Digital consumer behaviour and ecommerce trends since the Covid-19 pandemic

Nozipho Ramugondo

Student number: 991343

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DECLARATION

I, **Nozipho Bongiwe Ramugondo**, declare that this research article is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the Graduate School of Business Administration, University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Nozipho Bongiwe Ramugondo

Signed at **Johannesburg**

On the **28** day **February** of **2023**

DEDICATION

This research is dedicated to my 5-year and 4-year old children. Thank you for your patience with me and allowing me to not spend enough time with you while pursuing this degree. You have made me stronger and more fulfilled than I have ever imagined.

To my loving husband, Tumelo, I will forever be grateful for your love and support. Thank you for being my biggest cheerleader, my motivator and for always being on my team.

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ABSTRACT

The advent of the Covid-19 pandemic resulted in many modifications to human behaviours. Most of these changes were visible in how people around the globe began to prioritise different things in their lives, including avoiding human contact. Given the unprecedented uncertainty that arose across most aspects of life, one of the biggest effects of the pandemic was on the global economy; businesses were forced to be agile and invest in digital transformation, while consumers had to adapt to that transformation.

This study examines the shopping challenges faced by consumers during the pandemic, as well as the opportunities presented to retailers to employ new strategies to maintain their livelihoods and ultimately enhance user capability in internet shopping. The researcher thus aimed to investigate consumers' attitudes towards digital adaptation and ecommerce trends during and post the pandemic.

Consumers constantly change their attitudes towards shopping, with most changes being driven by technology and e-commerce digital enhancement. This study aimed to address the identified gaps regarding which factors influence consumers to shop online and utilise ecommerce shopping. A quantitative research methodology was used to answer the principal questions of the study, with data being collected through an online distributed survey to gather answers to the research questions. The findings of the study show that consumers spend more time shopping online now than they did prior to the pandemic.

Keywords: Consumer behaviour, Covid-19 pandemic, online shopping, e-commerce trends.

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CHAPTER 1: INTRODUCTION

1. INTRODUCTION

The Covid-19 pandemic compelled people to rapidly change their behaviours in response to personal and public health concerns, including their shopping behaviours. On the 5th of March 2020, the first case of the coronavirus was detected in South Africa, which led to the President issuing orders to be adhered to by the society in an attempt to mitigate the spread of virus (Heiberg & Winning, 2020). Given this response, many consumers were forced to prioritise their shopping habits and assess what were non-essential and essential items. Different approaches to shopping also had to be considered, with online shopping quickly becoming one of the key choices for consumers.

Covid-19 pandemic has changed many aspects of human behaviour forever, and online shopping is one of the things that will never be the same. In response to containing the virus and reducing the number of infections, most consumers resorted to online shopping as a safer method of shopping.

South African e-commerce grew by 66% in 2020 compared to the previous year, with in-store shopping decreasing by 30% (Kibuacha, 2021). E-commerce can be defined as the buying and selling of goods and services, or transmitting data over electronic network (BigCommerce, 2022), or as the buying and selling of goods or services via the internet, transfer of money and data as a form of sale (Zande, n.d.).

In South Africa, retailers saw a huge number of empty shelves as consumers were panic buying for fear of running out of the essentials before a hard lockdown was introduced. People were driven by fear, suspicion and anxiety due to the number of infections and deaths caused by the Covid-19 virus (Iriani & Andjarwati, 2020). When the first lockdown was introduced, many consumers changed their lifestyles and their purchasing behaviour.

The elements of economy and lockdown measures were interrelated, which meant that market dynamics had to change to accommodate the economic instability (Mehta, Saxena, & Purohit, 2020). The changes highlighted a gap in the market for retailers to assure consumers that they would still be able to purchase food and other essential items, but from the comfort of their homes. The lockdown restrictions gave big retailers in South Africa such as Checkers and Pick n Pay leverage to grow their online shopping sites.

This study reflects on the issues faced by consumers throughout the lockdown period, as well as the motives towards online shopping in South Africa. The researcher sought to investigate if the Covid-19 pandemic had any impact on consumer buying behaviours, as well as if consumers' attitudes towards online shopping changed in that time.

1.2 CONTEXTUAL BACKGROUND

1.2.1 Research Objectives

1. To determine if consumer monthly spending is greater or equal to pre Covid-19 regardless of how they perceive card sharing safety.

2. To determine if consumer online shopping spend prior to Covid-19 was greater or equal to online shopping spend post the pandemic.

3.To determine if gender has an influence on online shopping habits.

4. To determine if customers' card security concerns have an impact on future online spending.

1.2.2 Research Questions

The main research question was: What impact did Covid-19 has in highlighting some of online shopping consumer concerns?

The four sub-questions were:

- How does online safety influence consumers' intention to purchase?
- Did the Covid-19 pandemic affect people's online shopping spend?
- Is online consumer spending driven by gender?

- Do security concerns play a role in online shopping?

1.2.3 Problem Statement

Growing numbers of internet shopping sites are being developed and introduced to consumers, allowing for additional convenience and an enhanced customer experience. The Covid-19 pandemic led to consumers completely shifting away from their normal living experiences, from shopping to schooling and socialising. Before the pandemic, people would go to shopping malls for reasons other than shopping, safety and cleanliness was not one of the priorities for some consumers compared to other variables such as price (Sehgal, Khanna, Malviya, & Dubey, 2021). Digital platforms come with uncertainty for most customers, however, as they feel uncomfortable sharing their banking details online. Consumers thus had to shift their attitudes due to the pandemic and adapt to new ways of doing things.

Soleimani (2021) mentioned that trust is a key factor in e-commerce shopping – more so than factors such as price, quality of service etc. This study aimed to provide a theoretical and conceptual background that illustrates the differences between on- and offline consumer buying behaviour processes. While previous studies have been conducted on consumer buying behaviour and online shopping, few have focused on the South African context and the effect of the Covid-19 pandemic. This study thus aimed to examine the impact of the pandemic on consumer online shopping behaviour, as well as to investigate basic elements that drive consumers to purchase or not to purchase online products. The researcher thus sought to understand if consumers would still choose to shop online, even post the pandemic.

Countries across the globe were forced to initiate strict controls as it became increasingly difficult to manage the spread of the coronavirus. These control measures included implementing different ways to contain the spread of the virus and minimise the number of deaths. In South Africa, social distancing was one of the measures implemented; people were compelled to reduce their movements and spend most of their time in their homes. This meant that many consumers had to quickly learn how to conduct online shopping. Both businesses and consumers had to be agile in order to respond to the dynamics brought about by the pandemic, including the restrictions imposed to help mitigate the spread of the virus.

A number of small businesses used the lockdown as an opportunity to switch to digital technology. Several studies have been conducted that investigated how consumers' decision-making processes have changed since the pandemic. It is still unclear how the pandemic influenced digital adoption in consumer decision-making processes, thus this study investigated the factors influencing consumer decision making when it comes to online shopping. The aim was to uncover consumers' perceptions of online shopping, as well as what factors were associated with online shopping during Covid-19 pandemic. A study undertaken by Corbishley, Mason & Dobbelstein (2022) suggested that Covid-19 had little to do with utilitarian motives of shopping, and more to do with hedonic shopping motives.

1.2.4 Research Purpose

This paper sought to determine the effect of Covid-19 on online purchasing patterns, with questions being asked in order to determine the relationship between Covid-19 and consumers' intention to shop online. Furthermore, to address the impact brought about by Covid-19 on South African e-commerce, the prediction is that by 2027, the South African ecommerce market will reach US$7.9 billion (Wood, 2021). This prediction suggests that the adoption of online shopping is increasing. Svajdova (2021) claimed that consumer habits are governed by many factors, including fear of future uncertainties. With the lockdown restrictions, consumers were forced to adopt new habits, including online shopping. As this was an unusual activity for both consumers and retailers, not everyone was satisfied with the online shopping process.

The e-commerce experience became a task for some consumers, who complained about a lack of customer service, safety issues and concerns regarding sharing card information. Some complaints included those about orders not being received or orders taking longer than the stipulated delivery time (Dludla, 2020).This study will address consumers' expectations when they decide to engage in online shopping, i.e., what experiences they are looking to achieve and the motivation behind deciding to shop online. This study will also address determinants of consumers' online shopping to give insights into some factors that drive consumers to choose online shopping as opposed to traditional shopping. Consumers shop online for different purposes, thus this research aimed to address some factors associated with online shopping as well as highlighting common consumer concerns that online stores have to consider to enhance user experience.

This study will add further insights into online consumer shopping behaviour to encourage retailers to enhance their presence in the e-commerce sector. Although one aim is to contribute towards new knowledge about South African consumers' shopping behaviour on e-commerce channels during and post the Covid-19 pandemic, the main objective is to better understand the influences of online consumer shopping behaviour in the South African context.

1.3 DELIMITATIONS AND ASSUMPTIONS

This study targeted participants who live and shop in urban areas. The assumptions were that these consumers would have easy access to digital platforms and their geographic locations would be widely covered by online stores. The study employed a quantitative research methodology to satisfy the objectives of the research. The participants were both male and female, and had to be 18 years or older and from an urban area in South Africa. The participants also needed to have access to a smart device, which implied digital know-how and an ability to conduct online shopping.

Data collection was done through an anonymous questionnaire, with a Likert scale measuring past experience and present and future expectations. The link to the questionnaire was sent via email, WhatsApp and social media platforms. A delimitation was a limited timeframe in which to collect data and analyse it.

The study purposely does not specify the different forms of e-commerce channels and the business models that encompass the e-commerce market. The author restricted their research to online shopping, including mobile shopping applications and the internet. The study was not limited to specific product types nor specific shops.

1.4. SIGNIFICANCE OF THE RESEARCH

Several studies have been conducted on Covid-19 and the impact it has had on human nature. Corbishley, Mason & Dobbelstein (2022), for example, investigated consumer buying behaviour with regard to the pandemic and the role it played with respect to hedonic and utilitarian motives. The role played by the retail stores and service delivery companies in prioritising and improving customer experience since Covid-19 has since increased (George & Eeden, 2020). According to Kibuacha (2021), more than 70% of South Africans have shopped online at least once a month since the beginning of Covid-19 pandemic. In November 2020, a study conducted by Mastercard showed that 68% of South African consumers have shopped online since the beginning of the pandemic (Deibele, n.d.).

This paper sought to provide additional insights to retailers to enable them to better understand the factors that influence consumers' online shopping behaviours and thus better address any concerns they may have related to Covid-19. The researcher's objective was ultimately to understand consumers' buying behaviours in light of Covid, although online shopping was the focus of the study. Furthermore, the researcher looked at the challenges consumers have faced since they started shopping online, although some past literature has shown that the quality of e-commerce service has improved since before the pandemic (George & Eeden, 2020).

1.5 SCOPE OF THE STUDY

This study is comprised of six chapters, which are described below:

Chapter 1 - This chapter covers the context of the research project, the background to the study and the aims and objectives of the study. The delimitations and the assumptions the researcher made when completing this study are also clearly defined.

Chapter 2 - This chapter reviews the literature related to the issues under investigation in this study. In this chapter, the researcher outlines what is perceived by the consumers when shopping online using e-commerce channels, as well as their fears related to Covid-19 when shopping either online or in-store. The chapter further investigates consumers' motivations for online shopping.

