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# Factors that impact the adoption of online food delivery services by urban consumers in South Africa

**Capri, Talga**

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# Factors that impact the adoption of online food delivery services by urban consumers in South Africa

**Talga Capri**

**Student number: 979412**

**Student email: 979412@students.wits.ac.za**

**Student mobile: 082 991 0230**

**A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management in the field of Digital Business**

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# ABSTRACT

Online Food Delivery is defined as the process of ordering food from a website or application for the following categories; fresh produce and groceries, ready-made meals or “take-aways or meal kits (Hirschberg, Rajko, Schumacher, & Wrulich, 2016). Online Food Delivery (OFD) services offers consumers convenience of access and time savings but not all consumers may trust OFD services and may perceive risks that can undermine OFD adoption and use. This research examined the factors influencing consumer adoption of OFD services among urban consumers in South Africa. This study followed a positivist paradigm and developed an extended Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) model comprising twelve hypotheses. A self-administered online cross-sectional survey was used to gather the data from a convenience and snowball sample of urban consumers drawn from a local University and the researcher’s professional network. A final usable sample of 180 consumers was available for analysis.

The sample represented an adequate number of both male and female respondents, higher income earning groups, mainly over the age of 35, from multi-individual households with access to the requisite technologies, and who were familiar with OFD purchasing. The discriminant and convergent validity of constructs as well as the reliability of the construct measures was confirmed, except for the UTAUT2 construct of habit which was dropped from the model. Correlation and regression analysis was performed to confirm the strength and direction of the relationships between the proposed construct. Results supported performance expectancy, effort expectancy, social influence and trust as the most significant factors driving OFD adoption. These findings have implications for practice such as strategies around 1-Click ordering, intuitive application navigation, continuous social engagement methods, rewards, loyalty programs, maintaining quality and freshness of meals and an efficient delivery service. Suggestions for future research are provided.

**Keywords:** Online Food Delivery (OFD), Online Retail, e-Commerce, m-Commerce, Consumer Adoption, Technology Adoption, Retail, South Africa, Factors Influencing Adoption, Urban Consumers, Extended UTAUT2, Perceived Risk and Trust, Platforms.

# DECLARATION

I, Talga Capri, declare that this research report 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 Management in the field of Digital Business at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Name: Talga Capri Signature: T Capri

Signed at ……Johannesburg……

On the ……21…….. day of ……June…… 2021

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# LIST OF ACRONYMS

| | |
|---|---|
| Analysis of Variance | ANOVA |
| Actual Use | AU |
| Behavioural Intention | BI |
| Business to Consumer | B2C |
| Diffusion of Innovation | DoI |
| Electronic Commerce | e-Commerce |
| Effort Expectancy | EE |
| Facilitating Conditions | FC |
| Hedonic Motivations | HM |
| Mobile Commerce | m-Commerce |
| Online Food Delivery | OFD |
| Principle Component Analysis | PCA |
| Performance Expectancy | PE |
| Perceived Risk | PR |
| Perceived Trust | PT |
| Price Value | PV |
| Social Influence | SI |
| The Statistical Package for Social Scientists | SPSS |
| Technology Acceptance Model | TAM |
| Theory of Planned Behaviour | TPB |
| Theory of Reasoned Action | TRA |
| Unified Theory of Acceptance and Use Technology | UTAUT |
| Variety Seeking | VS |

# 1 INTRODUCTION

## 1.1 Purpose of the Study

The purpose of this study is to gain a deeper understanding of the factors that influence consumer adoption of Online Food Delivery (OFD) services. A quantitative research approach is followed whereby a research model is developed by extending the Unified Theory of Acceptance and Use of Technology (UTAUT2) by including consumers' risk and trust perceptions. The model is then tested using primary data collected via an online questionnaire administered to a sample of participants who are banked, have access to smartphones and data residing in urban (highly dense areas, metropolitan areas, cities, towns) areas within South Africa.

## 1.2 Context of the Study

The World Wide Web has changed the way society functions in everyday life, and new technological innovations are rapidly transforming consumer behaviours. Traditionally, the introduction of new technologies was more prevalent in the business context. Kane, Phillips, Copulsky, & Andrus (2019) asserts that over the past two decades, technology adoption by individuals has surpassed business and that individuals adopt new technology much faster than organisations.

