rotation to keep up with the consumers demand. With the change of effect in demand where it changes from physical environment to the internet medium management teams are finding it difficult to maintain the constant changes and increase in demand (Azami, 2019).

There are many terms that can be implemented to refer e-commerce which includes online shopping. (Pandey & Parmar, 2021). What differentiates online stores with physical retailers is that they provide a more efficient method to shop, no needless browsing in large malls, no reason to commute to certain places for certain stores and no need to wait in long queues. Online stores are accessible and available 24/7 anywhere. (Hamli & Sobaih, 2023). Product information and services are offered to clients. To aid customers in evaluating and choosing from a range of goods and services, a detailed yet user friendly of digital resources are at their disposal for customers to look through. (Tariq, et al., 2016).

The study (Zhang & Yu, 2020) explained how online shopping, just how beneficial it is, is also harmful. They expressed is as “a double-edged sword”. The study states that even when an individual buys its wanted products, there will be obstacles they will face. For instance, consumers need to know a minimum of information about their intended product choice as a poor understanding will lead to inconsistent buying experience deeming most product purchases useless. Moreover, products require a base of reference where consumers refer to before making the purchase of that particular product.

2.3.1 Consumer Buying-Behaviour

According to (Shih, et al., 2015) consumer behaviour is the process where an individual engages in purchasing of goods through a social and mental process. Based on the decisions towards a consumer’s purchasing preference, each individual has different purchasing habits compared to others. The study (Muhammad, et al., 2015) stated that the expression and emotions of someone before, during and after the purchase of a product or service is defined as consumer purchasing. According to (Walizad, 2022) the ideology of buying behaviour is that it defines what an individual or consumer buys, why, where and how.

The concept of the buying behaviour is what the individual or consumers mentally thinks before their purchasing decision; what do they want, from where will they purchase, how will they purchase, what is the requirements needed to purchase, what are the payment transaction options and is the entire purchasing process worth it. From there, the result is the product, type of product, purchase time and choice of e-retailer. There are different stages of how a consumer investigates the buying behaviour and according to (Oana, 2020) the general categories that are under the classification of consumer behaviour are threefold; Psychological, Sociological and Economic. The psychological approach is based on how consumers react or are stimulated by the online buying activity, this includes studying and learning from the experience. The sociological approach is based on how consumer react to the general society and its influence, this includes of peer pressure or social media influence that may affect a consumer's buying behaviour. Finally, is the economic approach; where it is based on how the consumers budget is set based on certain bids and if the retailers provide the demanded product or service within that certain range.

According to the study (Walizad, 2022) consumer buying behaviour are affected according to certain features expressed by the consumer, this includes internet awareness, socioeconomic factors and psychological factors. The study (Rahman, et al., 2018) stated that retailers have become more creative when attracting consumers with more effective advertising and marketing strategies, consumers buying behaviour are easily swayed. The study (Lakshmi, 2016) state that consumer buying behaviour can be assessed based on four different characteristics, they are personal; this includes the general demographic information of the individual (age, gender, income etc.), psychological; this focuses on the motivation behind the purchase, cultural; this characteristics focuses on the social classes of the consumer, lower class will have lower intentions to engage in online shopping compared to higher classes. Finally, is social characteristics; this characteristics focuses on the individuals point of reference that influenced them to engage in online shopping.

2.4 INTERNET USE IN TÜRKIYE

Online shopping has become a popular way to buy goods and services in Türkiye, as it has in the rest of the world. This is due to the growth of large Turkish companies in both Türkiye and foreign countries, as well as the many businesses that want to take advantage of this growing market (Walizad, 2022). In other words, the popularity of online shopping in Türkiye is being driven by the growth of both Turkish and foreign companies that are offering online shopping services. This is creating a competitive market, which is driving down prices and improving the quality of services for Turkish consumers.

With the increase in demand of internet usage around Türkiye, the advancement of e-commerce improved massively and has simplified the usage and awareness of the online market. (Mohapatra 2013, p.8) (Yilmaz, 2021). According to an online article by (Şahin, 2021) the COVID-19 pandemic has changed the way people shop around the world, and Türkiye is no exception. Online shopping in Türkiye experienced a significant surge in 2020, increasing by 85%.

2.4.1 Problems Faced When Online Shopping in Türkiye

The study (Walizad, 2022) highlighted the common issues when e-commerce activities are carried out alongside a study done by the non-governmental organization, UTIKAD, the largest in Türkiye for logistics industry (Bafra, 2019). These challenges were:

i. Companies’ infrastructures

ii. Lack of Trust

iii. Sales and Marketing

iv. Payment Systems

v. Domestic and International e-commerce logistics

Though after 2020 and the pandemic became a global concern, online shopping was the leading activity worldwide, forcing many companies to focus on adapting towards the technological change. However, this does not negate all the problems previously mentioned Technology has developed rapidly and is still growing and companies need to adapt to these changes to maintain their market seating. From block-chain to drone delivery services, there are many approaches that are being developed to improve customer satisfaction for online shopping. Türkiye has a strong potential for their e-commerce market local and international. With effort and research, they're able to develop new approaches and help grow the e-commerce market in Türkiye to help contribute towards the country's economy.

2.5 FACTORS AFFECTING ONLINE SHOPPING BEHAVIOUR

Online shopping has been around since late 1979 and over the years with the advancement of technology and adaptability of companies towards online shopping, consumers behaviours have changed throughout those years (Azami, 2019). Marketing research for companies in general around the globe identified various factors the affect consumers behaviour when online shopping, thus implementing changes into their online retail stores. According to a study by (Al-Debei, et al., 2015), they have expressed that Perceived risk, web Quality and electronic word of mouth were the main factors that effected consumers online shopping behaviour. They expressed that consumers expect decent and smooth web quality when browsing and are influenced through e-WOM, which means that any feedback from users shared online is influential towards new consumers buying behaviour. Since the study was focused on Jordanian internet users, the factors do not justify the complete study due to its limited sample size. The study (Li, et al., 2007) identified the factors of Perceived ease of use, Perceived risk, perceived reputation, and e-commerce knowledge with Trust as the mediator to be the main factors that affect purchase intention. The study was conducted in 2007 therefore the factor concerns from the consumers may reduce over time, however they are still necessary to not be overlooked. They argued that easy to use websites and basic knowledge of internet browsing, which presently is not believed to be a main concern mainly due to the impact of internet and social media into today's everyday routine. However, what's mentioned that is important for consumers is perceived risk which was mentioned as well with (Arshad, et al., 2015) (Bahl & Kesharwani, 2020) (Chaturvedi, et al., 2016), these studies also mentioned that Perceived risk was an essential factor when determining what affects online shopping behaviour. The study by (Pappas, 2015) approached this research in a different method where they identified the factors affecting online shopping behaviour based on product and web-vendor. Therefore, the factors they identified are Product Marketing strategies and Web-vendor marketing strategies; Product quality risk and web-vendor quality risk. This method is repeated for Trust as well. The study also included Product price and web-vendor security risks. The study has however analysed their data based on holidaymakers from Manchester, a very narrowed demographic. Yet, the study concluded that marketing strategies and trust are two important factors that web-vendors should focus on to improve their sales. Similarly (Zhang & Yu, 2020) have conducted a similar research in China where they proposed a model with Perceived risk as an independent variable and Trust and negative report as two mediators to see the relation with consumers cross-platform buying behaviour; however they separated Perceived risk as two separate factors; consumer perception of product risk and consumer perception of service risk. However, based on their study, they have viewed Perceived risk as a subjective variable, therefore they split it into two objective variables in respect to consumers perception. Moreover, an important note realized by (Zhang & Yu, 2020) (Bahl & Kesharwani, 2020) (Chaturvedi, et al., 2016) and (WR & Ariyanti, 2017) is that when investigating perceived risk, trust is also needed to be investigated as they are both equally important but a particular issue is that the studies believed within the academic community there are two different views on the relationship between Perceived risk and trust; First view is that perceived risk and trust both affect buying behaviour independently while the second view is that perceived risk is the prerequisite of trust (Zhang & Yu, 2020). According to (Munikrishnan, et al., 2023) they followed a similar approach with (Pappas, 2015) of factors affecting online shopping behaviour where perceived risk is considered an essential factor as an umbrella for sub-categories including financial risk, time risk, product risk and psychological risk. The study use these factors to narrow down the specific risk that affects consumers online shopping behaviour with Trust as a mediating factor.

Through investigation of previous research, there are many factors that have been considered that affect online shopping behaviour, however, the two main factors that are essential and common through different demographic, yet a gap within this research demographic is perceived risk and trust.