Chapter 3 - In this chapter, the researcher describes the research methodology used to inform this study. The collection of data is also described, including its validity and reliability.

Chapter 4 - Chapter 4 highlights the results of the questions raised by the study in relation to the researcher's objectives, as well as the hypotheses. Statistical descriptive analysis is also covered in this chapter.

Chapter 5 - This discussion chapter serves to interrogate and assess the findings based on the results set out in Chapter 4.

Chapter 6 - Concluding remarks are presented and recommendations are suggested in this chapter, which are based on the statistical evidence presented.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

The Covid-19 pandemic changed how most things are done and shaped a ‘new-normal’ for both consumers and businesses. This has mostly been seen in the increase of internet usage and the access to technology since the onset of the pandemic (George & Eeden, 2020). When the hard lockdown restrictions were imposed to mitigate the spread of the coronavirus, most consumers realised that they had to quickly adapt to the new ways of doing things, especially for those who were not yet sold on the concept of online shopping.

2.2 CONTEXTUALISATION OF ONLINE CONSUMER SHOPPING BEHAVIOUR

This section of the study begins by contextualising the literature with regard to how the Covid-19 pandemic shifted consumers’ buying behaviours, particularly regarding digital utilisation and shopping online. Madhavan & Chandrasekar (2015) believed that shopping can be grouped under a list of digitised activities that offers consumers endless possibilities to make their shopping experience worthwhile. Previous literature suggests that consumers prefer traditional methods of shopping where they can interact with the seller, and that drives fear of online shopping (Shanthi & Kannaiah, 2015). They also found that consumers have experienced some sort of discomfort when it comes to transacting online (Shanthi & Kannaiah, 2015).

Madhavan & Chandrasekar (2015) maintained that the study of consumer buying behaviour helps marketers to understand why consumers behave the way they do pre and post shopping, which contributes to an understanding of how they feel and think about shopping, as well as select alternative ways of shopping. Since the start of the pandemic and lockdown restrictions, a number of small-medium online shops started increasing their online visibility. These online stores threatened the existence of big and well established brands, leading many of the big shops that were already offering online services to quickly respond to the threats by enhancing their existing systems and/or introducing new digital shopping platforms to improve users’ shopping experience. Retailers also had to reshape their strategies by quickly adapting to consumer's new buying decisions (Kohli, Timelin, Fabius, & Veranen, 2021).

When the first case of Covid-19 was detected in South Africa, most people were afraid of leaving their homes or being in crowded places, even if it was to buy essential items such as food and medication. Consumers' buying behaviour thus shifted from just buying goods to classifying those goods into essential and non-essential items. Online shopping became a safety protocol to fight against the spread of the coronavirus.

As consumers are constantly looking for seamless shopping experiences, the digitisation of online shopping has made it easier for consumers to access online shopping anytime. Meanwhile, the Covid-19 lockdown afforded retailers an opportunity to innovate and advance their online offerings. Nevertheless, as much as there has been an increase in online shopping, consumers are now more careful of what and when they buy. This is driven by the fact that Covid-19 has come with lots of uncertainties, some of which relate to health and the economic state of the country.

Some of the observations were that consumers responded differently to brands while choosing their method of shopping at the beginning of Covid-19 pandemic, which could have been the result of scarcity of products in shops. In addition, stockpiling in physical stores resulted in a shortage of goods, which may have been one of the drivers for consumers to search for alternative methods of shopping.

People were restricted from moving around and most countries introduced hard lockdowns as a measure to contain the spread of the virus. In South Africa, President Cyril Ramaphosa introduced a 21-day hard lockdown, which was meant to last from 26 March to 16 April 2020, however this continued longer than anticipated due to the increased number of infections. With the strict lockdown rules, curfews were also introduced, which impacted shopping hours and how people made purchasing decisions. These measures forced many consumers to explore other means of getting food and other essential items. The lockdown measures also meant that traditional shopping had to change due to the restricted number of people allowed in one shop at a time, as well as the restricted number of items allowed per customer at a time.

Covid-19 also made consumers sceptical of buying imported goods, especially those from China. Chinese malls in South Africa are known to be popular amongst consumers in general, but with the fear of Chinese imported goods, less people visited Chinese-owned retailers. As the first case of Covid-19 was discovered in Wuhan, China, this made an impact on the containment policies imposed as a result of the outbreak (Verschuur, Koks, & Hall, 2021).

2.2.1 Digital Transformation

Studies suggest that the Covid-19 pandemic has changed almost every phase of human life, including the way human beings behave. The approach towards shopping has undoubtedly been one of the most affected areas of human behaviour. Consumers' preferred shopping method all around the globe was shifted, with an increased number of consumers shifting from traditional shopping to online shopping (Jhamb, 2020). With increased internet penetration, most retailers have been forced to improve consumers' experiences of online shopping. People have informally shared their views in believing that things could not go back to where they were pre Covid-19 pandemic.

For most individuals, traditional shopping meant more than just going to a specific shop to buy an item of food or clothing; it meant socialising or taking time out from the home, office, etc. Many consumers interpreted traditional shopping as a therapeutic time to reflect and connect with oneself. The changes that came with the need for consumers to employ other means of shopping meant changes for retailers as well. This meant that the retailers had to also adjust to the new situation and come up with different ways of solving their customers' needs, while not forgetting to give them a good experience. Online shopping and digital payments have become a norm since the start of the pandemic, with these safely measures giving consumers a different perspective when it comes to their choice of shopping method.

When the lockdown regulations were put in place in South Africa, many consumers were forced to shop online as consumers panic bought food and other goods as a response to the pandemic stress. This meant that many products were not available on the shelves. This consumer behaviour, i.e., panic-buying, was due to uncertainty.

To support the technological impact brought about by the Covid-19 pandemic and to enhance the customer experience, established South African businesses needed to employ new strategies and leverage this opportunity by working with BigTech and FinTech companies to develop new technologies to enhance payment methods. Goga (2021) argued that South African in a verge of developing payment methods across different payment mechanisms using new technologies, even though these technologies currently carry high costs, there are other different payment methods that the retailers can adopt. Developers should thus seek to implement and improve digital payment methods that favour both consumers and businesses.

Figure 1: Online shopping survey (Schaefer & Bulbulia, 2021)

Past studies have been conducted in respect of e-commerce and drivers of consumers towards e-commerce channels. A survey was conducted in 2020 to understand the shift in consumers' online shopping behaviour since the start of the pandemic. The survey found that an uptake in online shopping was motivated by the ongoing concerns about Covid-19, which drove digital commerce to be reviewed as a hot topic (George & Eeden, 2020). The study recommended that companies address consumer concerns and focus on critical elements in a consumer's shopping journey to unlock their shopping potential (George & Eeden, 2020). It is vital to look at channel shift such as offline to online to address the concerns impacting consumer shopping behaviours.

Digital transformation is set to improve consumers' experiences, as well as to allow for businesses to realise additional revenues by offering a choice of buying methods to customers. George (2021) described digital transformation as a process where businesses respond to changes and prioritise those changes through different technologies. These technologies are meant to create value to consumers and ultimately change consumer behaviours.

2.3 THEORETICAL FRAMEWORK

2.3.1 Theory of Reasoned Action (TRA) and UTAUT framework

This theory, which was originally conceived by Fishbein and Ajzen (1975), described consumer behaviour theory as the relationship between marketing and pre-existing attitudes that consumers use when making shopping decisions (UNIVERSITY, 2022). This theory gives an insight into a consumer's intention when making buying decisions. Kempen & Tobias-Mamina (2022) suggested that consumers altered their shopping strategies to meet the restrictions that came with Covid-19 in the apparel shopping environment.

Hakan (2016), describes Unified Theory of Acceptance and use of Technology (UTAUT) framework as a tool that was originally introduced to predict employee adoption of information technology, he further mentions that although the application of this theory has been extended further, it is one of the commonly used theories to unpack the intentions of consumer shopping online as well as their behaviour towards internet shopping. Covid-19 pandemic showed a necessity for digital technologies to adopt new ways of serving consumers and catering for the shopping needs arising from the pandemic restrictions (Erjavec & Manfreda, 2022). De, Pandey, & Pal (2020), mentions that lockdown countrywide due to the pandemic highlighted the rise in the use of information technology and this highlighted the changes in human nbehaviour and patterns of their shopping.

For the purpose of this study, a version of the TRA, the Theory of Planned Behavior (TPB) by Sahu, Padhy & Dhir (2020), was mostly incorporated. The TBP does not indicate a particular belief, but rather explains what predicts the behavioural intentions of people, which further predicts their actual behaviours. The TBP was employed for this study as it has been extensively used to determine people’s behavioural intentions and their behaviours. The researcher also incorporated the UTAUT theory to explore the influence of the variables described on the study on consumers online shopping adoption during Covid-19.

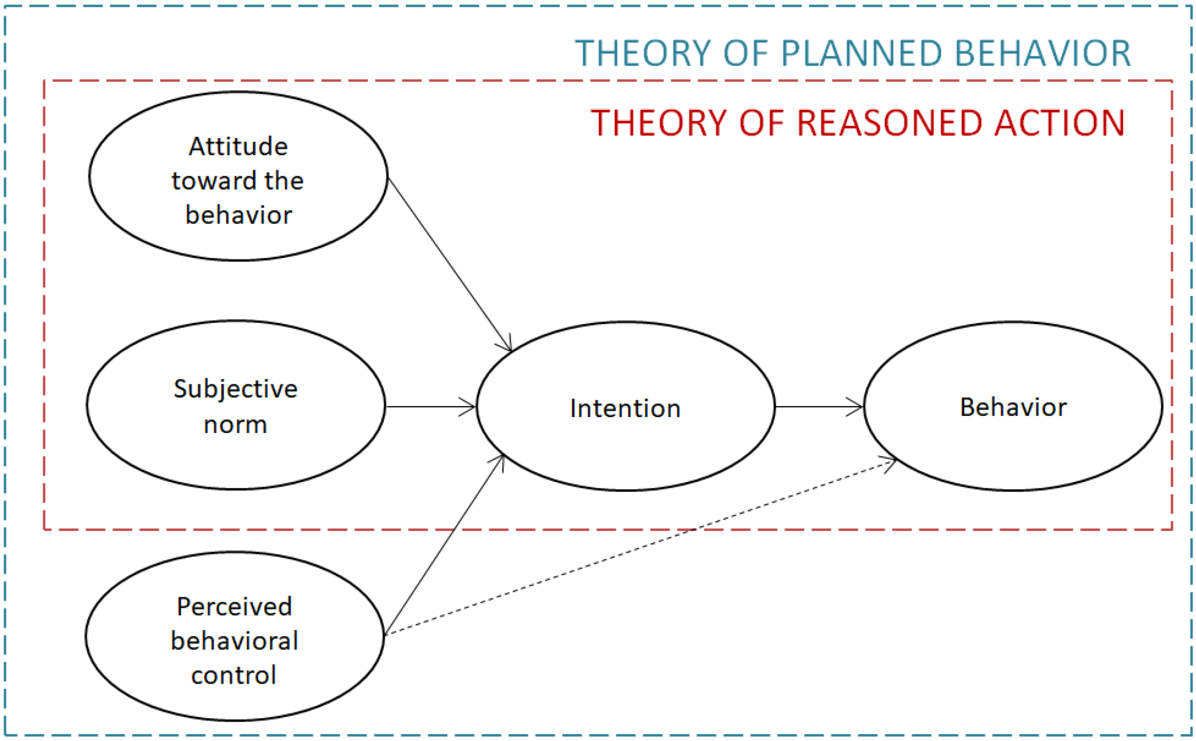


Figure 2: Theory of Planned Behaviour adopted from (Sahu, Padhy, & Dhir, 2020)

Over the past few years, many retailers have realised the importance of digital transformation and the impact it has had on changing consumers’ behaviours. The digital transformation of commerce will leverage on data and designing systems that will solve for customer experience and fulfil customer needs. Technology disruption has forced retail stores to implement new and improved digital methods to improve customer experience. Consumers who were introduced to online shopping during Covid-19 are likely to adopt this behaviour and may continue to do online shopping even beyond the end of the pandemic (Jensen, Yenerall, Chen, & Yu, 2021).