Retail consumption has evolved to a point where most goods and services that consumers have traditionally bought in a physical store are available online. According to Statista (2020) the South African online retail market is estimated to be worth R57-billion by 2020 growing to R74-billion by 2024. Yet, online still accounts for a small percentage of total retail. Research and Markets (2019) highlights that only 1% of the retail market is attributed to the online channel. Goldstuck (2019) indicates that the South African online retail market only contributes around 1.4% of total retail by reaching the R14-billion mark in 2018. According to Euromonitor International (2019) online sales in South Africa will grow close to three times as fast as in-store sales over the period of 2018-2023.

From a global perspective, according to Digital Commerce 360 (2019), 16.4% of all retail sales were derived via online channels in 2018.

The OFD market will play an essential role in this sector's growth including prospects for employment opportunities and customer convenience. The sector already has an estimated market share of R13-billlion in 2020, predicted to grow to R18.6-billion in 2024, resulting in a cumulative annual growth rate of 9.7% from 2020-2024 (Statista, 2020).

OFD consists of three types as depicted in Figure 1. Online Food Delivery Industry. This study is focused on "category 2", i.e., Ready-made meals or "take-aways".

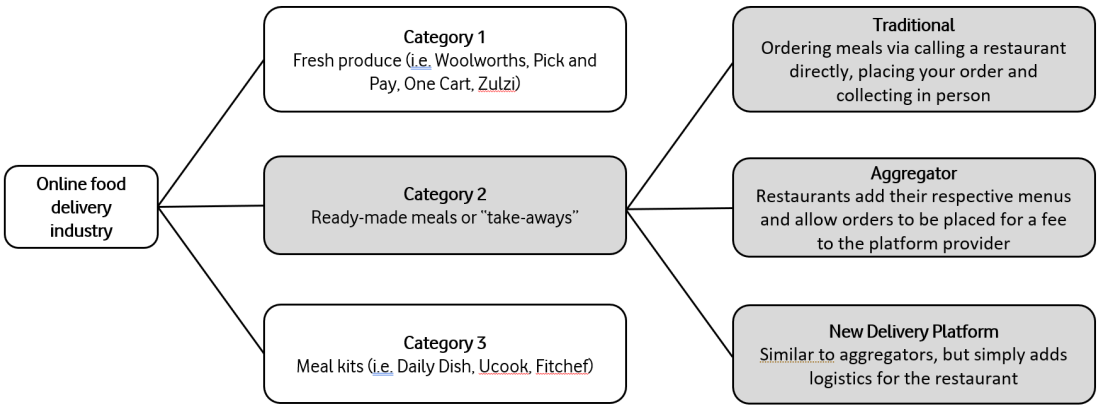



**Figure 1: Online Food Delivery Industry (Source: Author's independent research)**

The ready-made meals or "take-aways" category within OFD business started in the 1980's (Nina & Co, 2013). At that time, a customer placed an order via telephone call to the local restaurant and collected the order or waited for the restaurant to deliver to their door. Online ordering has changed these process steps. Hirschberg, Rajko, Schumacher, & Wrulich (2016) state that there are three models within category 2 of the OFD sector. The first model is where a fast-food chain, such as McDonald's, provides the entire value chain from order to delivery, but only for food from the McDonald's menu. The second is an aggregator model whereby multiple restaurants are listed into a single platform which simply facilitates placing the order. The third model which is known as the new-delivery platform model is similar to an aggregator model but also provides the necessary logistics for delivery via independent contractors as one side of the

platform model from the restaurant to the customer's door. Examples in the South African context include UberEATS, Mr. Delivery and Order-In.

Generation Y (born 1980 – 1994) and Generation Z (born 1995 – 2009) are the key target market for OFD due to their extremely busy day-to-day schedules. OFD provides them with seamless convenience, typically via their mobile phones (Hirschberg, Rajko, Schumacher, & Wrulich, 2016). Chai & Yat (2019) advise that the number of consumers using food delivery services has grown substantially over the past decade due to the current pace of urban life together with the vast options consumers have available to them at any given time.

Additionally, continuous usage of services is promoted by improved convenience, transactional convenience allowing for multiple payment options and loyalty and rewards programs (Evens, 2014). Lastly, the advent of OFD has evolved due to key technology enablers fulfilling a pivotal role in making this technology possible; these include, mobile internet and smartphone adoption, platform business model, a multitude of online payment options, advancement in third party logistics, location based service and artificial intelligence, to name a few (Hospitality Technology, 2018).