2.6 TRUST

Trust is a crucial factor in determining the success of an online website and positively influencing consumer behavior in online transactions (WR & Ariyanti, 2017). A common behaviour consumers make is to judge a website or application based on how well they can put their trust on them which leads to a potential positive relation with that website and a lack of trust is one of the most commonly mentioned reason when consumers avoid to shop online (Flavian & Guinaliu, 2006). The study identifies trust as an element of online customer buyer behavior that is predominantly considered by retailers and marketers, based on (Kim, et al., 2008). The empirical research findings suggest that trust is the most significantly affected element by social media, followed by perceived risk and information seeking behaviour, in terms of their impact on online apparel buying behaviour in Rajasthan.

According to (Ling, et al., 2011) Online shopping involves unique risks, such as financial data exposure, product mismatch, and a sense of powerlessness due to the lack of physical interaction between the buyer and the seller. These risks can deter consumers from shopping online.

The importance of online trust is that it can help reduce such risks and promote consumers to shop online (Flavian & Guinaliu, 2006). For instance, consumers that built online trust with certain online retailers are more assured and confident when purchasing their products and they are sure that their private and financial data is kept secure (Monsuwe, et al., 2004). Based on the study done by (Kim, et al., 2008), online trust is the significant variable that can judge online shopping behaviour proving to suggest that online businesses can increase their sales by building and improving their trust with their customers. Another study shows comparable results, according to (McKnight, et al., 2002) they expressed that trust is the significant factor when online shopping. Numerous studies have revealed that when customers trust online retailers, they are more inclined to purchase online. This is mainly due to the reduced uncertainty and potential risks which are reduced by Trust, the two major obstacles when online shopping. (WR & Ariyanti, 2017).

When it comes to trust, there are two primary elements: trusting intent and trusting beliefs. To have a trusting intention is to be willing to put your trust in other people when necessary. While trusting beliefs is believing goodness, competence, honesty, or predictability of another person under certain circumstances. (WR & Ariyanti, 2017).

Researchers (Al-Debei, et al., 2015) have studied and their results shows that there is a positive effect of trust towards online shopping behavior, thus they concluded that trust is a significant variable when it comes to online purchase intention. While (Bahl & Kesharwani,

2020) addressed that trust acts as a mediator when it comes to analyzing the effect from perceived risk towards online purchase intention. (Li, et al., 2007) found that trust is a more key factor in online shopping behavior than perceived risk. (Adwan, et al., 2021) found that trust is a significant predictor of online loyalty. All in all, research proves that trust is a crucial component for online retailers overall. Online retailers and businesses may boost sales and profitability by developing trust with customers.

2.7 PERCEIVED RISK

Customers experience perceived risk throughout their online shopping experience as a result of making poor or inappropriate judgments based on their subjective evaluations during the decision-making process. Perceived risk among consumers may also be described as their perception of the unknown and possible negative consequences of the e-transaction or online payments (WR & Ariyanti, 2017). Security and privacy risks are the two categories into which perceived risk in online buying may be divided. These risks are thought to predominate in the online retailing environment. According to (Chaturvedi, et al., 2016), they acknowledged the significance of perceived risk in the context of consumer online buying behavior. The study highlights the importance of retailers and marketers considering perceived risk as an element of online customer buyer behavior. Security risk refers to the safety of computers and financial information provided by the consumer during online transactions. The capacity of customers to regulate the sharing of information and the participation of third parties during online transactions is known as privacy risk. The study's conclusions are in line with other research that highlights the significance of perceived risk in online purchasing behavior.

Retailers and marketers should take into account perceived risk when designing their social media promotions to build trust and reduce risk perceptions among online consumers. (Alkibay & Demirgunes, 2016) This scenario also exists in the general context of e-commerce. (Goldsmith & Flynn, 2004). According to marketing-related literature (Cox 1967; Jacoby and Kaplan 1972), risk perception may be examined in terms of vulnerability and expected results. The focus of the analysis of the expected consequences was "misfortune or loss" (Cox 1967), but further research has led to the coordinated notion that alludes to risk's likelihood and importance (Bahl & Kesharwani, 2020).

Table 2.1: Types of Perceived Risks in Context of Online Shopping.

No.	*Risks*
1	Financial Risk
2	Performance Risk
3	Physical Risk
4	Social Risk
5	Convenience/Time Risk
6	Psychological Risk
7	Source credibility Risk
8	Privacy Risk

(Retrieved from (Bahl & Kesharwani, 2020))

2.8 PERCEIVED RISK AND ITS RELATIONSHIP WITH TRUST

The measurement of risk can be investigated through different mediums, financial risk, security risk, product risk and so on. However, the main perception of risk according to Cunnigham (1967) is perceived risk as for tis identification and influence on consumers decision making. The study (Bach, et al., 2020) expressed that Trust is highly close with the perception of risk and on consumers purchasing behaviour because perceived risk is the antecedent of Trust. (Arshad, et al., 2015) and (WR & Ariyanti, 2017) also provided similar results that when risk reduces, trust increases in terms of online shopping. (Bach, et al., 2020) have highlighted that Trust and the consumers control are proportional to one another, this includes their expectations and vulnerability towards this experience. When in comparison to the traditional shopping experience, online shoppers have less assurance for product quality and payment safety, also, if an issue is faced for the online consumer, online retailers can attribute any problem to be a technical issue which can cause the consumer to not be able obtain a refund or return. With such problems, the engagement with online shopping is taken more seriously and cautious, therefore when perceived risk is present, trust is also affected (Li, et al.). According to (Ling, et al., 2011) Online trust can reduce consumers' perceived risks, as trust mitigates uncertainty and reduces the negative consequences of risk. This is important because perceived risk is a major barrier to online shopping. There is a strong body of research that supports this relationship. For example, (Bahl & Kesharwani, 2020), and (Chaturvedi, et al., 2016) have researched and addressed that trust is a significant predictor of perceived risk and they also found that initial trust in e-commerce is positively correlated with perceived risk. What has been acknowledged is that the relationship with trust reduces uncertainty (Vasic, et al., 2019). When there is a trustworthy relationship between a consumer and an online retailer, the consumer is more confident on their purchases and that the retailer will deliver as agreed, moreover, all essential information will be kept private and hidden reducing the premonition of perceived risks when online shopping. Another possibility is that perceived danger has less of a negative impact when people are trusted. Consumers are less likely to be concerned about the risk if they believe that the implications of a poor outcome, such fraud or unsatisfied products, are not as serious. Trust has the ability to help businesses and consumers reduce perceived risks by providing a sense of security for consumers and a responsibility and duty from the business (Hamli & Sobaih, 2023). The research points to a significant role for internet trust in lowering consumers' risk perceptions. This is significant since one of the main obstacles to internet purchasing is perceived risk. Online retailers may increase the likelihood that customers would shop online and make more purchases of goods and services by fostering trust.

2.9 PERCEIVED RISK AND ITS RELATIONSHIP WITH ONLINE SHOPPING BEAHVIOUR

The Study (Chaturvedi, et al., 2016) found that perceived risk is one of the principal factors that have an impact on consumers online shopping behaviour. According to (WR & Ariyanti, 2017) a study was conducted based on e-commerce and the results show that 87% of the consumers are concerned about privacy and security when engaging in online activities. The study (Chaturvedi, et al., 2016) also identified that Perceived risk and trust both are the two main factors that influence consumers online shopping behaviour. The environment of online shopping is vast, and consumers are open to many potential threats from fraud to counterfeit products and identity theft. These attributes of perceived risk highlight how the internet can be viewed and affect the consumer’s experience. Therefore, perceived risk is a significant behaviour for consumers to hold upon online shopping. This relation differs from certain demographics as studies such as (Kim, et al., 2008) and (Li, et al., 2007) provided that frequent users of online shopping are not influenced by perceived risks compared to newer users similarly that different countries are more cautious compared to other countries depending on the technological advancement and governmental support towards e-commerce activities. This relationship is necessary and important to analyze, and, in this study, it will be an important factor towards the focus on the Turkish market.