Retnowati & Mardikaningsih (2021), describe e-commerce as a digital processing of information and technological communication as a means of modifying and redefining new relationships between the seller and the buyer. Many factors influence consumers interest in online shopping, it is crucial for retailers to modify their websites and introduce systems that will seamless shopping experience to customers. Consumers becomes more comfortable and feel satisfied when the site provide credibility (Retnowati & Mardikaningsih, 2021). The pandemic has triggered the retailers to improve such elements to attract customers and gain trust.

Many factors contribute towards the way people perceive shopping or trigger the way they buy or select items, with Covid-19 triggering additional, unusual factors. Some of the factors that contribute towards consumers' shopping behaviours are influenced by political, legislative and economic factors (Svajdova, 2016). Additional factors that can be taken into consideration include income status and demographic factors. Consumers in urban areas typically have the luxury of accessing online shopping, while some consumers in rural areas do not. Furthermore, most rural-based consumers, such as in Limpopo, still lack access to the technological infrastructure that would enable them to shop online (Moeti, Mokwena, & Malebana, 2021).

Such factors play a big role in determining consumer buying trends in the digital space. Convenience has been recognised as one of the drivers of digital utilisation, however convenience may mean different things to different people. It is no different when it comes to online shopping. In previous studies investigating the drivers of consumers' shopping behaviours, convenience has been noted to be one of the principle motivations for customers to adopt online shopping (Jiang, Yang, & Jun, 2013). Consumers consider time and money saving techniques as convenient. According to Putra & Kurniawan (2022), convenience has an influence on use of intention, time and money are some of the variables that has been identified to have significant effect on people's intentions of achieving what they deem inconvinient.

Some consumers believe in comparing prices before purchasing a product or service, i.e., price can also be seen as a key factor that influences consumers at the time of buying a product. It is generally known that retailers use price promotion as a marketing tool to lure consumers to choose them over their competitors. Kenesei & Todd (2003) described consumers as fitting into two categories: those consumers who will buy any item that is labelled special-priced and those who are not bothered by the price.

Online shopping allows consumers to buy and transact anywhere in the world at any time. This method of shopping reduces the time and cost of a consumer going from one shop to another trying to find a specific product. Scutariu, Susu, Huidumac-Petrescu & Gogonea (2021) argued that the rise of online shopping has benefited both consumers and businesses, and that digital platforms allow for businesses' agile adaptation as well as an improvement in consumers' shopping experience.

2.4 REVIEW OF STUDY VARIABLES

Customer experience is a perception consumers have about a brand, based on a previous experience with that certain brand (Kszczanowicz, 2021). It is vital for businesses to understand what customers want, to employ measures to improve current processes, and to introduce new strategies that will improve users' experiences.

The impact of Covid-19 on e-commerce has been evident all over the world. Research conducted by Wood (2021) found that in 2021, South Africa's ecommerce market was US$4.5 billion, and in 2020, more than 18 milllion online shoppers were recorded in South Africa. A study conducted by Adobe Digital Economy Index in the US estimated a spend of $1.7 trillion from March 2020 to February 2022 in e-commerce sales – $609 billion more than 2018 and 2019 sales (Berthene, 2022).

This study has chosen a few variables to drive the understanding of consumer shopping behaviour when it comes to using digital platforms; the researcher sought to understand the impact of these variables on consumers' shopping habits. Some of the variables such as safety and security in online shopping were investigated, although these two terms are often used interchangeably despite having different meanings.

2.4.1 Online Card Sharing Safety Details

Safety can refer to actual products bought or the method used to buy the products. There have been many warnings in the media concerning negative internet usage, such as personal security leaks (Nguyen & Tran, 2022), therefore most retailers have employed numerous safety cues to persuade customers to shop online. Some consumers' general concern with online shopping is the fear of cybercrime; they are worried about sharing their card details over the internet. This is not the case for other consumers, however, who believe that internet shopping is safer than carrying a physical card or cash to buy goods in a physical store. During Covid-19, consumers were sceptical of buying imported goods due to uninformed fears about Covid-19 and the spread of it (Taylor, 2020).

2.4.2 Overview of Pre Covid-19 Spend

Although there are many contexts that may disrupt or change consumers' buying behaviours, the pandemic added to those aspects. Svajdova (2021) stated that the pandemic dramatically changed the way businesses act and how consumers behave in everyday life. Although generally price is a fundamental pillar that influences consumers at the time of shopping, there are other important factors that retailers should take into consideration when it comes to the digital environment if they want to attract customers.

2.4.3 Security Concern Online

To different people, privacy can mean different things. In general, privacy can be described as one's freedom from intrusion and relate to personal or professional data. A certain number of consumers prefer a tranquil and calm shopping environment, with most consumers generally preferring making their own purchasing decisions, but being able to get help when they need it. Online shopping is the preferred method for those consumers who want to shop from the comfort of their homes without anyone observing every move they make. There are also items that fall in the category deemed embarrassing for most people, such as feminine hygiene products, family planning products and sexual health products (Esmark & Noble, 2016).

2.4.4 Online shopping gender Influence

Gender is a topic of much interest in different studies, however it can be defined in different ways. Some academics classify gender in terms of the different sexes, while Kanwal, Burki, Ali & Dahlstrom (2021) classified gender as a set of characteristics that separate men and women. They added that their findings show that men have more favourable attitudes towards online purchasing than women. Debates around the shopping habits of different genders has been a topic of discussion for many decades, even before the introduction of digital shopping channels. It has been argued that women's shopping behaviour is influenced by various factors, such as emotions, trends etc.

2.5. HYPOTHESES DEVELOPMENT

The following research hypotheses were developed based on literature related to the Theory of Reasoned Action (TRA).

2.5.1 Consumer monthly spend and online card safety sharing details

Online shopping is seemingly a general concern amongst consumers when making their shopping decisions. One of the concerns raised from previous literature is the risk of sharing card details online. According to Masoud (2013), consumers fear providing their credit card information on the internet; the absence of interactions and social contact with other people may be the cause of this anxiety. However, despite the sharing of card information being perceived as risky by some consumers, many value the advantages that come with e-commerce (Masoud, 2013).

$H1_o$: Consumers' monthly online spend is the same regardless of how they perceive card sharing safety.

$H1_a$: Consumers' monthly online spend differs based on card sharing safety.

2.5.2 Online spend pre and post Covid-19

A study conducted by Adibfar, Gulhare, Srinivasan & Costin (2022) demonstrated that before the Covid-19 pandemic, online shopping accounted for 10-15% of overall retail sales in the US, however in 2021 there was a significant increase in sales among businesses such as Walmart and Amazon. This is no different to the South African context; it is reported that e-commerce spending in South Africa grew by 30% in 2020 compared to 2019, with 68% consumers diverting to online shopping since the beginning of Covid-19 (Heyns & Kilbourn, 2022). Similar findings were expected based on the nature of this study.

$H2_o$: Consumer online spending behaviour before Covid-19 was greater or equal as after Covid-19.

$H2_a$: Online shopping spend after Covid-19 increased compared to online shopping spend before Covid-19.

2.5.3 The role of gender and online shopping spend habits

There has been much interest in how gender plays a role when it comes to online shopping. Hernandez, Jimenez and Martin (2011) suggested that women have been more exposed to technology than in past decades and there has been an increase in female internet users. According to previous studies, some women seem to experience anxiety when faced with new activities and are influenced by their immediate environment (Hernandez, Jimenez, & Martin, 2011).

*$H3_o$**:** Consumer online card spend is driven by gender.*

$H3_a$: Gender has no influence on consumer online card spend.

2.5.4 Consumer security concerns bearing ad future online spend

According to Masoud (2013), consumers' perceptions about disclosing their personal information on the internet is associated with the risk of financial loss. Despite the optimistic outlook of online shopping's future growth, consumers associate the negative aspects of security with alternative methods of shopping. Online shopping provides more benefits to both consumers and businesses, as businesses can save on the costs associated with running a physical store, while consumers can shop in the comfort of their own space, anytime, anywhere. Nonetheless, these benefits come with a lot of uncertainly and potential risks. Information security mechanisms to mitigate fraud and ultimately meet consumers' expectations should be in place for all online trading businesses (Masoud, 2013).

*$H4_0$**:** Consumers' card security concerns have no impact on their future online spend.*

$H4_{a:}$ Card security concerns have an impact on consumers' future online spend.

2.6. CHAPTER SUMMARY

The Covid-19 pandemic has fuelled the growth of online shopping, and consumers are constantly looking for new ways to feed their shopping habits. This has resulted in retailers relentlessly trying to come up with innovative channels to offer a seamless online shopping experience to consumers, with most retail stores establishing ecommerce sites as a powerful sales channel. In this chapter, the researcher summarised the theories incorporated to support the study and reviewed the variables that were identified as affecting online shopping.

2.7 CONCLUSION

This chapter discussed the Theory of Reasoned Action (TRA), the theory's framework and the impact it has on consumer decision-making. Furthermore, the researcher incorporated the UTAUT framework as well as Theory of Planned Behaviour (TPB) and the impact it has on the TRA's ability to predict the behavioural actions of consumers. The TPB is widely used as a basis to understand the indicators of consumer behaviour (Bashir, Khwaja, Tur, & Toheed, 2019). The behavioural intentions behind the actions taken by consumers were extensively discussed, as informed by the theories applied. The TRA assumes that there are two conceptually independent determinants of behavioural intention: attitude and subjective norm (Ashokkumar & Nagarajan, 2021).

CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter details the approach carried out by the researcher to ensure the validity and reliability of the study. The chapter also covers the methodology, processes and analyses used to achieve the objectives of this research. The research strategy utilised, as well as the research design, are discussed, including details of the research population, sample size and data collection.

3.2 RESEARCH STRATEGY

Research can be approached in different ways, with the three most commonly used approaches being quantitative, qualitative and mixed methods (Williams, 2007). Qualitative research approach has been described as a way of exploring and understanding the human problem; this approach typically involves the interpretation of data collected from participants (Grover, 2015). The quantitative approach, meanwhile, has been identified as a method of understanding people's opinions or experiences by means of collecting and analysing data. This study employed a quantitative approach to investigate the influences of online consumer shopping behaviour.

Past literature suggests that employing a combination method can give an advantage to a researcher as it allows for the strengths of both methods while eliminating the weaknesses. Budert-Waltz (2021) described the mixed method as a combination of both qualitative and quantitative research, which is needed when research is complex.