## 1.3 Research Problem

OFD have been on the increase over the past few years and the popularity has been growing due to the convenience factor it provides customers. In a research paper on the changing market for food delivery, Hirschberg, et al. (2016) indicate that online penetration of the total food-delivery market will grow as the market matures, eventually reaching 65 percent per year.

OFD are intended to offer improved convenience, speed of ordering, rewards, ease of ordering and access across mobile devices (Deloitte, 2019). However, they may not be trusted to fulfil on promise to deliver orders completely, accurately and in the times promised (Thatcher, Carter, Li, & Rong, 2013). There may be added concerns related to payments online over apps and risks of loss should orders not be delivered correctly or match consumer expectations. (KPMG, 2017). Delivery failures might occur especially during peak ordering

times, traffic and weather. Some users might actually experience added “search costs” associated with browsing through large volumes of food providers on aggregation apps and may find applications difficult to understand in terms of order options.

Therefore, there may be a myriad of factors that impact the behavioural intention of consumers to use OFD services, and the relative and combined effects of these factors remains a research problem in need of attention. This may be particularly relevant to understand in the South African context where smart phone penetration sits at 40% according to Statista (2020), but relatively few total consumers have adopted online shopping at 1.4% (Goldstuck, 2019). Moreover, payment systems are still emerging with credit card being the dominant medium, which stands at 7% penetration with approximately 4 million active cards (Riley, 2019). Furthermore, little academic research currently exists from a South Africa context and the research conducted from an international perspective, specifically India and Malaysia may not be relevant to the South African market.

## 1.4 Research Objective

**Main objective:** Given the problem described above, the main objective of this study is to identify the factors that impact the adoption of online food delivery service by urban consumers in South Africa.

**Sub objective 1:** Explore consumer adoption through the lens of Unified Theory of Acceptance and Use of Technology (UTAUT2).

**Sub objective 2:** Extend the UTAUT2 model to also study consumer adoption though the paradigm of risk and trust.

## 1.5 Significance of the Study

This study makes three contributions. First, a theoretical contribution is made by integrating trust and risk into the UTAUT2 model as a basis for exploring online consumer behaviour.

Second, a contextual contribution is made by examining the adoption of OFD in the South African context. Within the South Africa context there is little academic research conducted around the consumer adoption of OFD. Research into OFD is occurring in other emerging markets. For example, Chai & Yat (2019) explore the emergence of the OFD sector and the key consumer adoption factors driving this growth with Malaysia. They found that the most significant positive effect on adoption was driven by convenience, in particularly within the urban areas. Karulkar, Pahuja, Uppal, & Sayed (2019) explore the food industry of India and assert that the convenience of using OFD services will provide an increase in revenue for OFD retailers and that this channel can contribute a large percentage of top line revenue and maximize profits. Within the South African context there is a clear need to determine which factors are most important to OFD adoption. It is not evident whether convenience would be as important as in the Malaysian and Indian contexts, or whether facilitating conditions might play a significant role due to low smartphone penetration and a substantial unbanked market with a lack of mobile payment options. Determining the relative effects of these different factors would contribute to better understanding OFD in the South African context and allow for comparison with other emerging market contexts.

There have been some recent studies of consumer adoption of OFD services listed in Table 1.

**Table 1: OFD Consumer Adoption Studies**

| Country | Topic | Author/s | Framework | Most Influential Construct |
|---|---|---|---|---|
| Jordan | Mobile food ordering apps: An empirical study of the factors affecting customer e-satisfaction and continued intention to reuse | Alalwan (2020) | UTAUT2 with additional constructs in Online Review, Online Rating & Satisfaction | Performance Expectancy |
| India | Examining UTAUT model to explore consumer adoption in Online Food Delivery (OFD) services | Karulkar, Pahuja, Uppal & Sayed (2019) | UTAUT with additional constructs in Hedonic Motivation & Perceived Control | Effort Expectancy |
| Malaysia | Online Food Delivery Services: Making Food Delivery the New Normal | Chai & Yat (2019) | Integrated model inclusive of constructs in Perceived Ease of Use, Time Saving, Convenience, Privacy and Security | Time Saving |

Currently there are no empirical studies that have been undertaken in South Africa. Additionally, the studies indicated above do not take into consideration risk and trust. This study will undertake to fill the gaps of previous studies in relation to theory and with an emphasis on the South African context.