2.10 TRUST AND ITS RELATIONSHIP WITH ONLINE SHOPPING BEHAVIOUR

Multiple studies have suggested and proven that Trust is pinnacle towards online shopping (Alkibay & Demirgunes, 2016) (Li, et al., 2007). Trust is needed when browsing, purchasing, and providing personal information from the consumer to the retailer (Ghouri, et al., 2017). Moreover, the study (WR & Ariyanti, 2017) highlighted that with strong trust, it can help improve customer satisfaction and retention. When it comes to online shopping, consumers need to build a higher level of trust because in comparison to shopping physically, consumers are more likely to be defrauded and are more vulnerable to other illegal or unethical behaviors. For online retailers to obtain a strong trust with their consumers, they need to aim to develop and improve their reputation, customer service and protect customer privacy. According to (Ribeiro, et al., 2023) trust is essential for online shopping and one of its main elements is that it acts as a mediator for other factors such as risk and security thus helps improve customer decision when online shopping. Trust is a flexible concept that controls the e-commerce experience. As mentioned in the study by (Li, et al., 2007) with the consumers' willingness to buy online, it is contingent with the consumers attitude towards the online retailer. Research (Chaturvedi, et al., 2016) (Al-Debei, et al., 2015) (Mesatania, 2022) have also aligned regarding the relation of Trust and Online shopping behaviour with (Li, et al., 2007) (WR & Ariyanti, 2017) that Trust is a key factor when it comes to the consumers online shopping behaviour, strong trust reduces the consumers concern shopping engagement.

3. METHODOLOGY

3.1 AIM OF THE STUDY

The aim of the study is to investigate the impact of trust and perceived risk on online shopping behaviour in the Turkish market.

3.2 RESEARCH METHODOLOGY

The methodology of the study is crucial as it is the centre of the entire study aiming to provide scientific results to answer the objectives of the investigation. (Al-Debei, et al., 2015). The respondents' behavioural approach, which encompasses their expectations, observations, reality knowledge, supporting data, and personal opinions, may be summed up using the analytical parameters. This study focuses on the factors affecting online shopping within the Turkish online. The primary aims of this study are to determine the effects of trust and perceived risks towards online shopping behaviour (Hamli & Sobaih, 2023). Businesses will gain a thorough grasp of customer preferences from the research's findings, which they can use to improve their online market, develop sales strategies, and maintain a competitive advantage in the e-commerce industry. A quantitative technique and survey were used in the research to collect the data.

3.3 RESEARCH HYPOTHESIS

From the research study the following hypothesis have been developed.

$H_0 1$: *Trust has a positive effect on online shopping behaviour.*

$H_0 2$: *Perceived risk has a negative effect on Trust.*

$H_0 3$: *Perceived risk has a negative effect on online shopping behaviour.*

$H_0 4$*: Trust mediates the relationship between perceived risk and online shopping behaviour.*

3.3.1 Trust and Online Shopping Behaviour

Trust is a positive predictor of online shopping behavior. This means that consumers who trust online retailers are more likely to shop online (Bahl & Kesharwani, 2020).

This relationship defines the following reasons. First, trust lessens fear about shopping online. Customers who have trust in online retailers are more likely to purchase and to be able to handle any issues that may come up (McCole, et al., 2010) Second, people are more likely to spend money online when they are trusted. Online shoppers are more inclined to make significant purchases when they have trust in the sellers. Third, customers who feel trusted are more inclined to try out new online merchants (Punyatoya, 2018). Even if they have never shopped at those stores before, customers who have trust in online retailers are less reluctant to try new stores. Thus, the first hypothesis is formulated.

$H_0 1 =$ Trust has a positive effect on Online Shopping behaviour.

3.3.2 Perceived Risk and Trust

The unpredictability and possible risk that customers associate with online shopping are known as perceived risk. It may be brought on by things like the inability to see things in person before buying them and the possibility of fraud. (Li, et al., 2007). Customers are less likely to trust online sellers when they believe there is a substantial danger involved in online purchase. This is so because trust is predicated on the idea that the other person is trustworthy and won't do them any harm. Customers are less inclined to trust an online store if they believe the retailer is untrustworthy or that doing business with them could hurt them. (Yang & Jun, 2002). Hence the second hypothesis is developed.

$H_0 2 =$ Perceived Risk has a negative effect on Trust.

3.3.3 Perceived Risk and Online Shopping Behaviour

Perceived risk has a negative impact on online shopping behavior. This means that consumers who perceive higher risk are less likely to shop online (Bahl & Kesharwani, 2020).

There are several reasons for this relationship. First, perceived risk can lead to anxiety and uncertainty about online shopping. Consumers who are worried about being scammed or about not receiving the products they ordered are less likely to shop online. Second, perceived risk can reduce consumers' willingness to spend money online (Featherman, et al., 2010). Consumers who are worried about losing money are less likely to make large purchases online. Third, perceived risk can make consumers more hesitant to try new online retailers. Consumers who have had bad experiences with online retailers in the past are more likely to perceive high risk when shopping with new retailers (Yang & Jun, 2002). Hence the third hypothesis is developed.

$H_0 3 =$ Perceived Risk has a negative effect on Online Shopping behaviour.

3.3.4 Trust as a Mediator

Trust mediates the relationship between perceived risk and online shopping behaviour. This means Trust can act as a bridge helping consumers overcome the obstacle being perceived risk.

Through past literature, there are many studies that have outlined that trust has a significant affect as a mediator. (Bahl & Kesharwani, 2020) (Alkibay & Demirgunes, 2016) (WR & Ariyanti, 2017) have shown that Trust partially mediates between Perceived Risk and Online shopping while (Ling, et al., 2011) shown that Trust moderates the effect of Perceived risk and technology with online purchase intention. (Karunasingha & Abeysekera, 2022) viewed trust as an intermediary variable such that trust has a positive effect on the dependent variable which is Online shopping behaviour and lessen the negative impact of the independent variable that is Perceived risk, on online shopping behavior. Hence the fourth hypothesis is developed:

$H_0 4$: Trust mediates the relationship between perceived risk and online shopping behaviour.

3.4 DATA COLLECTION

The study will use a self-administered questionnaire to collect primary and quantitative data. Questionnaires are a popular research method because they are versatile, cost-effective, and efficient. They can also be used to collect a wide range of data, including closed ended (e.g., multiple choice, Likert scale) and open-ended (e.g., short answer, essay) questions (Azami, 2019).

In this study, the questionnaire will be self-administered, meaning that participants will complete the questionnaire on their own. This is a common method of data collection for online surveys. Self-administered questionnaires are convenient for participants and can help to reduce researcher bias.

3.5 DATA SAMPLES

The Turkish internet users who are most inclined to purchase online will be the target audience for the survey. The only people asked to take part will be those who have experience in online shopping A convenient sample technique will be employed to determine which data points to examine. Based on a statistical source (OOSGA, 2023) there are 41.3 million online shoppers in Türkiye, making it the approximate universal sample for the study. Now, with the total population being identified as 41.3 million, the sample size is then calculated by using Fisher’s formula (Jung, 2013) adding a 95% confidence and a margin of error of 5% into the formula below, an estimated sample size of 385 respondents is found.

$$n(sample\ size) = \frac{z^2 \times p(1-p)}{e^2} \Big/ 1 + \left(\frac{z^2 \times p(1-p)}{e^2 N}\right) \tag{3.1}$$

$N(Population\ size) = 41.3\ million$
$e\ (margin\ of\ error) = 5\% \sim 0.05$
$P\ (Population\ proportion) = 50\% \sim 0.5$
$z\ (confidence\ level) = 95\% \sim 0.95$
$\boldsymbol{n}(\boldsymbol{sample\ size}) = \mathbf{385}$

3.6 DATA RATES

The survey was developed based on the origin model, which was formulated by past studies. The model was also modified to address the research gap within the study. For the survey to be made, references of the studies (Bahl & Kesharwani, 2020) (Li, et al., 2007) (Hamli & Sobaih, 2023) were used. The data reading will be using a Likert scale of a 1-5 reading with the measurements going from "strongly agree" as 5, “agree” as 4, “neutral” as 3, “disagree” as 2 and "strongly disagree" as 1.

Table 3.1: Variable Measurements.

Variable	Measurement	Reference
Perceived Risk	1. I just don't trust online retailers. 2. More risk compared with other ways of shopping. 3. Low security 4. Difference between the purchased product and the product delivered. 5. Low product quality 6. Uncertainty associated with Internet shopping	(Dowling & Staelin, 1994)
Trust	1. Online shopping websites are full of features to protect customers' personal information. 2. Products are delivered on time, as promised, by the e-commerce platform. 3. Products are carefully packed and intact when the buyer receives it. 4. If problems arise, I can expect to be treated fairly by online shops on the e-commerce platform	(Trinh, et al., 2021)
Online Shopping Behavior	1. I make purchases online through internet websites. 2. I use online websites or applications to make purchases. 3. I buy different products online. 4. I have made purchases by online shops on the e-commerce platforms in the past	(Lim, 2003)

3.7 DATA ANALYSIS

After the data has been collected, the results is analysed using SmartPLS 4, a software application design for Partial least Square equation modelling or PLS-SEM. PLS-SEM is a well suited method for this study as it is robust, flexible and able to analyse complex relationships between latent variables which in this study are Trust, Perceived Risk and online shopping behaviour.