To measure the reliability and validity of the study, descriptive statistics were used to analyse and summarise the data, with non-parametric models being employed to test the results of the data. Gadermann, Guhn & Zumbo (2012) described the use of Cronbach's alpha as an attenuated estimate of the reliability of the underlying response variables, ordinal and cronbach's alpha are conceptually equivalent. Several tests were employed in this study to test the relationships of the paired group, i.e., Cronbach's alpha to test the reliability of the Likert measures, as well as the Kruskal Wallis test, Wilcox Rank test.

3.3 RESEARCH DESIGN

A research design is the overall strategy taken to coherently integrate all components of a study in a rational manner to effectively address the research problem. This includes the data collection, sampling and analysis of data (Vaus, 2001). This research is a quantitative exploratory study. An electronic survey was used to collect data from participants in the form of a questionnaire in order to evaluate changes in buying behaviours before and during the Covid-19 pandemic.

3.3.1 Research Population

A research population refers to the number of individuals within a certain population who usually have common characteristics (Banerjee & Chaudhury, 2010). Bhandari & Scribbr (2020) noted that a population refers to the entire group from where a sample is drawn, i.e., a sample refers to a specific group within the population. For the purpose of this study, the target population was restricted to consumers of any gender who were 18 years old or older. The researcher based this approach on those participants who can be classified as being of working age.

The population from whom the data were collected were available on various social media platforms, such as WhatsApp and e-mail. The targeted individuals were friends, colleagues and acquaintances of the researcher. The study targeted consumers who were geographically located in urban areas; this choice was influenced by the past studies that have been conducted on online shopping and delivery services.

With the growing use of e-commerce channels, the researcher was primarily interested in the effects of Covid-19 on online shopping in the South African population. The consumers included in the study needed to have access to the internet via a computer, smartphone or any form of digital gadget as a way to conduct online shopping.

3.3.2 Sample Size

Sampling in research can be described as the selection of a subset of a population of interest (Turner, 2020). The sample group for this study was selected based on geographic consideration, as retail stores are restricted to offer delivery to specific areas. Due to the nature and objectives of this study, several factors were considered based on previous studies, although the questions were limited to what the researcher deemed as critical to serve the purpose of the study.

The researcher could not find accurate information on the population size of online shoppers in South Africa, as different studies had different estimations. This study thus targeted 200 participants from different backgrounds who were 18 years or older. Feedback was received from 196 people, with 184 of participants submitting completed responses.

3.3.3 Sampling Strategy

It is critical for a researcher to determine a correct sampling strategy based on the objective of their study. Researchers use either probability sampling or non-probability sampling to support their research technique. Etikan, Musa & Alkassim (2015 p.2) defined probability sampling as “clearly determining the characteristics of each unit in the population; every participant has an equal probability of being selected”. Convenience sampling is a type of non-probability sampling that targets participants who meet specific criteria at a given time.

Convenience sampling is the most common sampling technique, but does have limitations, such as bias and variabilities (Acharya, Prakash, Saxena, & Nigam, 2013). Convenience sampling was employed to satisfy the objectives of this study as it was a cost and time efficient method for the researcher to utilise.

3.3.3 Data Collection

Mertens, Pugliese, & Recke (2017) described data as “any set of values that measure a variable or the combination of all variables for all cases in the study”. Data is used to test the hypotheses of the study, thus it is important to understand the kind of data to report the results of a study. There are several methods of data collection, depending on the objective of the study. For this research, an online structured questionnaire with a Likert scale was used to collect data. Various social media platforms were identified and chosen as suitable channels for data collection.

3.3.4 Data method collection

For this study, an online survey was used to obtain data that were relevant to the researcher's objectives and research questions. The questions were adapted and derived from prior studies, many of which had already been tested for their reliability and validity. The participants were encouraged to complete the digital survey using a self-administered, web-based questionnaire, which was placed on different online channels using the Qualtrics data survey tool. This tool was chosen as a reliable and convenient data collection method, as the researcher's analysis concluded that it would accurately serve the objectives of the study. The structure of the questionnaire was designed in such a way that required the participants' consent before they committed to the survey. The questions were answered on a Likert scale, which is generally used in survey instruments to probe underlying measurement constructs. The development of these assessments follow variable use in objective models (Barua, 2013). The study consisted of 10 questions that were estimated to take the participants not more than eight minutes to complete.

As mentioned, the questionnaire was circulated to participants using various social media platforms such as e-mail, WhatsApp, Instagram, Facebook and Twitter. The targeted individuals were friends, colleagues, acquaintances and general members of society known to the researcher.

3.3.5 Measuring Instruments

As mentioned previously, the questionnaire was presented in the form of an online survey that utilised a Likert scale. Likert scales are popular in survey questionnaires as they are easily operational and were developed to measure attitudes (Sullivan & Artino, 2013). The purpose of this study was to understand the opinions of consumers regarding online shopping during the pandemic, as well as to understand their perceptions when making their buying decisions. The researcher believed this was the best method to measure the hypotheses developed.

3.3.6 Statistical Analysis

Statistics are methods of measuring specific data using different tools to calculate, describe or summarise them. The researcher summarised the data using descriptive analyses. According to Gadermann, Guhn & Zumbo (2012), polychoric correlation could be applied to any reliability estimate derived from correlation matrix.This study thus employed this strategy to estimate the reliability of the correlation matrix.

Furthermore, the researcher used Cronbach's alpha to test the reliability of the data collected. Due to the nature of the data, which were ordinal, non-parametric models were employed to determine the reliability of the study and to analyse the similarity of one or more groups in testing the categories. Due to the nature of the study, and considering that consumer buying behaviour has been a topic of interest for decades, the researcher used the Wilcox signed rank test to test the relationship between two groups in a single measure. The Wilcoxon signed rank test is used to justify the appropriateness of weighting according to the level of interclass correlation; it is used to test frequency in nonparametric tests for paired data (Rosner, Glynn, & Lee, 2006). It was deemed appropriate for this study as the data consisted of pre and post behaviour measures.

3.3.7 Ethical Considerations

The study used a digital platform to allow for the anonymity of the participants; no personal or self-identifying information was requested from the respondents. Any engagement in the study was based on the participants' willingness, and the survey stipulated that only consumers 18 years and older were invited to participate. Furthermore, a consent form was attached to the questionnaire to allow participants to give their consent before participating in the survey. The participants were well informed about the reason for the survey and its necessity for the study. They were also informed that the data were being collected for academic purposes only, that their participation was voluntary and anonymous, and that they had the choice to not complete the survey should they wish.

3.4 CHAPTER SUMMARY

This chapter analysed the approach, methodology and the design adopted for this study, including the online anonymous survey questionnaire method used to collect the data. The targeted population were individuals who were 18 years and older. The researcher described the steps taken to ensure the validity and reliability of the study, and the ethical considerations were reviewed.

CHAPTER 4: DATA DEMONSTRATION AND ANALYSIS

4.1 INTRODUCTION

This chapter presents the statistical observations based on the data collected from the participants and empirical findings are illustrated. A descriptive analysis of the data is included, before the overall results are validated and analysed.

4.2 DATA PORTION

This section looks at the selection and scrubbing of the data, which includes a sample description and outlines how the survey was structured.

4.2.1 Data Selection and Data Cleansing

Data were collected, 200 started the survey. Of the participants, 196 (93.3%) submitted answers and 14 (6.7%) started the survey but did not submit.

Of the 196 respondents who submitted answers, 184 answered all the questions while 12 did not (excluding open-ended questions). This is a sign of survey fatigue, i.e., people lost interest in the survey. For data collection, only the 184 complete responses were considered.

The questionnaire consisted of ordinal and nominal questions. The two nominal questions were asked in order to discover the gender of the respondents and any challenges they had experienced when making a purchase online. The ordinal data came from the Likert scale questions and rank questions. To analyse these data, the descriptive statistics used were:

- frequency distribution;
- measure of central tendency; and
- measure of variability.

4.3 SUMMARY ANALYSIS AND FREQUENCY DISTRIBUTION ANALYSIS

4.3.1 Distribution Analysis

Table 1: Summary statistics

Variable	N	Mean	Median	Mode
Which age group do you belong to?	184	2.467	3	3
How safe do you feel sharing your card details online?	184	3.478	3	3
How often do you purchase online today?	184	3.897	4	5
How often did you purchase online prior to Covid-19?	184	4.283	5	5
How many hours do you spend shopping online per week?	184	1.359	1	1
How much do you spend on shopping a month?	184	3.842	4	4
How much do you buy online vs physical store?	184	3.663	4	4
Do you see this pattern (g) changing or remaining?	184	3.19	2	2
What is your biggest challenge you face when shopping online?	184	3.793	5	5
Which gender do you classify with?	184	1.761	2	2

This table shows the descriptive statistics of the answers to the questionnaire. This represents the number of participants, inclusive of mean, median and mode. The majority of the respondents were between 35 and 45 and female. Most were neutral about sharing their information online, and even though the majority used online shopping before and post Covid-19. The majority of the respondents spent approximately three hours of their time shopping online every week, spending between R1,000 and R3,000. The majority also described themselves as changing their spending patterns towards increasing their online spend.

Figure : Age group distribution

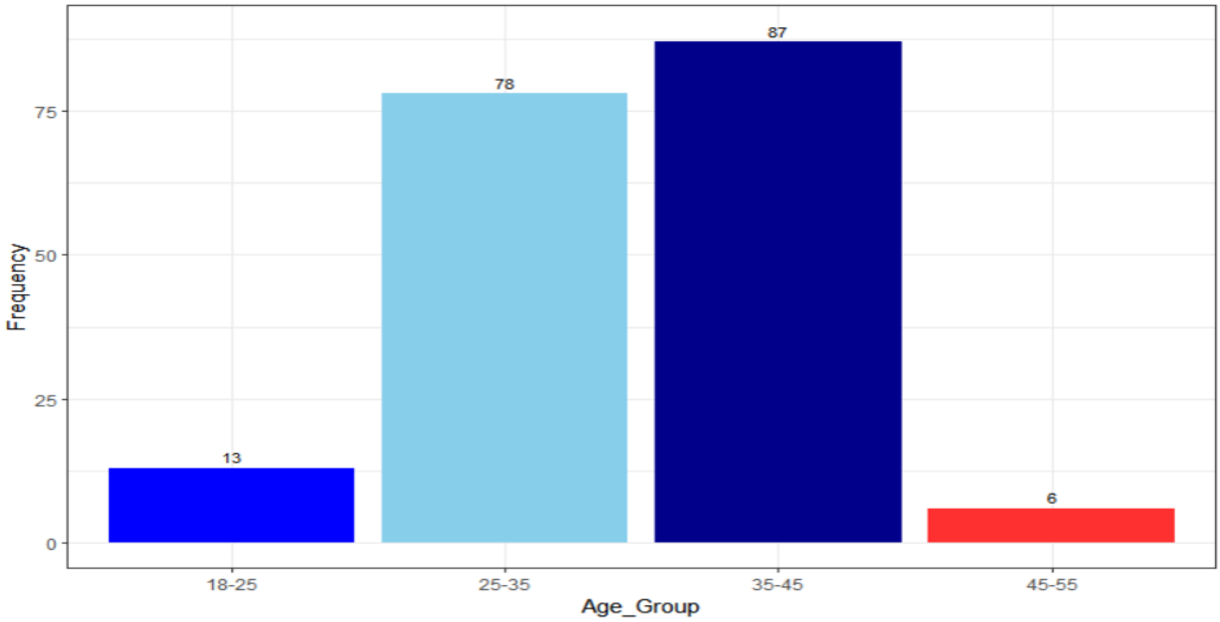


Figure 3 shows the spread of respondents per age group. The data include three generations that are synonymous with technology: Generation Z, Millennials and Generation X. Lissitsa & Kol (2016) argued that in the past decade the number of internet users has increased dramatically, suggesting that people who are more exposed to the internet have more chances to shop online. The data show that these generational cohorts have different preferences that might influence their shopping behaviours. In this study, the older generation was in the minority, with consumers aged between 35 and 45 representing the largest number of respondents, followed by the 25 to 35 age group.