Third, the study makes a practical contribution. Specifically, this research may provide useful insight to the OFD sector by obtaining a clearer view on the factors influencing consumer adoption of this technology to ensure appropriate interventions. For example, if consumer perception of delivery and performance risk are key factors for adoption. Then OFD services will need to determine how assurances can provide for on time delivery of the correct meal so as to lower risk perception and increase adoption. Similarly, if consumers report low trust in OFD then consumer adoption of OFD will depend on service providers understanding these effects and the ways in which they can improve trust. In addition, this research may assist in formulating strategies using current and new technology enablers which could impact this sector.

## 1.6 Delimitations of the Study

This study focusses on the ready-made meals or take-aways category of the OFD industry and excludes the fresh produce and meal kits categories as illustrated in Figure 1: Online food delivery industry.

Additionally, this study is aimed at consumers located in urban areas of South Africa.

## 1.7 Definition of Terms

Business Model - Creates value by facilitating an exchange between two or more independent groups (Parker, van Alstyne, & Choudary, 2016).

Electronic Commerce (e-Commerce) – Buying or selling of good or services over an electronic network (Eastin, 2002).

Mobile Commerce (m-Commerce) – Buying or selling goods or services over an electronic network through a wireless handheld device (UNCTAD, 2002).

Online Food Delivery (OFD) – Process of ordering food from a website or application.

Platform business model – Is defined as a set of subsystems and interfaces that form a common structure from which a company can efficiently develop and provide products or services. (Krishnan & Gupta, 2001) and (Muffatto & Roveda, 2002)

## 1.8 Assumptions

The following assumptions have been made regarding the study:

- Respondents will answer the survey truthfully and accurately.
- Respondents will be familiar with OFD.
- Respondents will reflect generalisable perspectives and have adequate. experience to answer questions.

# 2 LITERATURE REVIEW

## 2.1 Introduction

The objective of this chapter is to review the current literature on the study's topic. This chapter will be broken down into two areas. Firstly, it will provide an overview of e-Commerce and m-Commerce. Secondly, it presents a background on the OFD industry, the different OFD business models and delivery categories, consumer insights and trends relevant to OFD adoption, the benefits of OFD to the restaurant industry, the rise of dark kitchens and the overall OFD market impact on the South African market. Finally, the chapter will present a review of consumer adoption models, which will be drawn on to support the development of the proposed research framework.

## 2.2 Overview of e-Commerce and m-Commerce

Multiple definitions of e-Commerce have been provided by various scholars, researchers and authors. These have also evolved over time with the introduction of new technologies. Vladimir (1996) defined e-Commerce as sharing business information, maintaining business relationships, and conducting business transactions by means of telecommunication networks. Tagliavini, Ravarini, & Antonelli (2001) asserted that any economic activity conducted via the internet can be called e-Commerce. Eastin (2002) described e-Commerce as the buying or selling of goods or services over an electronic network. Turban, Lee, Liang, & Turban (2010:54) defined e-Commerce as "the process of buying, selling, transferring or exchanging products, services and/or information via computer networks, mostly Internet and Intranets". More recently, Huseynov & Yildirim (2016) simplified the definition of e-Commerce to the process of carrying out commercial transactions through computer networks, such as the Internet. In summary e-Commerce can be defined as a means of transacting over electronic networks using electronic devices. It must also be noted that according to Turban, et al. (2010) the level of digitisation of the product sold, of the selling process, or of fulfilment will determine the level of e-Commerce. If only one of these are seen

as digital, then this could be referred to as partial e-Commerce. Whereas if all elements are seen as digital, it can be seen as pure e-Commerce. Purchasing a laptop from http://www.takealot.com is an example of partial e-Commerce as only the sales process is digital, whereby purchasing an application on the App Store or Google Play can be viewed as pure e-Commerce, according to the Turban et al. (2010) definition, as all elements are digital. Notwithstanding such distinctions, this research report adopts a broader view and considers all facets of e-commerce including digital, physical products and fulfilment.