3.7.1 Mediation Analysis

Assessing the mediation effect of trust using bootstrapping procedures and calculate the indirect effect of Perceived risk to online shopping behaviour to measure the role of trust as a mediator.

3.8 RESEARCH MODEL

Table 3.2: Factors that Impact Consumers' Online Purchasing Behaviour.

	Factors	Description	Literature
1	Trust	The attitude or set of belief primarily of integrity and ability dealing with another party.	(Hamli & Sobaih, 2023) (Walizad, 2022) (WR & Ariyanti, 2017) (Al-Debei, et al., 2015)
2	Perceived Risk	Consumers' opinions of the unpredictability and unfavourable effects of participating in an activity	(Ling, et al., 2011) (Bahl & Kesharwani, 2020)
3	Online Shopping Behaviour	a term used to describe the act of purchasing goods or services online.	(WR & Ariyanti, 2017) (Nittala, 2015)

This study's research framework was developed based on the factors in Table 3.2, which were identified through a comprehensive review and analysis of previous research and literature. The objective of the research is to address the research questions and utilize available information to fill the gap of previous literature. The study aims to analyse and determine the effect of perceived risk and online trust on online shopping behaviour in the Turkish market.

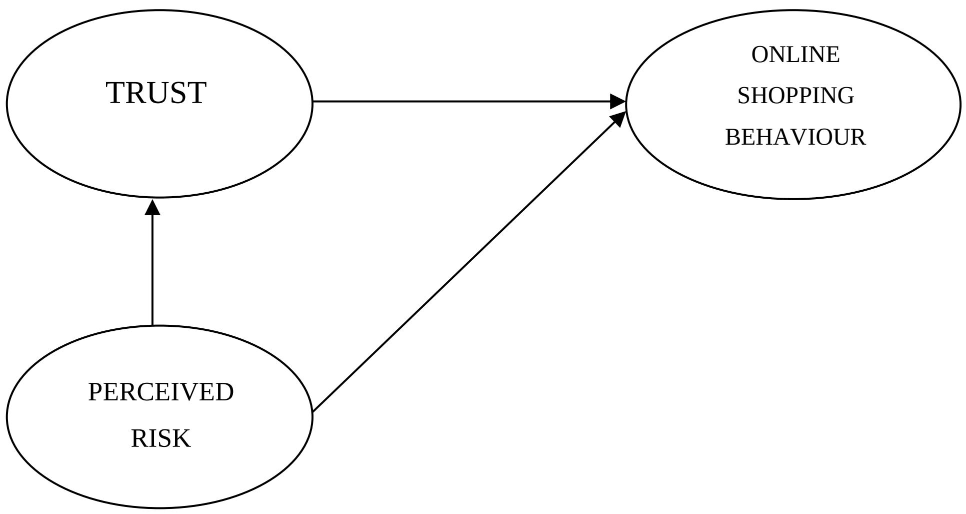

Figure 3.1: Research Model.

Demographic Factors:

In this study, the demographic factors that have been investigated are age, gender, martial status, education, occupation and income. Age is needed to identify whether younger respondents and older respondents share different views on online shopping and if the generational gap has any effect towards online shopping. Gender can determine the possibility of bias from the respondents' answers. Marital status can determine the household size and see if larger households have higher shopping activity or vice versa. Education and occupation can determine if people who are more occupied timewise are reliant towards online shopping for its convenience. Income can measure if larger income owners are less concern with risk factors compared to lower income owners. These demographic factors help specify the relation between the respondents' answers and if there is a pattern that can specify the results into a clearer picture.

4. RESULTS AND ANALYSIS

4.1 INTRODUCTION

This section of the study focuses on the outcomes of the survey has led and how it was analysed. The research model developed involves in two analysis models, measurement model and structural model and the proposed hypothesis are examined based on those analysis. The results were analysed using Smart PLS 4 for the descriptive analysis.

4.2 DEMOGRAPHIC DATA

The study had a target sample of 385 respondents where the research received 396 respondents, more than requested however they were filtered to match requirements which tallied to 386 respondents.

Table 4.1: Gender Frequency of the Respondents.

N=396	Features	Frequencies	Percentages
Gender	Male	242	62.7%
	Female	144	37.3%

Table 4.1 shows that the majority of the respondents are male at 62.7% and the female respondents are only 37.3%. Males might exhibit higher online shopping frequency compared to females. Moreover, the results in gender can also be affected due to males being less concern for online activity compared to females.

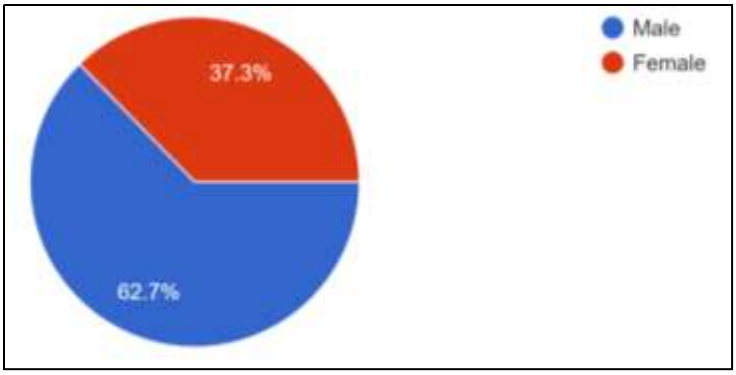

Figure 4.1: Pie Chart for Gender Fequency of Respondents.

Table 4.2: Age Frequency of the Respondents.

N=396	Characteristic/Group	Count	Frequency
Age	18-20	54	14%
	21-30	195	50.4%
	31-40	96	24.9%
	41-50	34	8.8%
	51 and above	7	1.8%

More than half of the respondents are of the younger generation with ages from 18-30 at a 64.4% and only 10.6% are above the ages of 40 meaning most of our respondents are very familiar with online shopping and technology in general as they grew with the technological environment. Younger age groups might demonstrate higher online shopping engagement ad lower perceived risk compared to older age brackets.

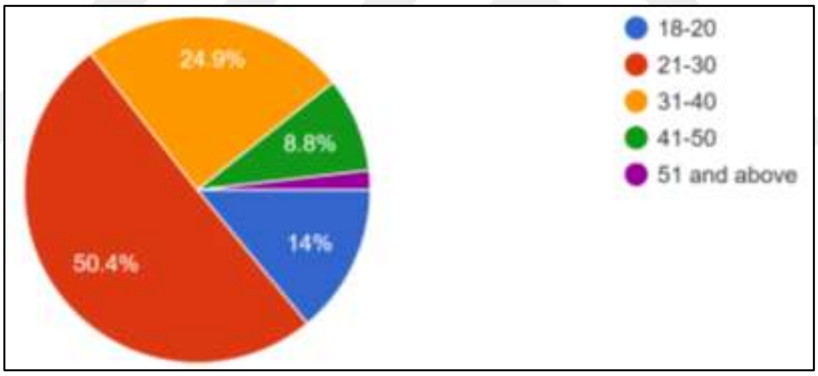

Figure 4.2: Pie Chart for Age Frequency of Respondents.

Table 4.3: Martial status Frequency of the Respondents.

N=396	Characteristic/Group	Count	Frequency
Marital Status	Married	116	30.1%
	Single	250	64.5%
	Widow	9	2.3%
	Divorced	11	3.1%

Majority of the respondents are single and only 30.1% of the respondents are married. While married, widow or divorced people may tend to have a larger household number, single people will possibly have more disposable income and longer online shopping engagement. This may affect their online shopping behaviour compared married and widow/divorced individuals.

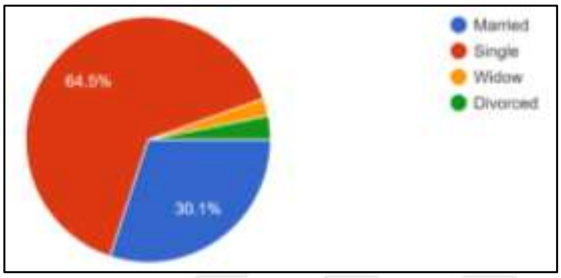

Figure 4.3: Pie Chart for Martial Status Frequency of Respondents**.**

Table 4.4: Education Frequency of the Respondents.

N=396	**Characteristic/Group**	**Count**	**Frequency**
Education Degree	High School	27	7.3%
	College Diploma	41	10.4%
	Bachelor's Degree	232	59.6%
	Master's Degree	62	16.1%
	PhD	23	6.2%
	Other	1	0.5%

Undergraduates and graduates may have an increased reliance on online shopping due to their comfort with technology. Access to certain funds and time availability to shop may also play a role to their online shopping behaviour. The results also shows that majority of the respondents are bachelor's degrees holder due to the demographic circle and likeliness of engagement towards online surveys.