Figure 3: Gender split

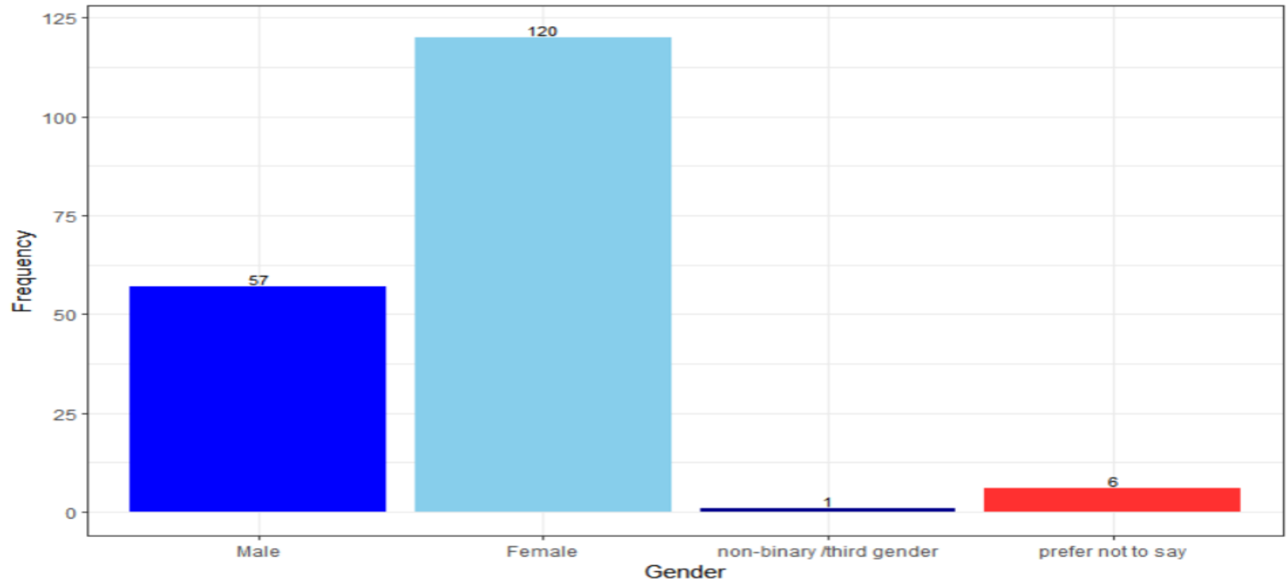


Figure 4 highlights the gender split; it can be seen that 65.2% of the respondents classified themselves as female and 31% (n=57) as males. The data further show that 3.3% (n=6) of the respondents preferred not to disclose their gender and only one respondent classified themselves as non-binary/third gender.

Figure 4: Time spent online shopping

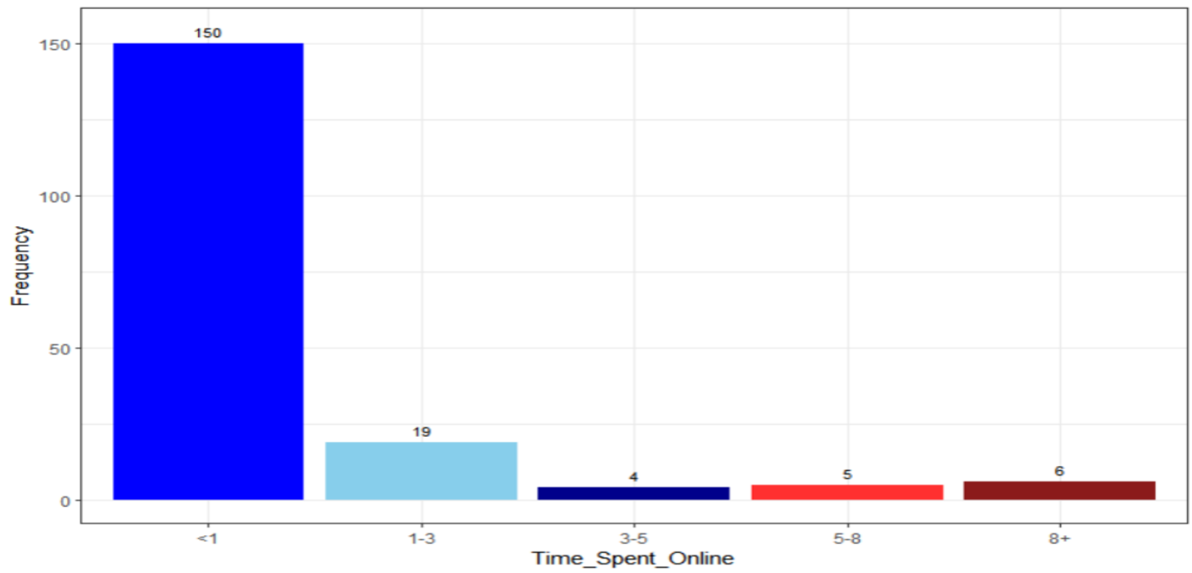


Figure 5 illustrates the time spent by participants shopping online, with the results indicating that most (81.5%; n=150) spent less than one-hour shopping online in a seven day period (1 week). A further 10.3% (n=19) spent between 1 and 3 hours, while 2.2% (n=4) spent between 3 and 5 hours; 2.7% (n=5) spent between 5 and 8 hours; and 3.3% (n=6) spent over 8 hours shopping online per week.

Figure 5: Monthly spend

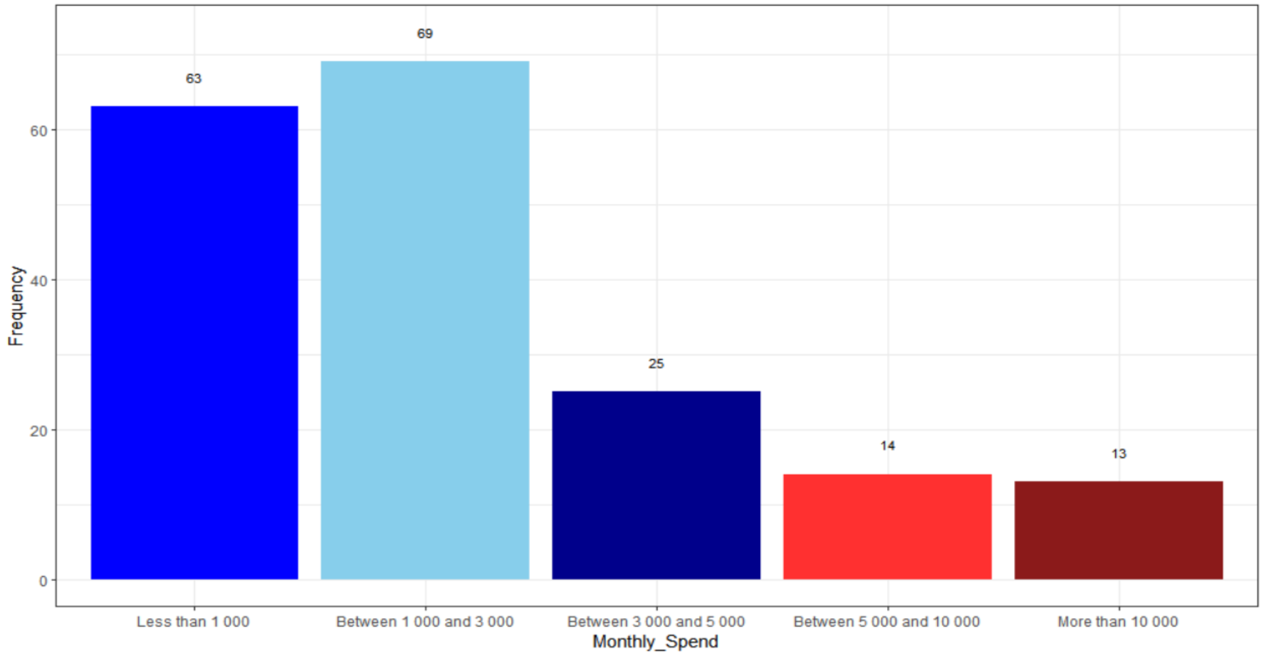


Figure 6 shows how much the respondents spent on online shopping in a month, with 34% (n=63) spending less than R1,000; 38% (n=69) spending between R1,000 and R3,000; 14% (n=25) spending between R3,000 and R5,000; 8% (n=14) spending between R5,000 and R10,000; and 7% (n=13) spending more than R10,000 a month.

Figure 6: Shopping method

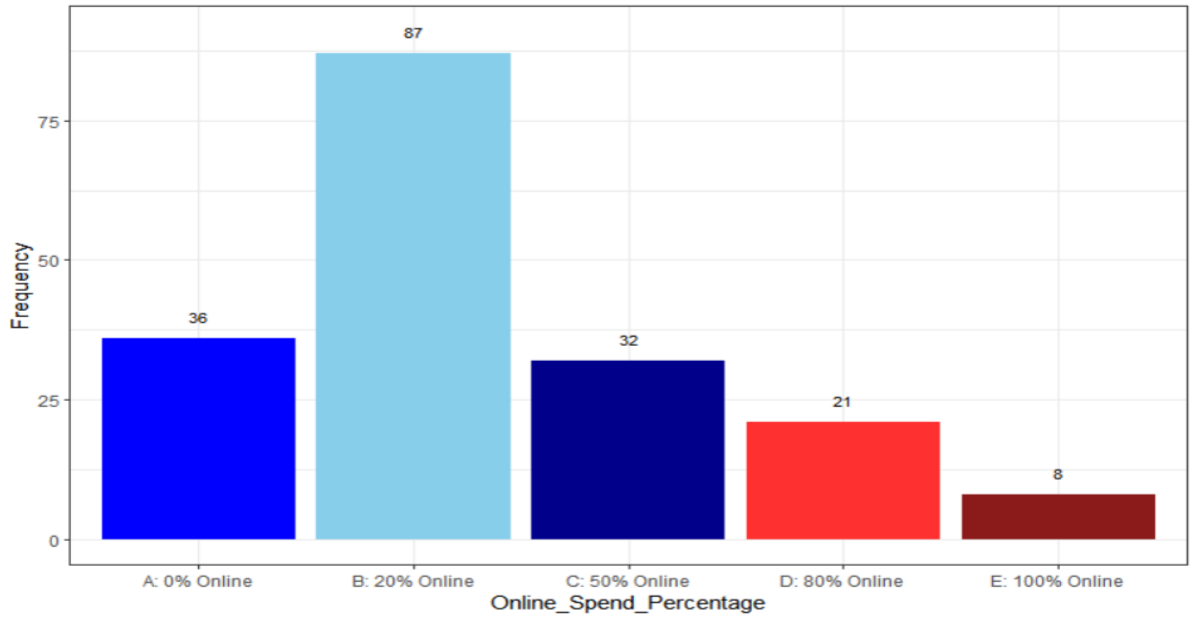


Figure 7 shows the percentage of online vs. in-store shopping. The majority of respondents (n=87) spent 20% of their shopping time online, with only eight respondents doing all their shopping online. It can be seen that 32 respondents spent 50% of their time online and 50% in-store.