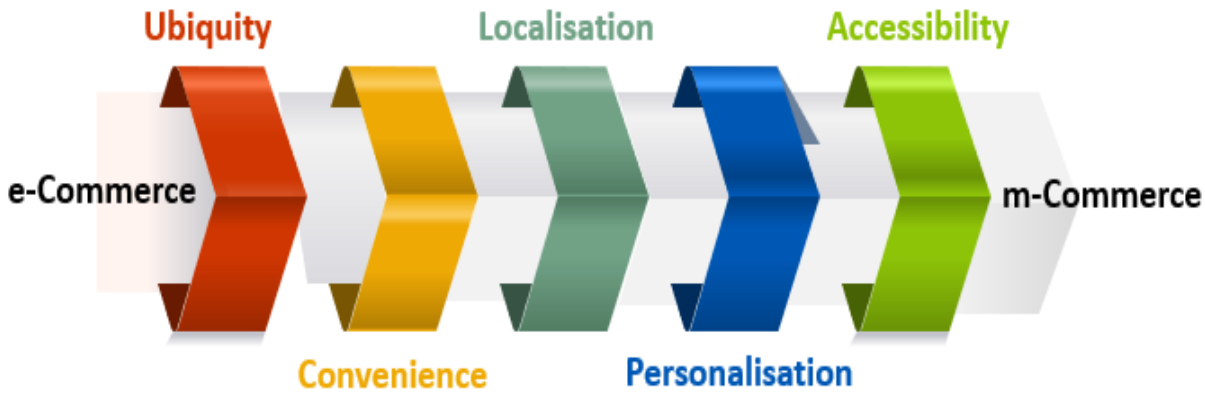
e-Commerce has been growing rapidly globally over the past few decades with Amazon.com and Alibaba driving this growth in the United States and China respectively. Jeff Bezos grew Amazon.com from a website selling books in 1995 to become one of the biggest and most successful e-commerce companies today selling retail goods, content and media services, consumer electronics, delivery and fulfilment, groceries, cloud and web services, to name a few. Not only has Amazon succeeded in the United States, but according to PWC (2019) was rated as the third biggest global company by market capitalisation with $875bn on 31 March 2019. Alibaba was launched by Jack Ma in 1999 (Alibaba, 2019) as a website to assist various Chinese businesses transacting locally and internationally and has grown into selling a multitude of services from their marketplace, through digital media and cloud computing, among other offerings. PWC (2019) rated Alibaba as seventh with a market capitalisation of $472bn. The success of both these two tech giants has spurred the growth of several other e-commerce businesses globally.

e-Commerce growth in emerging markets including South Africa has however been slow. The Journalist (2019) asserts that the key reasons for the slow growth can be related to (1) lack of a general understanding of how e-commerce works, (2) inadequate payments options, and (3) inadequate fulfilment and distribution capability.

One promising factor that might help to advance e-Commerce in the emerging market context has been increased penetration of mobile communications. The advent and growth of both mobile communication and smartphone adoption has enabled a specific form of e-Commerce, namely mobile or m-Commerce. Müller-

Veerse (2000) provides a simple definition of m-Commerce as any e-Commerce transaction conducted over mobile telecommunication networks. Balasubramanian, Peterson, & Jarvenpaa (2002) further ascertain that m-Commerce is the use of mobile devices to communicate and conduct transactions through public and private networks. UNCTAD (2002) asserts that m-Commerce is the buying and selling of good and services, using wireless hand-held devices such as mobile telephones or personal data assistants and Gartner (2020) defines m-Commerce as the delivery of e-Commerce capabilities directly to mobile service users by wireless technology. Lim & Siau (2003:27) argues that "m-Commerce is more than a mobile and wireless extension of the Web-based e-Commerce. It is an entirely new sales and promotion channel and is the enabler for a whole range of new services such as buying a Coke, paying for parking, buying train tickets, etc. via mobile phone."

m-Commerce offers some unique features over and above e-Commerce. Table 2 articulates the respective views shared by Kemper & Elke (2002), Buse & Tiwari (2007) and Junglas & Watson (2003) with Figure 2 highlighting the view shared by Junglas & Watson (2003).




Source: Junglas, I. and R. Watson, U-commerce: a conceptual extension of e-commerce and m-commerce. ICIS 2003 Proceedings, 2003: p. 55.