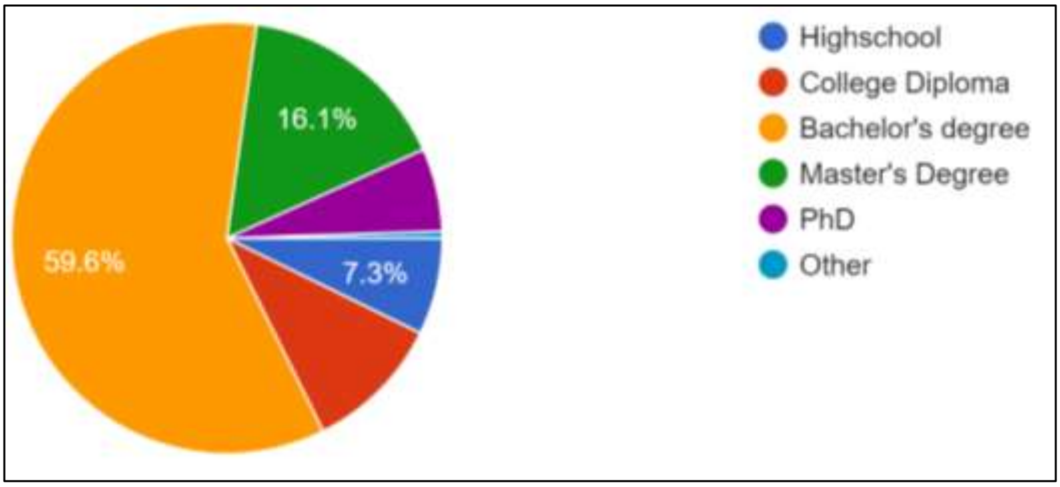

Figure 4.4: Pie Chart for Education Frequency of Respondents.

Table 4.5: Occupation Frequency of the Respondents.

N=396	**Characteristic/Group**	**Count**	**Frequency**
Occupation	Student	123	31.2%
	Unemployed	25	6.5%
	Government employee	19	5.2%
	Private employee	174	44.9%
	Business Owner	40	10.9%
	Other	5	1.3%

Type of occupation may not provide a full context of online shopping behaviour; however, a potential relationship is that private employees may have larger budgets and exhibit different trust and risk perceptions while students aim for affordability and convenience due to their limited funds.

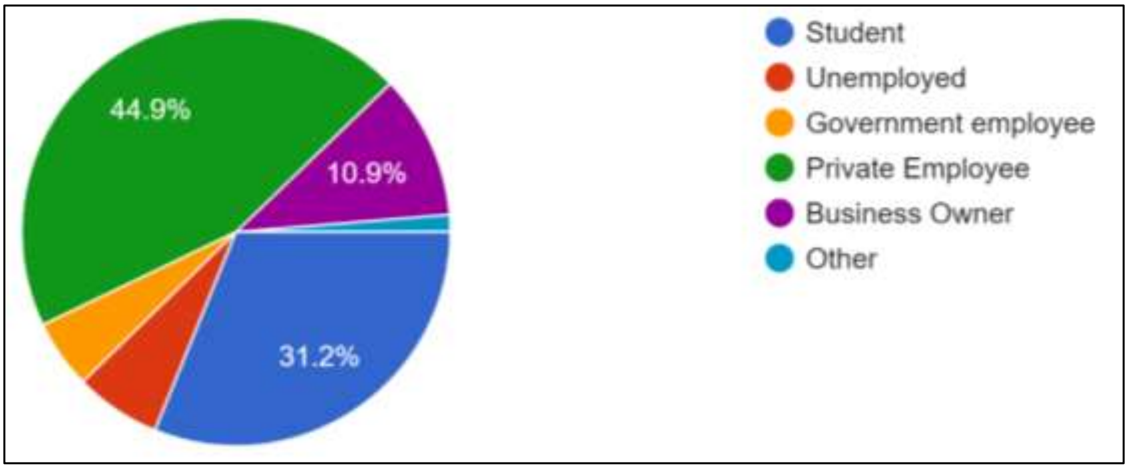

Figure 4.5: Pie Chart for Occupation Frequency of Respondents.

Table 4.6: Monthly Income Frequency of the Respondents.

N=396	**Characteristic/Group**	**Count**	**Frequency**
Monthly Income (TL)	<15.000	29	7.5%
	15.000-20.000	57	14.7%
	21.000-30.000	118	30.5%
	31.000-40.000	91	23.5%
	40.000<	63	16.3%
	No income	28	7.5%

Most respondents earn an income higher than the minimum wage with a majority earning more than 21.000 TL a month. Higher income generally correlates with higher frequency or activity on online shopping and lower perception on risks due to being more financially secure compared to lower income individuals.

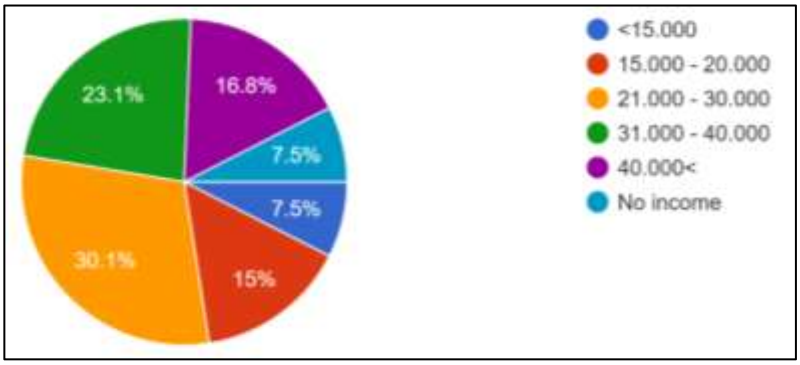

Figure 4.6: Income Frequency of Respondents.

Table 4.7: Order Frequency of the Respondents.

N=396	**Characteristic/Group**	**Count**	**Frequency**
Table 4.7: Order frequency of the respondents (Table continued)			
Online Order Frequency	Daily	24	6.06%
	Several times a week	102	25.75%
	Once a month	122	30.80%
	Not using online services	10	2.52%

This section is acted as a filler question to focus on online consumers and their experience with online shopping. With only 10 respondents not using online services, majority of the respondents have made an order at least once a month with the majority ordering on a weekly basis.

Table 4.8: Demographic Data Descriptive Statistics.

	N	**1**	**2**	**3**	**4**	**5**	**Mean**	**STD. DEV**
Online Trust								
OT1	386	15	10	23	276	62	3.933	0.819
OT2	386	6	27	15	143	195	4.280	0.942
OT3	386	3	15	31	211	126	4.145	0.782

Table 4.8: Demographic Data Descriptive Statistics “Table Continued”.

OT4	**386**	**4**	**13**	**33**	**209**	**127**	**4.145**	**0.789**
Perceived Risk								
PR1	386	50	264	29	18	25	2.233	0.960
PR2	386	177	131	30	34	14	1.904	1.09
PR3	386	96	206	46	20	18	2.114	0.992
PR4	386	79	217	50	29	11	2.160	0.93
PR5	386	106	198	42	23	17	2.085	1.01
PR6	386	155	158	28	27	18	1.951	1.08
Online Shopping Behaviour								
OSB1	386	10	8	14	233	121	4.158	0.801
OSB2	386	4	12	17	143	210	4.407	0.801
OSB3	386	5	17	21	155	188	4.306	0.862
OSB4	386	10	6	12	127	231	4.458	0.846

4.3 NORMALITY TEST

To identify the preferable model choice for Structural equation modelling, a normality test is needed. Table 4.9 shows the Skewness and kurtosis for this research data sample size and the Mardia’s multivariate skewness and kurtosis is used to identify the normality.

Table 4.9: Research Data Skewness and Kurtosis.

SAMPLE SIZE: 386				**NUMBER OF VARIABLES: 3**		
UNIVARIATE SKEWNESS AND KURTOSIS						
MEASUREMENT → **VARIABLE** ↓	Skewness	SE_skew	Z_skew	kurtosis	SE_kurt	Z_kurt

Table 4.9: Research Data Skewness and Kurtosis "Table Continued".

OSB	**-2.015**	**0.124**	**-16.228**	**5.170**	**0.248**	**20.867**
OT	-1.670	0.124	-13.445	3.305	0.248	13.339
PR	1.711	0.124	13.778	2.659	0.248	10.731
MARDIAN'S MULTIVARIATE SKEWNESS AND KURTOSIS						
		b-value		z-value		p-value
SKEWNESS		11.77867		757.76115		0.000
KURTOSIS		36.03431		37.72519		0.000

From table 4.9, the skewness and kurtosis results are seen to be substantially higher than usual which indicates that our data distribution is one-sided and non-normality data. Figure 4.8 shows a histogram for a visual representation of the data distribution.