Figure 7: Spending behaviour

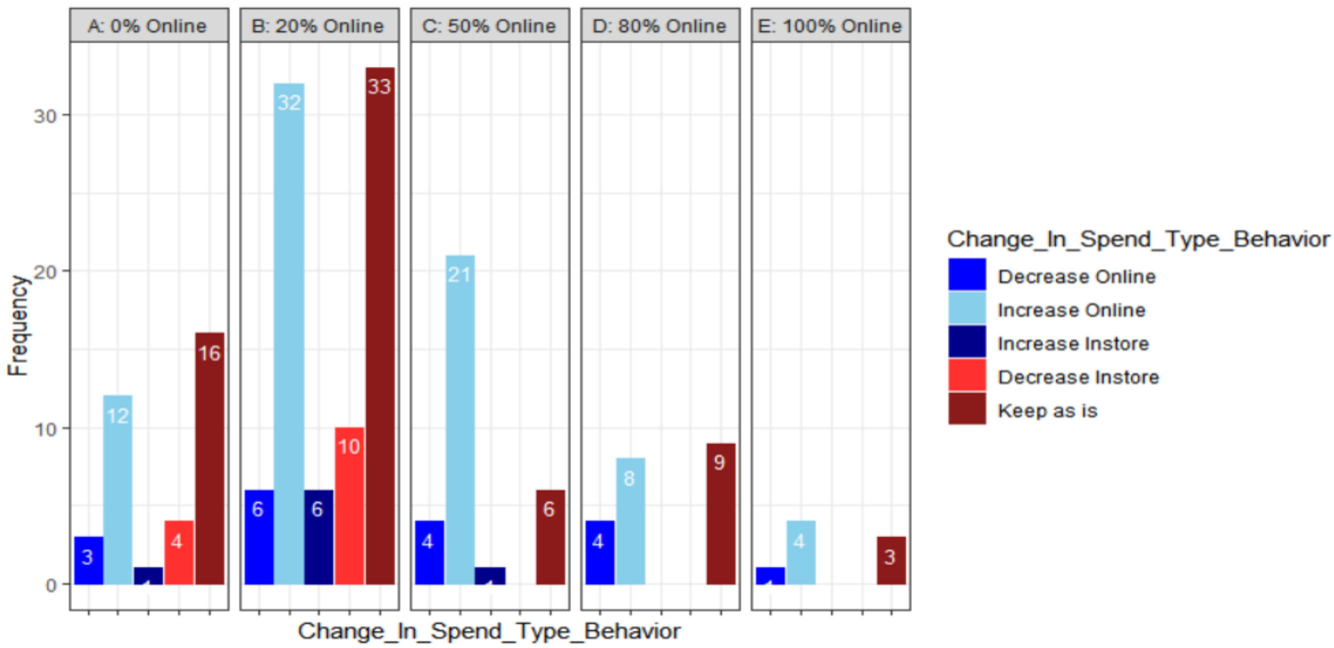


Figure 8 shows if the respondents planned to change their current spending behaviors. Overall, the majority of the respondents wanted to change their spending behaviours by increasing their online spending. For the respondents who were not spending money online, the majority (n=16) wanted to keep their current spending behaviours, followed by n=12 who wanted to increase their online spending. Amongst the participants who were doing all their shopping online, four wanted to increase their overall online spending, three wanted to keep their spending as is, and one wanted to decrease their spending. In this category, none of the respondents were looking to move to more in-store spending.

Figure 8: Online challenges

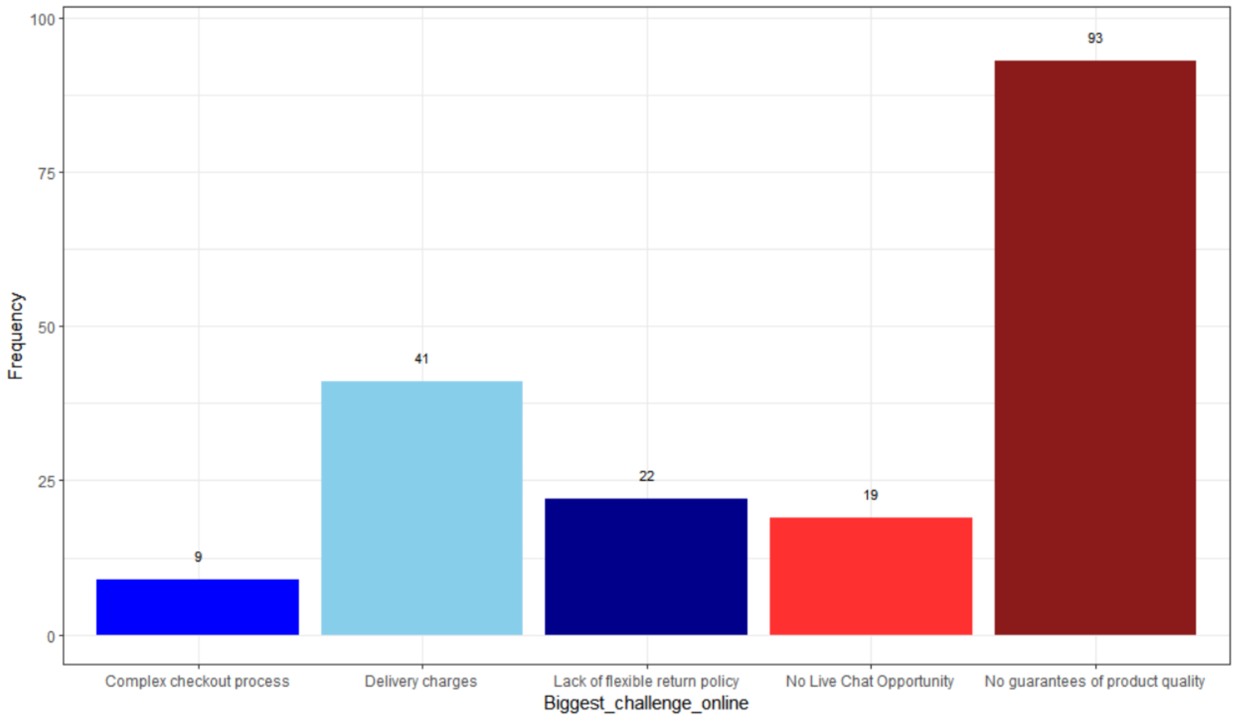
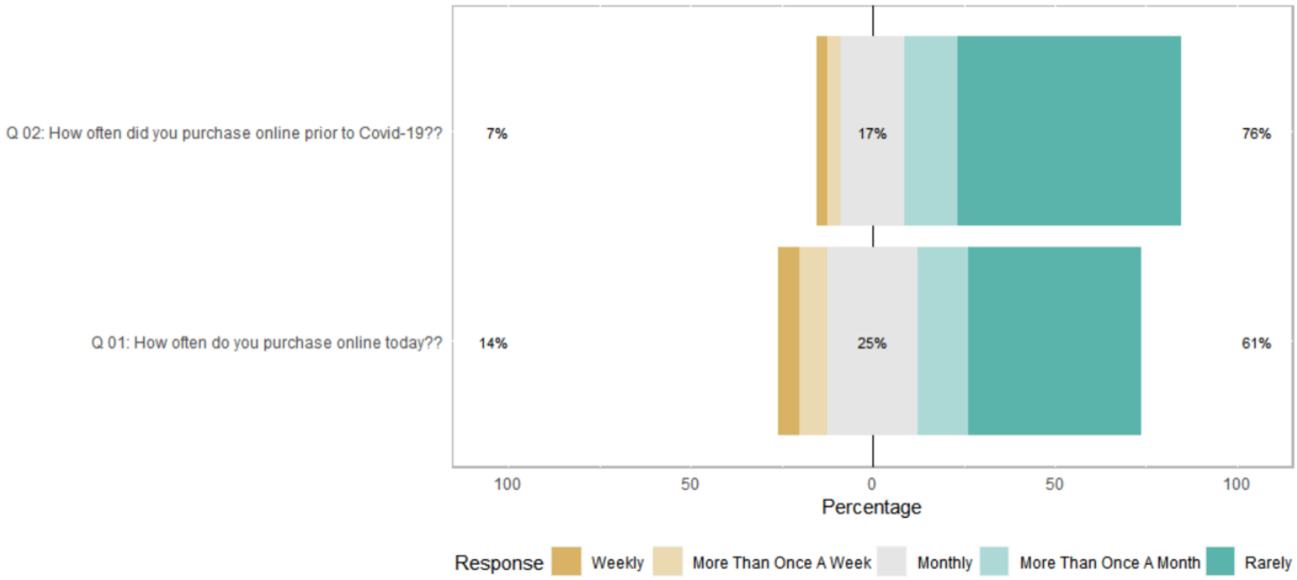


Figure 9 shows the frequency of respondents' concerns with online purchases. The majority of the respondents said that the biggest challenge is that there is no guarantee of product quality (n=93), with delivery charges being the second most selected concern (n = 41). This was followed by a lack of flexible return policy (n=22) and a lack of live chat opportunities (n=19). Finally, a complex checkout process was the least common problem at n=9.

Figure 9: Online spend pre and post Covid-19



This view shows the responses to the two Likert scale questions. In both cases, that is before and after Covid, the majority of the respondents rarely made online purchases, however their “Rare” responses decreased by 15% after Covid, that is, from 76% prior to Covid to 61% after Covid. The second most common response was “Monthly”, which saw an 8% increase from 17% before Covid to 25%.

4.4. MEASURE OF RELIABILITY

Table 2: Analysis of reliability of the Likert Scale questions

```
Reliability analysis

  raw_alpha std.alpha G6(smc) average_r S/N   ase mean sd median_r
      0.71      0.71    0.56      0.56 2.5 0.042  4.1  1     0.56

    95% confidence boundaries
         lower alpha upper
Feldt     0.61  0.71  0.78
Duhachek  0.63  0.71  0.79

 Reliability if an item is dropped:
                                                            raw_alpha std.alpha G6(smc) average_r S/N alpha se var.r med.r
Q 01: How often do you purchase online today??                   0.66      0.56    0.31      0.56 1.3       NA     0  0.56
Q 02: How often did you purchase online prior to Covid-19??      0.47      0.56    0.31      0.56 1.3       NA     0  0.56

 Item statistics
                                                              n raw.r std.r r.cor r.drop mean  sd
Q 01: How often do you purchase online today??              184  0.90  0.88  0.66   0.56  3.9 1.3
Q 02: How often did you purchase online prior to Covid-19?? 184  0.86  0.88  0.66   0.56  4.3 1.1

Non missing response frequency for each item
                                                               1    2    3    4    5 miss
Q 01: How often do you purchase online today??              0.06 0.08 0.25 0.14 0.48    0
Q 02: How often did you purchase online prior to Covid-19?? 0.03 0.04 0.17 0.15 0.61    0
```

Cronbach's alpha measures the consistency of how closely a set of items are related as a group. This set of results shows a Cronbach's alpha of 0.71, which is above the 0.7 benchmark and thus demonstrates the reliability of the data. According to Ursachi, Horodnic & Zait (2015), an alpha of 0.6-0.7 indicates an acceptable level of reliability. Values higher than 0.95 might indicate redundancies, however (Ursachi, Horodnic, & Zait, 2015). Removing either of the two measures would not be ideal, as the alpha would reduce to less than 0.7 in both cases.