**Figure 2: The e-Commerce to m-Commerce Transition**

**Table 2: m-Commerce Unique Features**

| Key Advantage | Description | Literature |
|---|---|---|
| Ubiquity | The ability to access the service anywhere, from any location generally using mobile devices with internet access capabilities | Lim & Siau, 2003; Kemper & Elke, 2002; Buse & Tiwari, 2007 |
| Convenience | Generating agility and easy accessibility from a user-friendly mobile handheld device | Khosrow-Pour, 2006; Junglas & Watson, 2003 |
| Localisation | Tracking via GPS generally possible by mobile operators | Stanoevska-Slabeva, 2003; Junglas & Watson, 2003; Kemper & Elke, 2002; Buse & Tiwari, 2007 |
| Personalisation | Customisations of different personalised services available to the mobile user | Nandan, 2013;Junglas & Watson, 2003 |
| Accessibility | Linked to a user's access to a mobile network at any time from any location. | Junglas & Watson, 2003 |
| Immediacy | Real time access as in 24/7 and not limited to standard store operation hours | Kemper & Elke, 2002; Buse & Tiwari, 2007 |
| Instant Connectivity | The advent of mobile technologies from GPRS to LTE service has made this possible. | Kemper & Elke, 2002; Buse & Tiwari, 2007 |
| Proactive Functionality | Push marketing which enables the user to decide what the user want to "opt-in" for. | Kemper & Elke, 2002; Buse & Tiwari, 2007 |
| Simple authentication procedure. | Allows the user to authenticate much more securely and seamlessly. | Kemper & Elke, 2002; Buse & Tiwari, 2007 |

In addition to these attributes, m-Commerce has been driven by the following factors listed in Figure 3.

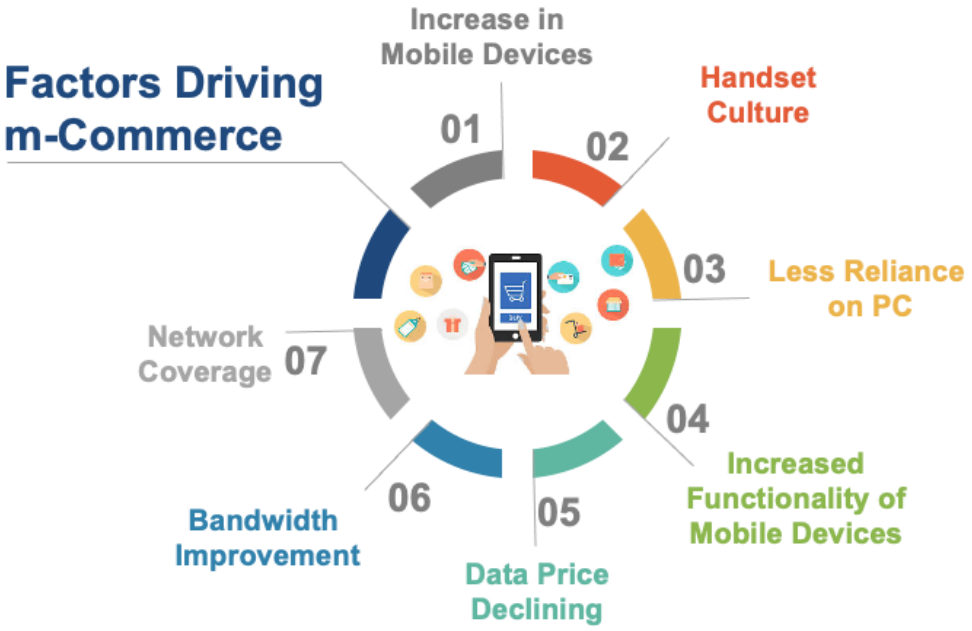



**Figure 3: Factors Driving m-Commerce (Source: Author's independent research)**

**Increase of mobile devices**: According to Statista (2016) it was estimated that there would be 4.78 billion mobile phone users by 2020 which is approximately 61.5% of global population. This paves the way for mass market business models through communication, location services and collaboration. Ricciardi (2019) states that the percentage of mobile phone subscriptions are higher than those using sanitation services.

**Handset culture**: The growth of mobile phones together with the adoption of social media especially within the millennials has been a major contributing factor of this new handset culture. Complimentary to this has been the unique features in its compact size supporting mobility, always-on and multipurpose functionality. Townsend (2000) highlights that people have become so addicted to their mobile phones that they see it as an extension of their body. Furthermore Alexander, Ward, & Braun (2007) asserts that many people tend to feel “lost” or “naked” if they forgot their phone somewhere.