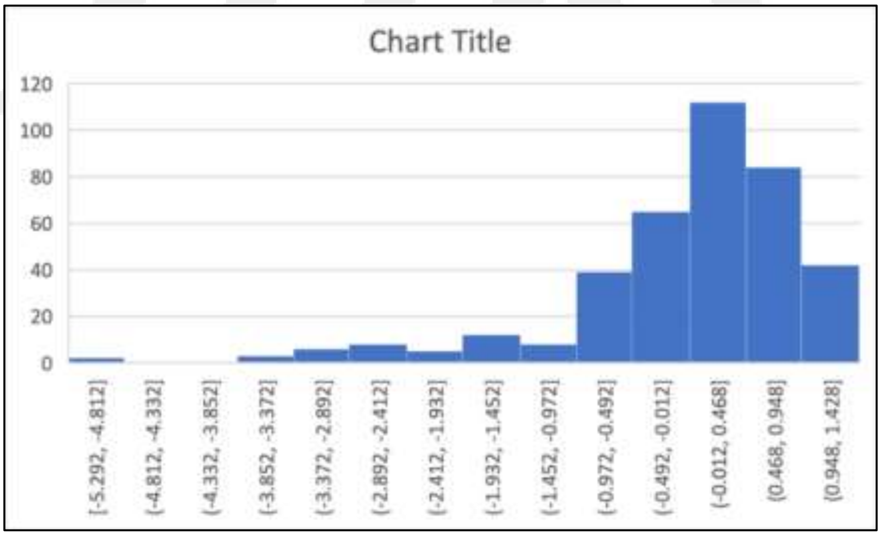

Figure 4.8: Histogram of Data Distribution.

Based on these data information, it can be concluded that Partial Least Square Structural equation modelling (PLS-SEM) is the preferred model choice as it is more robust to non-normality compared to covariance-based (CB-SEM)

4.4 FACTOR AND RELIABILITY ANALYSIS

This section of the analysis will focus on descriptive analysis, where the assessment of the measurement model will be done. Based on (Jr, et al., 2014), the provided guidelines to assess the model including reliability testing follows the limits to apply on the model, they are as follows (Jr, et al., 2014):

Convergent Validity: Average variance Extracted (AVE) ≥ 0.5

Reliability of individual item: Standardized factor loading (SL) ≥ 0.7

Construction Reliability: Cronbach's alpha (α) ≥ 0.7

Construction Reliability: Composite Reliability (CR) ≥ 0.7

Now considering the results collected form the table below, the first assessment is the standardized factor loading or (SL) the measure of the proportion of variance in the variables, a high factor loading means it is acceptable (Jr, et al., 2014).

Table 4.10: Factor Loadings of each Scale.

	FACTOR LOADINGS (SL)	SAMPLE MEAN (M)	STANDARD DEVIATION (STDEV)	T STATISTICS (|SL/STDEV|)	P VALUES
OSB1 <- OSB	0.734	0.732	0.041	17.883	0.000
OSB2 <- OSB	0.800	0.799	0.03	26.633	0.000
OSB3 <- OSB	0.601	0.597	0.061	9.855	0.000
OSB4 <- OSB	0.721	0.72	0.051	14.025	0.000
OT1 <- OT	0.773	0.773	0.032	24.542	0.000
OT2 <- OT	0.843	0.842	0.019	44.281	0.000
OT3 <- OT	0.7	0.697	0.043	16.245	0.000
OT4 <- OT	0.657	0.654	0.058	11.357	0.000
PR1 <- PR	0.832	0.83	0.029	28.392	0.000
PR2 <- PR	0.84	0.839	0.022	38.833	0.000
PR3 <- PR	0.852	0.851	0.021	41.232	0.000
PR4 <- PR	0.821	0.82	0.025	32.912	0.000
PR5 <- PR	0.841	0.839	0.028	30.574	0.000
PR6 <- PR	0.789	0.787	0.029	26.875	0.000

The results shown in table 4.10 that of which 2 of the 13 items have a low SL which will have an effect on the overall model performance, however, they will be kept as they are theoretically relevant based on past literature (Chaturvedi, et al., 2016) (Bahl & Kesharwani, 2020). OT1, OT2, OT3, PR1, PR2, PR3, PR4, PR5, PR6. OSB1, OSB2 and OSB4 all have a good SL reading while OT4 and OSB3 records a low reading.

Table 4.11: Reliability Test Results.

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
OSB	0.685	0.705	0.808	0.515
OT	0.737	0.77	0.833	0.558
PR	0.909	0.914	0.930	0.688

The assessment of internal consistency is based on the composite reliability (CR), based on the readings measured the constructs **Trust**, **Perceived Risk** and **Online Shopping behaviour** shown a good or acceptable CR readings. Similarly for the Cronbach's alpha (α) readings, the constructs shown an acceptable rate, even though OSB α value is 0.685, seeing the scale of the model is on the smaller size, the value can be considered to be acceptable (Jr, et al., 2014). In terms of AVE, the amount of variance in each indicator that can be attributed to the latent variable is measured by the average variance extracted (AVE). A high AVE score means that a significant amount of the variance in each indicator may be explained by the latent variable. Where in this research, all three constructs show scores of good AVE.

4.5 MEASUREMENT MODEL ASSESSMENT

To lay down the foundation of the data analysis when for Structural equation modelling, measurement model assessment is necessary. Assessing the model for the variables Trust and perceived risk ensures the complex concept is well underlined and reflected towards online shopping behaviour.

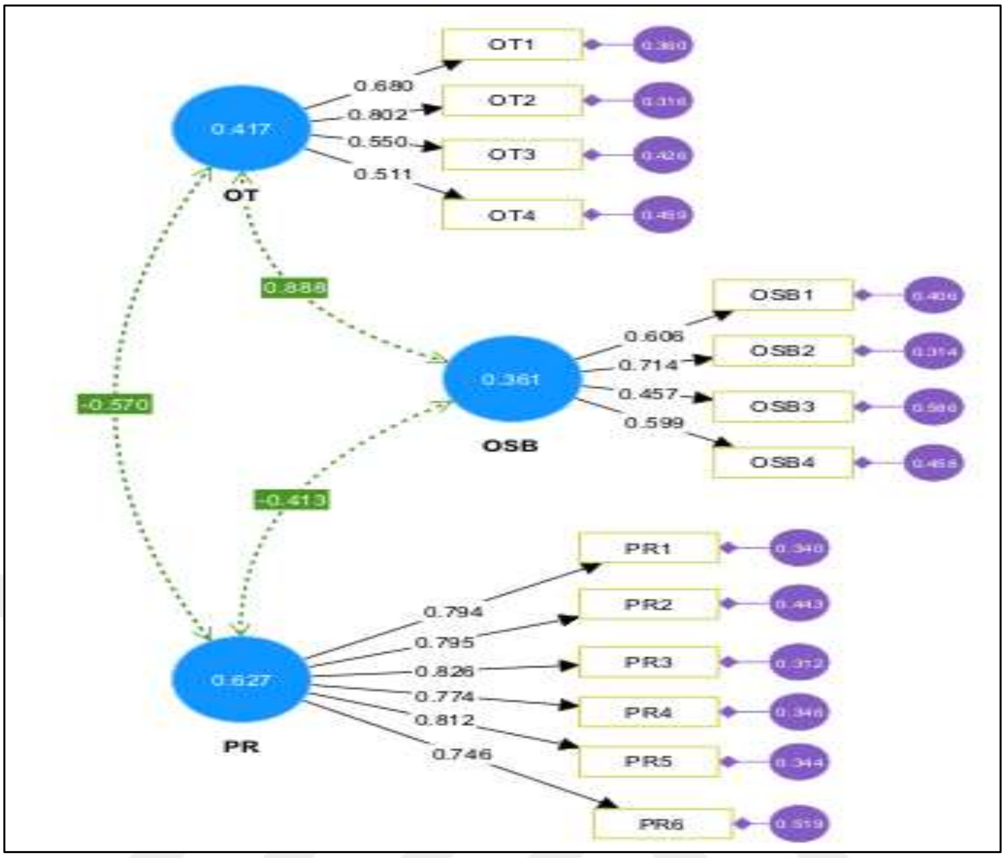

Figure 4.9: Measurement Model.

The measurement model shows the item error variance to be less than 0.5 meaning, there is little unexplained variance, and the item indicators are all reliable and accurate to capture the model constructs.