Ursachi, Horodnic & Zait (2015) mentioned that Cronbach's alpha was introduced in 1951 by Cronbach as an alternative method for testing the reliability of scale.

To study ordinal reliability, the questionnaire was divided up as follows:

Table 3: Data set

Question	Data Type	Variable
a) Which age group do you belong to?	Ordinal	Ord1
b) How safe do you feel sharing your card details online?	Ordinal	Ord2
c) How often do you purchase online?	Ordinal	Ord3
d) How often did you purchase online prior to Covid-19?	Ordinal	Ord4
e) How many hours do you spend shopping online per week?	Ordinal	Ord5
f) How much do you spend on shopping a month?	Ordinal	Ord6
g) How much do you buy in an online vs. a physical store?	Ordinal	Ord7
h) Do you see this pattern (g) changing or remaining?	Ordinal	Ord8
i) Which of the following is important to you when shopping online? Select up to three in order of importance.		X
j) What is your biggest challenge you face when shopping online?	Nominal	X
k) Which gender do you classify yourself as?	Nominal	X

Questions that are tagged as ordinal were tested for reliabiility. Ordinal alpha as proposed by Gadermann, Guhn & Zumbo (2012) was employed.

Polychoric correlations

	Ord2	Ord3	Ord4	Ord5	Ord6	Ord7	Ord8
Ord2	1.00						
Ord3	0.33	1.00					
Ord4	0.30	0.65	1.00				
Ord5	-0.01	-0.17	-0.25	1.00			
Ord6	0.07	0.37	0.19	-0.26	1.00		
Ord7	0.24	0.42	0.35	-0.09	0.31	1.00	
Ord8	0.13	0.05	0.09	-0.12	0.18	0.18	1.00

From polychoric correlation, we see that that all variables have a correlation less than 70%, the number of hours spend shopping online on a weekly basis has a negative correlation with all other variables. Polychoroc correlation was first proposed by Karl Pearson in 1900, it is used to meaasure association of ordinal variables (Ekstrom, 2015). Olsson (1979) argues that in behavioural sciences, data are usually recorded as ordinal due to the nature of variables such as attitude items, likert iems, etc.

Polychoric correlation relaibility analysis

```
Reliability analysis
Call: alpha(x = polychoric_ord$rho, check.keys = TRUE)

  raw_alpha std.alpha G6(smc) average_r S/ joN median_r
      0.67      0.67    0.69      0.23 2.1     0.19

    95% confidence boundaries
      lower alpha upper
Feldt  0.09  0.67  0.93

 Reliability if an item is dropped:
      raw_alpha std.alpha G6(smc) average_r S/N  var.r med.r
Ord2       0.66      0.66    0.67      0.25 1.9 0.0248  0.19
Ord3       0.58      0.58    0.56      0.18 1.4 0.0097  0.18
Ord4       0.59      0.59    0.59      0.20 1.5 0.0153  0.18
Ord5-      0.68      0.68    0.68      0.26 2.1 0.0254  0.24
Ord6       0.64      0.64    0.64      0.23 1.7 0.0282  0.18
Ord7       0.62      0.62    0.64      0.21 1.6 0.0263  0.18
Ord8       0.69      0.69    0.69      0.27 2.2 0.0249  0.26
```

The overall ordinal alpha is 0.67, this is greater than 0.6 which means that the factors are reliable.

4.5 MEASURE OF CENTRAL TENDENCY – HYPOTHESES

Due to the nature of the data, i.e., a mixture of nominal and ordinal data, a non-parametric technique was used to analyse them. The following non-parametric approaches were employed:

- The Wilcox test.
- The Wilcox signed-rank test.
- The Kruskal Wallis test.

Table 4:The relationship between consumer online monthly spend vs card safety details

```
# A tibble: 5 x 6
  Sharing Card Details Online   count  mean    sd      median   IQR
1 Very Unsafe                    35   3.74     1.42       4       1.5
2 Not Safe                       55   3.84     1.27       4       2
3 Neutral                        63   4.13     0.907      4       1
4 Safe                           25   3.2      1.12       4       1
5 Very Safe                      6    4.17     0.753      4       0.75


      Kruskal-Wallis rank sum test

data:  Monthly_Spend by Card_Detail_Share_Name
Kruskal-Wallis chi-squared = 13, df = 4, p-value = 0.01
```

In this hypothesis, the aim was to test if the respondents' monthly online spend was the same for all the consent types regarding online card detail sharing safety. The Kruskal Wallis test was used to measure this as it checks if two or more levels have an equal distribution or not. The null hypothesis said that the groups were equally distributed while the alternative said otherwise

Table 5: Has online shopping spend increased since Covid-19?

```
      Wilcoxon signed rank test with continuity correction

data:  Spend_Analysis_Data$Before_Covid_Spend and Spend_Analysis_Data$After_Covid_Spend
V = 2618, p-value = 0.000002
alternative hypothesis: true location shift is greater than 0
```

To check this hypothesis, the aim was to see if online spend increased with the advent of Covid-19. The Wilcox paired test was used, which is a nonparametric statistical test and compares two paired groups for differences in behaviour.

Table 6: Does gender play a role in online shopping habits?

```
# A tibble: 2 x 6
  Gender_Name count  mean    sd median   IQR
1 Female        120  3.48  1.04      3     1
2 Male           57  3.47  1.09      4     1

      Wilcoxon rank sum test with continuity correction

data:  Card_Details_Sharing by Gender_Name
W = 3382, p-value = 0.9
alternative hypothesis: true location shift is not equal to 0
```

In this test, the null hypothesis states that the behaviour is the same regardless of gender, while the alternative hypothesis says that behaviour is different per gender. The results show a p-value of 0.9, which is greater than 0.05, thus the null hypothesis that spend behaviour is not gender driven is accepted.

Table 7: Do customers' security concerns impact their future online spend?

```
# A tibble: 2 x 6
  Security_Group count  mean    sd median   IQR
  <chr>          <int> <dbl> <dbl>  <dbl> <dbl>
1 Safe Group        31  3.39  1.12      4     1
2 Unsafe Group      90  3.8   1.33      4     2

      Wilcoxon rank sum test with continuity correction

data:  Future Spend by Security Concern Group
W = 1041, p-value = 0.03
alternative hypothesis: true location shift is not equal to 0
```

In this hypothesis, the aim was to test if online future monthly spend is driven by a customer's online security concerns. The Wilcox test was also used to test this hypothesis. The null hypothesis for this test states that security concerns have no impact on future monthly online spend, that is, intention to spend online in the future is the same regardless of the respondents' security concerns. The alternative hypothesis says that the intention to spend in the future is driven by security concerns.

A p-value of 0.03 was obtained in the test, which is less than 0.05, thus the null hypothesis that security concerns have no bearing on future spend is rejected. Through these results it can be seen that respondents who feel safe sharing their card details online intend to keep spending online.

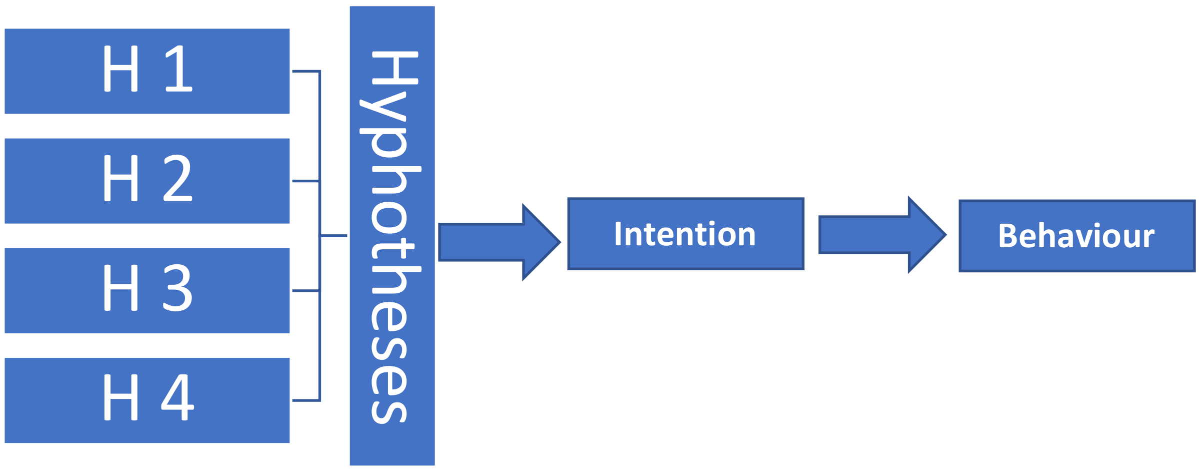
4.6 PATH MODELLING

Table 8: Summary of the statistical results analysis in relation to the hypotheses

Hypotheses			a	P-value	Results
Hypothesis 1	H1	Safety → card sharing details	0.05	0.01	Reject the null hypothesis
Hypothesis 2	H2	Convenience → online spend the same pre Covid-19	0.05	0.00002	Reject the null hypothesis
Hypothesis 3	H3	Gender influence → female vs male	0.05	0.9	Accept the null hypothesis
Hypothesis 4	H 4	Security concern → future spend influence	0.05	0.3	Reject the null hypothesis

The conceptual framework below (see Figure 4.10) is based on the rejection/acceptance of the hypotheses.

Figure 10: Conceptual Framework



H1 = Safety card sharing details, H2 = Online convenience pre Covid, H3 = Gender role in online shopping, H4 = Security concern for future online spend

The Theory of Reasoned Action (TRA) was employed to develop a conceptual framework, as the TRA was used to explain consumer behaviour and the intentions to perform online shopping. This theory does not indicate a particular belief, however it explains what predicts the behavioural intention of people, which further predicts actual behaviour. The TRA was employed for this study as it has been extensively used to determine behavioural intentions and behaviours. Considering that this study aimed to understand the factors that drive consumers to shop online, the TRA was adopted.

Figure 11, illustrates that four hypotheses were used to determine the consumers intentions to buy online. The intention symbolises the strength at which the act will be performed and that ultimately leads to a certain behaviour. The behavioural intention is how the consumer functions ultimately. The adoption of e-commerce during the Covid-19 phase shows that consumers adapt to different behaviours, the intention of online shopping will continue after covid. The rise of digital platforms and enhanced e-commerce channels has shown to be adopted by most retailers post Covid-19 and this suggest that the growth in online shopping is set to accelerate.