**Less reliance on the PC**: The processing power of mobile devices today is very similar to what was evident in personal computers a few years ago. Additionally, software adoption through the Android’s Play Store and Apple App Store has

allowed for applications serving a similar purpose to that of the personal computer. Mobile users today can do pretty much anything that can be done on a PC. Bonnington (2015) states that anyone with a current smart phone can handle pretty much handle any task without using a laptop.

**Increased functionality of mobile devices**: Mobile devices started out as a single purpose device which simply allowed voice calling. Fast forward till today and there are a plethora of functions and capabilities inclusive of messaging, gaming, internet access, camera, maps, health, fitness, payment, media and content to name a few.

**Data prices declining**: The cost of data has been on a consistent decline in recent years. In a study of 100 countries, the Alliance for Affordable Internet (2019) highlighted that the cost of data decreased from 5.76% of monthly income to 4.69%; a 11.24% average drop in prices from 2018 to 2019. This is further highlighted in Figure 4: The average cost of 1GB as a percentage of average monthly income. Gavaza (2020) further indicates that Vodacom the largest South Africa mobile operator announced a 33% reduction in data costs from 1 April 2020. These declining costs improves the affordability within the medium to low-income market segments.

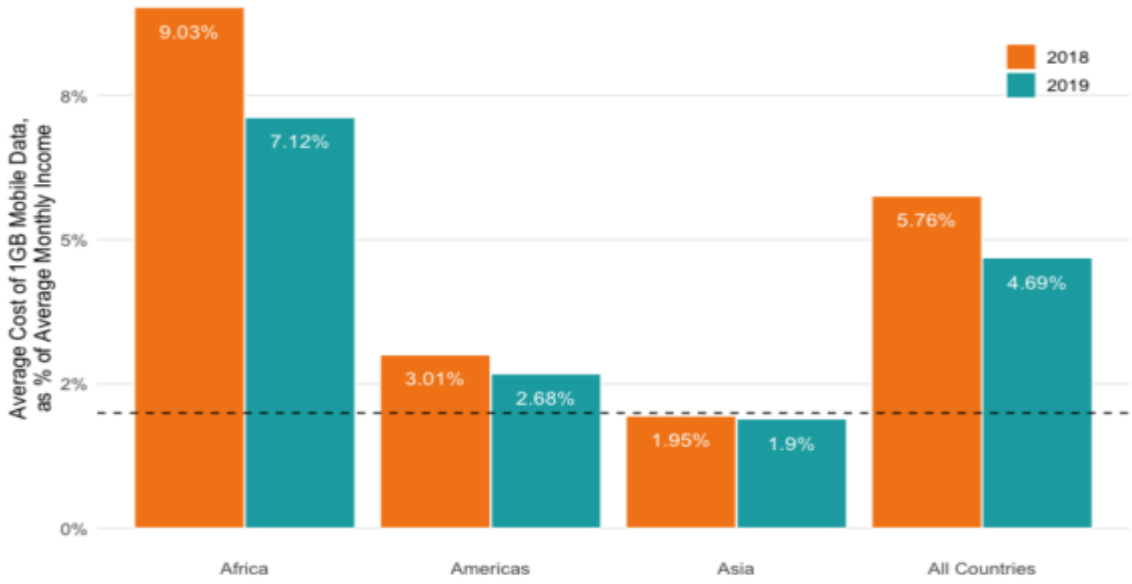



**Figure 4: The Average Cost of 1GB as a Percentage of Average Monthly Income (Source: Alliance for Affordable Internet, 2019)**

**Bandwidth improvement**: There has been a significant improvement in the real-time transfer rates of data over the past two decades. Bandwidth availability is absolutely key to the type of applications it supports. Figure 5: Evolution of Mobile Bandwidth below shows the development of 1G – 4G LTE, its speed and the respective application (Qualcomm, 2014). The more recently developed 5G is excluded in Figure 5, however one can obtain transfer rates of 1Gbps to 10Gbps (Hill & Oswald, 2020) which will allow for a whole new plethora of application possibilities.