4.5.1 Model Fit

In this section, assessing model fit is an essential stage because it evaluates whether the relationships between the variables in the model are supported by the data and how well the suggested model describes the observed data and based on the study (Marsh & Hocevar, 1985) the recommended criteria for the indices limits are set as seen in table 4.12 below.

Table 4.12: Model Fit Indices.

MODEL FIT INDICES	VALUE	RECOMMENDED CRITERIA
CHSQR/DF	2.897	<5

Table 4.12: Model Fit Indices "Table Continued".

CFI	0.94	>0.9
NFI	0.912	>0.8
TLI	0.927	>0.9
RMSEA	0.07	<0.08

4.5.2 Discriminant Validity

One kind of construct validity is discriminant validity, which evaluates whether a measure is unrelated to other measures of distinct constructs. As in the study (Bahl & Kesharwani, 2020) the two methods used to achieve discriminant validity are the HTMT and Fornell-larker criterion.

Table 4.13: Discriminant Validity.

	Heterotrait-monotrait ratio (HTMT)
Perceived Risk <-> Online Shopping Behaviour	0.385
Trust <-> Online Shopping Behaviour	0.879
Trust <-> Perceived Risk	0.550

(Jr, et al., 2014) state that an HTMT < 0.90 is needed to achieve discriminant validity. From table 4.13, PR and OSB show a strong discriminant validity and Trust-OSB and Trust-PR show a moderate discriminant validity.

Table 4.14: Fornell-larker Table.

	Online Shopping Behaviour	**Perceived Risk**	**Trust**
Online Shopping Behaviour	0.719		
Perceived Risk	-0.311	0.832	
Trust	0.653	-0.461	0.751

4.6 STRUCTURAL MODEL ASSESSMENT

In regards of the structural model, the guidelines of the value limits follow (Jr, et al., 2014) where the limits are as follows:

Coefficient of determination (R^2 value):

a) R^2 value ≥0.25 (weak);

b) ≥0.50 (moderate);

c) ≥0.75 (substantial)

4.6.1 Quality Criteria

The Quality criteria help offer insightful information about how well the model explains the observed data and the correlations between the variables.

Table 4.15: Quality Criteria.

	R^2	R^2ADJ.	VIF	F^2	EFFECT
ONLINE SHOPPING BEHAVIOUR	0.421	0.418			
TRUST	0.221	0.219			
PERCEIVED RISK -> ONLINE SHOPPING BEHAVIOUR			1.270	0.001	Small to none
PERCEIVED RISK -> TRUST			1.000	0.284	Moderate to Large
TRUST -> ONLINE SHOPPING BEHAVIOUR			1.270	0.546	Large

As seen in table 4.15, the VIF values are less than 5 showing a low sign of multicollinearity as the study (Marsh & Hocevar, 1985), multicollinearity arises when two or more constructs are highly correlated making the model difficult to interpret. In this case, the model shows a low value of VIF meaning the independent variables are not highly correlated and resulting a more accurate estimate.

4.6.2 Path Coefficients

Path Coefficients (original sample (O); mean (M); Standard Deviation (STDEV)): bootstrapping (5000bootstrap samples; 321 bootstrap cases no sign changes, **T values** (|O/STDEV) > 1.65) (Roldán & Sánchez-Franco, 2012)

Table 4.16: Direct Effect.

	Original sample (O)	**Sample mean (M)**	**Standard deviation (STDEV)**	**T statistics (|O/STDEV|)**	**P values**
OT -> OSB	0.637	0.636	0.064	9.915	0.000
PR -> OSB	-0.024	-0.03	0.054	0.45	0.326
PR -> OT	-0.47	-0.477	0.062	7.632	0.000

Using statistical analysis of the model to assess using the one-tailed technique, the path coefficients are shown between the independent variables and dependent variables. One of the variable relations shows poor path coefficient resulting in a poor P value and T value, Perceived risks path to Online Shopping behaviour shows a P value of 0.326 (P<0.05) and a t value of 0.45 (T>1.65), this shows that the relationship is not statistically significant directly.

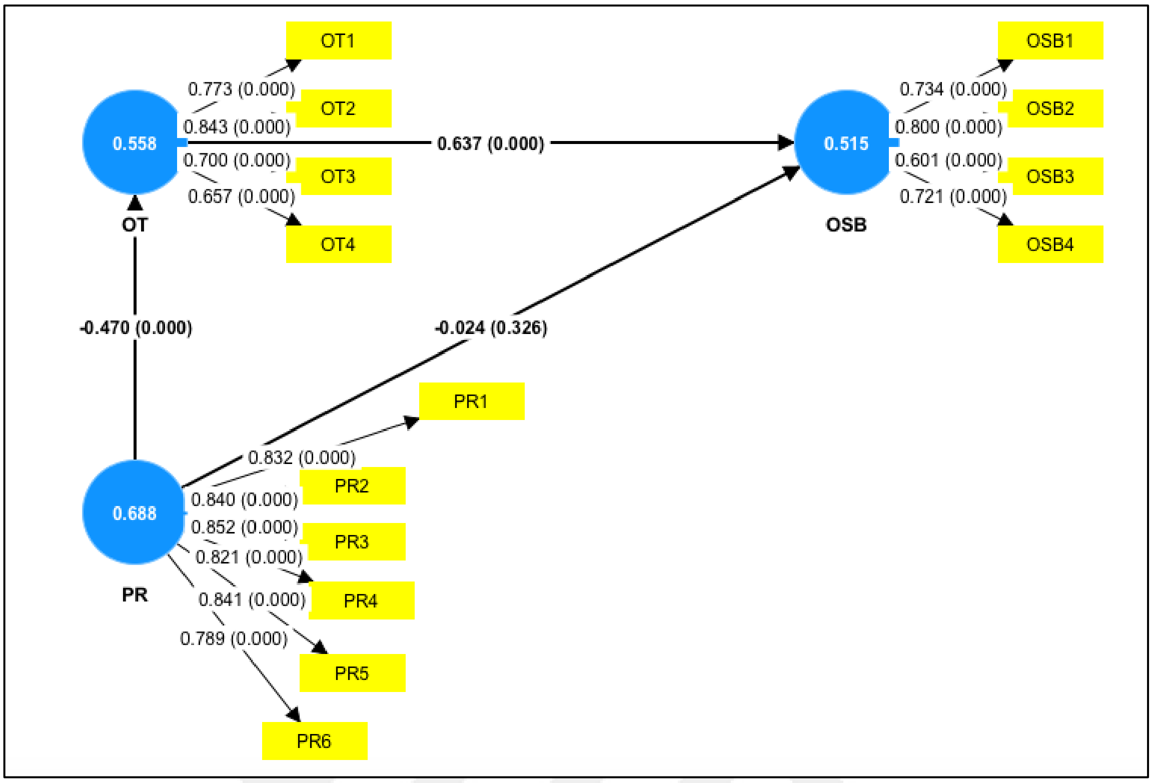

Figure 4.10: PLS-SEM.

4.6.3 Mediation Analysis

Table 4.17: Indirect Effect.

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
PR ->OT->OSB	-0.299	-0.303	0.045	6.664	0.000

Table 4.18: Total Effect.

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
OT -> OSB	0.637	0.636	0.064	9.915	0.000
PR -> OSB	-0.324	-0.333	0.057	5.707	0.000
PR -> OT	-0.47	-0.477	0.062	7.632	0.000

With the indirect effects, the relation between perceived risk and online shopping behaviour may not be significant directly, but through the mediator variable, Trust, the total effects are significant. As seen in Table 4.18, the total effects show a good P value and T values for all the variables.

Analysing the values recorded, the hypothesis statements can hence be analysed.

Table 4.19: Hypothesis Test Results.

Hypothesis	Statement	Findings
$\boldsymbol{H_0 1}$	Trust has a positive effect on online shopping behaviour.	Supported
$\boldsymbol{H_0 2}$	Perceived risk has a negative effect on Trust.	Supported
$\boldsymbol{H_0 3}$	Perceived risk has a negative effect on online shopping behaviour.	Not supported
$\boldsymbol{H_0 4}$	Trust mediates the relationship between perceived risk and online shopping behaviour.	Supported

Hypothesis 1 states that the relationship between Trust and Online shopping behaviour is positive, this statement is **supported** as the path coefficient and P values approve.

Hypothesis 2 states that the relationship between Perceived Risk and Trust is negative, this statement is **supported** as the path coefficient and P values approve.

Hypothesis 3 states that the relationship between Perceived Risk and Online shopping behaviour is negative, this statement is **not supported** directly as the T and P values do not approve though the path coefficient shows a negative path.