4.7 SUMMARY OF RESULTS

> *$H1_o$: Consumers' monthly online spend is the same regardless of how they perceive card sharing safety.*

The aim of the test was to understand customers' concerns with regards to sharing their card details when shopping online. The Kruskal Wallis test was used, as it checks if two or more levels have an equal distribution or not. The null hypothesis says that the groups are equally distributed while the alternative says otherwise. A Chi-Square of 13 and a p-value of 0.01 were obtained; this p-value was less than an alpha of 0.05. This means that the null hypothesis is rejected.

$H2_o$: Consumer online spending before Covid-19 was greater or equal as after Covid-19.

For this hypothesis, the researcher wanted to test if online spending after Covid-19 increased. The Wilcox paired test was used to test this.

The null hypothesis was that online spending before Covid-19 was greater than or equal to online spending after Covid-19, while the alternative hypothesis was that online spending after Covid-19 was greater than online spending before Covid-19.

A p-value of 0.000002 was obtained, which is less than 0.05. This means that the null hypothesis could be rejected, i.e., online spending increased after Covid-19.

$H3_o$: Online card consumer spending is driven by gender

In this hypothesis, the aim was to test if gender has any role in online spending habits. The Wilcox test was used to assess this.

The null hypothesis was that online security concerns are the same for both genders.

A p-value of 0.9 was obtained, which is more than 0.05. This means that the null hypothesis was accepted, i.e., it cannot be assumed that online shopping spending is gender-based.

$H4_o$: Consumer security concerns have no impact on future monthly online spending

This hypothesis asked if online future monthly spending is driven by customers' online security consent. The Wilcox test was used to assess this.

The null hypothesis was that monthly online spending is the same, regardless of future security consent.

A p-value of 0.03 was obtained, which is less than 0.05. This means that the null hypothesis was rejected, i.e., security consent has an impact on a customer's future monthly online spending. Further, we can see that customers who feel safe sharing their card details online spend more (spend more than 5K).

4.8 CHAPTER SUMMARY

Chapter 4 provided statistical observations and empirical findings regarding e-commerce consumers’ buying behaviour based on the data collected. The researcher discussed the selection of data and provided an overview of the summary statistics, an analysis of statistical results in relation to the hypotheses, the conceptual framework employed and an overall summary of the findings based on the hypotheses.

CHAPTER 5: DISCUSSION

5.1 INTRODUCTION

This chapter examines the findings set out in the previous chapter, and presents a discussion based on the hypotheses results and the impact they have on the objectives of this study. Current literature will also be discussed in light of the findings of the study. This chapter will conclude by discussing the implications of the results in terms of online consumer buying behaviours.

5.2 FINDINGS

5.2.1 Consumer Monthly Spend and Online Card Details Sharing

$H1_{0:}$ Consumers' monthly spend is the same regardless of how respondents perceive card sharing safety.

$H1_{a:}$ Consumers' monthly online spend differs based on card sharing safety concerns.

There is no evidence supporting the hypothesis that monthly spend online is the same regardless of how respondents perceive card safety. Meskaran, Ismail & Shanmugam (2013) argued that consumers buying online are generally as concerned with the risk involved in sharing their credit card details online as using the same card in-store. With the rise of digital platforms and enhanced e-commerce channels, this suggest that the growth in online shopping is set to accelerate. A Chi-Square of 13 and a p-value less than an alpha of 0.05 were obtained, thus the null hypotheses was rejected.

5.2.2 Online spend before and after Covid-19

$H2_{o:}$ *Consumer online spending before Covid-19 was greater or the same as after Covid-19.*

$H2_{a:}$ Online shopping spend after Covid-19 has increased compared to online spend before Covid-19.

The null hypothesis that online consumer spending pre Covid-19 was the same as post Covid-19 was rejected, which supports literature by Sayyida, Hartini, Gunawan & Husin (2021). Those authors found that an increase in online sales during the Covid-19 pandemic showed consumers increasingly engaging in online shopping behaviours.

Consumers' appetite for online shopping might be motivated by the enhancement of digital platforms and the accessibility of those digital channels. Although many customers were introduced to online shopping under difficult circumstances, it has made life easier for those consumers who cannot or do not want to embrace in-store shopping. It remains unclear as to how the pandemic has changed the opinions of online shopping on consumers, however (Tyrvainen & Karjaluoto, 2022). The TPB incorporates perceptions of control over behaviour performance as an addition predictor to TRA nonvolitional behaviours (Conner & Armitage, 1998). This theory suggests that Covid-19 was a situation that could not be controlled, thus consumers were forced to change their behaviours and adapt to other means of shopping.

5.2.3 The role of gender in online shopping spend habits

$H3_{0:}$ Online card consumer spending is driven by gender.

$H3_{a:}$ Gender has no influence on consumers' online card spend.

There is no evidence to suggest that online card sharing concerns are associated with a specific gender. The hypothesis Males and females are usually drawn to digital platforms by different needs, which leads to their purchasing intentions. According to Lin, Featherman, Brooks & Haijli (2019), men are drawn to a specific webpage by the interactivity of a website, whereas women are drawn by vividness. The statistical results could not prove that online shopping is influenced by a specific gender, although a study conducted by Lin et al. (2019) demonstrated that gender is one of the most common market segmentation variables when it comes to the perception of online shopping and reactions to online product presentations.

For the purpose of this study, there was no specific classification between the types of spending. The questions were limited to online shopping, with no specifics on product type.

5.2.4 Impact of consumer security concerns in online future spend

$H4_{o:}$ Consumer security concerns have no impact on future monthly online spending.

$H4_{a:}$ Security concerns have an impact on consumers' future monthly online spending.

The null hypothesis was rejected in favour of the alternative, i.e., consumers' security concerns have an impact on their future online spending. The TRA was applied to test future online shopping intention against trust of sharing card information online. Customers who were less concerned about the safety of their future online spending fell into the upper spend segment.

Although financial security concerns still play a big role amongst most consumers when shopping online, the sample proved that consumers will still utilise online services. According to a study by Kim & Benbasat (2003), internet shopping continues to pose security concerns for consumers, although shops that trade online constantly provide security related concerns ensuring that those concerns are taken care of. This theory supports the hypothesis that there is a security concern about online card spending for consumers. A study by Shuchinprakarn (2005) found that behavioural intention is proposed to influence the intention to share card details in order to shop online. The findings suggest that consumers have embraced the change to online shopping and are likely to keep this behaviour as businesses are constantly improving their e-services, ensuring safer and more reliable e-commerce transactions.

5.3 HYPOTHESES RESULTS

Hypotheses	H_o	**Results**
Consumers' monthly spend is the same regardless of how consumers perceive card details sharing safety.	H1	*Rejected
Consumer online spending before Covid-19 was the same a Covid-19	H2	*Rejected
Online card consumer spending is driven by gender	H3	*Fail to reject
Consumers' security concerns have no impact on the future r online spend	H4	*Rejected

5.4 CHAPTER SUMMARY

This chapter discussed the findings set out in Chapter 4 regarding which factors influence online consumer shopping behaviour. Hypothesis 3 was the only hypothesis to be accepted when it was found that there was no supporting evidence that gender is an influence.

CHAPTER 6: CONCLUSION

6.1 INTRODUCTION

This chapter highlights the main findings of the study before discussing the implications of those findings. The chapter also highlights the limitations and recommendations of the study.

6.2 MAIN FINDINGS

The key objective of this study was to investigate what factors are associated with consumers' online shopping behaviour. The research was developed to test the differences in consumers' online shopping behaviours as they relate to the Covid-19 pandemic. Three of the four hypotheses developed were found to be supported. The test employed to assess the hypotheses suggested that the variables in research questions drawn from null hypotheses had an impact on online shopping behaviour, which was supported by the rejection of the null hypotheses that advocated statistical significance.

It is critical to note that the results obtained for this study are not to be generalised, due to the nature of the data which were both nominal and ordinal. Models for ordinal data were used to measure the relationships between a null and alternative hypothesis. The statistical test failed to reject *H3: Online consumer card spend is driven by gender.*

The below outlines the achieved objectives of the study:

- To determine if consumer monthly online spending is the same regardless of the card details sharing safety. The argument on the spending behaviour involving card sharing details were articulated.
- To determine if consumers' online spending before Covid-19 was greater or equal to online spend after Covid-19. It was found that spending before Covid-19 was significantly lower than spending after, which suggests that the intervention had an impact on online spending.
- To investigate the role played by gender in consumers' intention to buy online. Gender does not play a significant role in online shopping behaviour.
- To determine the impact on future online monthly spend relating to consumers sharing their card details, it is found that participants will continue to spend on online shopping.

6.3 MANAGERIAL IMPLICATIONS

The aim of this study was to reflect on the different perspectives of consumers when it comes to online shopping post the Covid-19 pandemic. With the emergence of digitisation in online retail, it is worthwhile for retail businesses to develop strategies that will attract customers to use their online services. Covid-19 forced consumers' behaviours to change, yet they desire more reliable, accessible and convenient methods of shopping. The digital transition brought about by the pandemic indicates that a lot needs to be considered by retail marketers if they are to address consumers' needs and stay ahead of their competition.

According to Sayyida, Hartini, Gunawan & Husin (2021), first world countries are addressing the need of digital media to promote economic growth and customer acceptance, with literature on consumer behaviour suggesting that consumers rely on digital information about a product before they decide to buy it. It may be evident that retailers in South Africa need to consider collaborating with BigTech companies to enhance their existing digital marketing strategies in order to meet consumers' online shopping needs.

In addition, it is apparent that there is a window of opportunity for retailers to cater for consumers' desired online shopping experiences, such as improving security measures to mitigate internet fraud. There is no evidence proving influence of gender role in online shopping behaviour, although previous studies has shown that men are more drawn to internet compared to women. Online shopping preference seem to have captured both genders equally.

Pentz, Preez & Swiegers (2020) highlighted that social interactions might play a role in how consumers choose to shop, i.e., some consumers choose to engage in online shopping because of the product type they are buying and the fear of being rejected or judged by society. The findings from this study suggest that Covid-19 led to an increase in online shopping, thus retailers can use these insights to develop effective marketing strategies that will assist in shifting consumers' shopping behaviour into online shopping.

6.4 LIMITATIONS AND FUTURE RESEARCH

The challenges brought about by the Covid-19 pandemic forced people around the globe to change their behaviours, some of which can be seen in the growth of online shopping. Consumers who were not accustomed to shopping online were compelled to utilise digital platforms as a means of satisfying their needs while reducing the risk of getting infected. It can thus be concluded that the Covid-19 pandemic has had an impact on online consumer behaviours, based on the results of this study.

The first limitation of this study is that it does not represent the true population size of online consumers, as participants were selected through convenience sampling. Another limitation is the use of ordinal reliability coefficiences that may have arisen in the calculation of the correlation matrix. Gadermann, Guhn & Zumbo (2012) emphasised the importance of estimating correlation matrices for scales containing a large number of items that may require computer processing power. A substantial amount of time was spent processing due to the type of data collected (ordinal and nominal).

Thirdly, the timing of the survey might have impacted the results, as the survey was conducted during the holiday season in South Africa when consumers might have been in a holiday state. Although the survey was not lengthy, the results showed a sign of fatigue as 6.7% did not submit their responses. A mixed method of both quantitative and qualitative research could give a different perspective to the results, however the study is believed to add value to the understanding of Covid-19’s impact on digital consumer behaviour. Further research could aim at increasing the sample size, perhaps with different structured questions.

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