Hypothesis 4 states that Trust mediates the relationship between Perceived risk and online shopping behaviour, this statement is **supported** as the Path coefficient and P values approve through the indirect effect between the two variables.

5. DISCUSSION & LIMITATION

From the understanding of past literature, Perceived Risks and Trust are two essential factors that need to be considered when analysing Online shopping behaviour. Studies (Arshad, et al., 2015) (Featherman, et al., 2010) shown that Perceived risk is significantly related towards Online Shopping behaviour while the studies (Bahl & Kesharwani, 2020) (Chaturvedi, et al., 2016) express that trust and perceived risk is significantly related to online shopping behaviour. From this survey, the respondents show that trust is a key factor related to online shopping behaviour however Perceived risk is not as significant as past literature has shown.

Perceived risk can be seen through different perspectives, through experiences or through assumptions of based rumours. However, compared to most previous literature, this study has been conducted post-corona timeline, an era where online shopping is a norm due to the heavy reliant on it in recent years. For studies Pre-corona , Perceived risk is shown to be important factor including price and Web Quality usage (Alkibay & Demirgunes, 2016) (Azami, 2019) (Chaturvedi, et al., 2016), however, now the e-commerce market has changed and consumers are not “overly thinking” on their consumer decisions as long as there is a mutual trust between consumer and the online retailers. This study has shown that Trust is positively significant toward online shopping behaviour and the trust is a mediator where Perceived risk indirectly effects online shopping behaviour. Therefore, for online retailers to mitigate perceived risk, they only need to improve trust and that will reflect on the perceived risk helping the business to improve sales performance and customer loyalty.

The study (Bahl & Kesharwani, 2020) shows that Perceived risk and trust are essential factors however in contrast to this study, the demographic plays a major role, India has a market penetration in online shopping at 54% (Kalia, 2022)in compared to Türkiye’s 74.3% (Dierks, 2023) , though India has a bigger market revenue likely due to larger audience, Türkiye is growing at a faster rate due to its early adoption and enhancement.

The results shown in this research that Perceived Risk is not as essential as a direct variable towards Online shopping behaviour as mentioned in studies (Bahl & Kesharwani, 2020) (Ling, et al., 2011), reasons may be caused by survey results, the demographic shows that more than half of the respondents are of the younger generation (ages between 18-30), this demographic are less likely to be concerned on Perceived risk due to the high experience and involvement around online shopping and the internet in general making them able to mitigate the risk on their own. Moreover, 93.5% of the respondents are either employed or students, meaning they are more likely to be reliant on online shopping due to their limited time available. To note as well, in terms of income, majority of the respondents are considered middle class or higher, this means that financial secures individuals are less concerned on the perceived risk when online shopping. The survey measurements can also play effect on the accumulated results as some factors may not be as related to the others, online shopping for Food is a different experience when online shopping for other goods, such a factor can effect on the respondent decisions when answering the survey regarding perceived risk. Another explanation that can potentially affect the respondent's decision towards the reduced concern towards perceived risk is the frequency of online shopping. The studies that were taken to review in this study were majority before the pandemic year, 2020. Therefore, after the year 2020, online shopping can be more involved in our daily lives thus coming back to this data 2024, this may lead to a reduce in concern for perceived risk as possibly the respondents are able to mitigate how to handle the risks themselves and are able to distinguish between certain online retailers in terms of trustworthiness and reliability. However, these statements are still needed to be reviewed with further evaluation. In regards of the research objectives and questions, it can be said that all the objectives were met, and the hypothesis of the study was all supported except for Hypothesis 3.

The study has faced some limitations during the timeframe, one of which is the limited respondents, the sample size is small considering the population of online shoppers and may not justify completely the outcome. Moreover, the bias in data may lean towards certain demographics as the respondents where male dominate, where the population size in Türkiye is almost 1:1 for male and females. Online shopping can also differentiate a consumers perception based on their product choice, shopping for food is different when compared to shopping for furniture, similarly with clothes and toys. Each product can bring out a different perspective from consumers when online shopping.

6. CONCLUSION

This study aimed to determine the effects of trust and perceived risk on online shopping behaviour with a focus on the Turkish market. Based on the results collected and analysed through descriptive analysis using SmartPLS 4, the findings recorded that Trust has a strong positive effect on online shopping behaviour meaning that the Turkish market consumers are more likely to engage in online shopping when there is a trust with the online retailers. Thus, the findings align on past literature on the significance of trust.

However, in terms of Perceived Risk, the findings did not show a significant effect on online shopping behaviour, though the results prove that there is a small negative effect towards online shopping, it is not significant to be considered as a major variable that influences online shopping within the Turkish market. However, while the results suggest that the direct effect of perceived risk is insignificant, the indirect effect shows it is significant when Trust is the mediator, meaning that it influences the online shopping behaviour through trust. When consumers see the risks when online shopping for certain retailers, they are less likely to trust them.

The study's results have a few implications for Turkish online retailers. They underestimate how crucial it is to establish and preserve customer trust. To build consumer trust and promote online buying, e-commerce companies should prioritize implementing dependable and transparent procedures, offering safe payment gateways, and quickly and efficiently addressing customer complaints. Second, though Perceived risk is not directly affecting, it can still indirectly affect the online shopping behaviour. Online retailers should address these concerns regarding, information security, product quality and security, this would mitigate risks and improve trust from consumers.

In conclusion, this study contributes a better understanding on the complex relationship between trust, perceived risk, and online shopping behaviour within the Turkish market. The results provided valuable insights where online retailers, consumers and legislators can utilize the information and build effective strategies for their benefit.

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APPENDIX A

SURVEY FORM

Determining the Impact of Trust and Perceived Risk on Consumers' Online Shopping Behaviours: A Case on Turkish Online Market

A relatively new trend in retail purchasing is online shopping. The whole globe has now accepted it, including Türkiye. The aim of this research is to study the shopping behavior for Turkish consumers when buying through online retailers. It will take you no more than seven minutes to fill out the survey, your understanding and opinion on online shopping will be the focus of the survey questions.

This study is part of the requirements for obtaining a master's degree in Business Administration at the Faculty of Social Science from Altinbas University in Istanbul, and it was prepared by the student/ Rayyan Abdulaziz Batais under the supervision of Dr. Zeynep Cindik.

Demographic Information

1. What is your Gender
   - Male
   - Female

2. How old are you?
   - 18-20
   - 21-30
   - 31-40
   - 41-50
   - 51 and above

3. Martial Status
   - Married
   - Single
   - Widow
   - Divorced

4. What is your degree of education
   - Highschool
   - College
   - Diploma
   - Bachelor's degree

- Master's Degree
- PhD
- Other

5. Occupation

- Student
- Unemployed
- Government employee
- Private Employee
- Business Owner
- Other

6. Monthly Income (TL)

- <3 5.000
- 15.000-20.000
- 2J .000 - 30.000
- 31.000 - 40.000
- 40.000<
- No income

7. Online order frequency

- Once a week
- Daily
- Several times a week
- Once a month
- Not using online service

8. Types of products bought Check all that apply.

- Fashion (clothes, handbags, etc.)
- Electronics and media
- Furniture and appliances
- Toys Hobby & DIY
- Food and personal care
- Other:

A.1 Factor 1: TRUST

Please state how you feel on the following statements when online shopping.

Question		Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
1.	Online shopping websites are full of features to protect customers' personal information.					
2.	Products are delivered on time, as promised, by the e-commerce platform.					
3.	Products are carefully packed and intact when the buyer receives it.					
4.	If problems arise, I can expect to be treated fairly by the online shop on the e-commerce platform					

A.2 Factor 2: PERCEIVED RISK

Please state how you feel on the following statements when online shopping.

Question		Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
1.	I just don't trust online retailers.					
2.	More risk compared with other ways of shopping.					
3.	Low security					
4.	Difference between the purchased product and the product delivered.					
5.	Low product quality					
6.	Uncertainty associated with Internet shopping					

A.3 Factor 3: ONLINE SHOPPING BEHAVIOR

Please state how you feel on the following statements when online shopping.

Question		Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
1.	I make purchases online through internet websites.					
2.	I use online websites or applications to make purchases.					
3.	I buy different products online.					
4.	I have made purchases by online shops on the e-commerce platforms in the past					

VIF values for outer items

	VIF
OB1	1.343
OB2	1.443
OB3	1.182
OB4	1.277
RO1	2.454
RO2	2.400
RO3	2.614
RO4	2.477
RO5	2.697
RO6	2.058
TO1	1.490
TO2	1.656
TO3	1.408
TO4	1.332

Path Coefficient bar Chart from SmartPLS 4