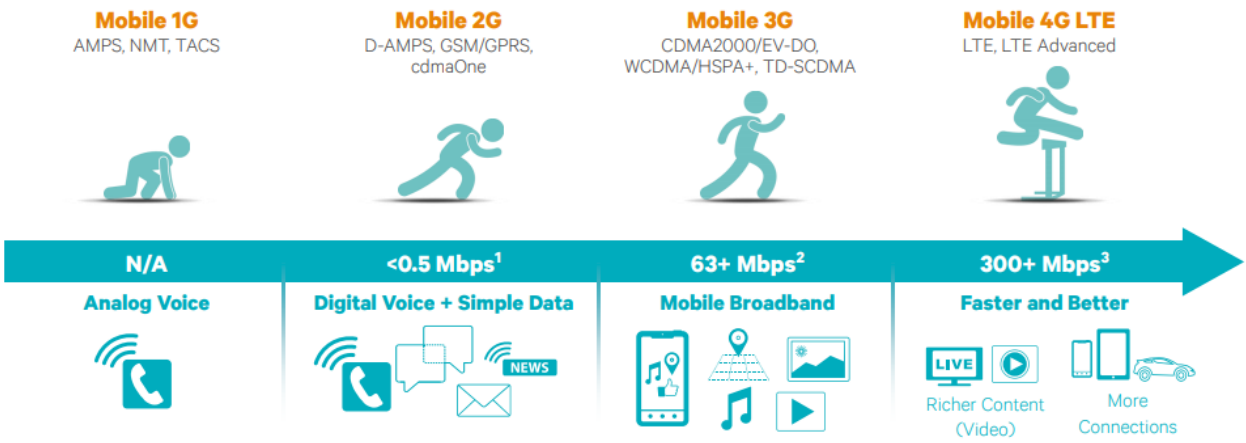



**Figure 5: Evolution of Mobile Bandwidth** (Qualcomm, 2014)

**Network coverage**: Together with bandwidth improvement, coverage of the signal is key to ensure it reaches the geographies required. Without the coverage m-Commerce simply will not be possible without a connection. Vrechopoulos, Constantiou, Mylonopoulos, & Sideris (2002) asserts that network coverage is one of the critical success factors in accelerating m-Commerce at scale. Wi-Fi coverage has also made a significant impact on factors driving m-Commerce and this combination provides for seamless and always on connectivity.

The m-Commerce attributes and drivers indicate the possible factors which will influence consumer readiness for the adoption of OFD. The benefits of m-Commerce are substantial and will allow for new business models and revenue streams that might not exist today. The following section will cover the growth of online retailing with deeper insight into the OFD industry.

### 2.2.1 The Evolving Online Retail Market

#### Pure Play versus Bricks and Mortar

With the advent of Amazon and Alibaba, there have been numerous online business models. One example is the pure-play retailer model which solely relies on online sales as a channel to market. These retailers simply purchase stock from wholesalers, store the products in warehouse and ship directly to consumer. Takealot.com started out as an example of a pure-play retailer within the South African market. However, the distinction between business models has been blurred. When Amazon.com was launched in 1995, they were a pure play online seller of books and their key competitor was Barnes & Noble bricks and mortar bookstores (Gardner & Gardner, 2000). Fast forward just over two decades and Amazon.com is venturing into physical stores and leveraging off an omni-channel approach by taking advantage of both business models. For example, it launched Amazon Books in 2015, Amazon Go in 2018 and acquired Whole Foods with 460 stores located in the United States, Canada and Britain in 2017. Amazon sees the future of retail as a blended leveraging of the advantages of both an online and physical presence (Schavarien, 2018).

#### Platforms

Platforms can be defined as a set of subsystems and interfaces that form a common structure or ecosystem from which an organisation can efficiently develop and produce a multitude of services for both enterprise and consumer consumption (McGrath, 1995; Meyer & Lehnerd, 1997; Cusumano & Nokeoka, 1998; Krishnan & Gupta, 2001; Muffato & Roveda, 2002). Platform models have not only revolutionised technology related businesses but have also had a significant impact on the retail sector.

According to Parker, Sangeet, & Van Alstyne (2016) platforms come in many varieties however is made up on an ecosystem and structure of four key players. Owners control the intellectual property, providers enable to interface for users, producers create the services and consumers utilise those services as articulated in Figure 6 below.

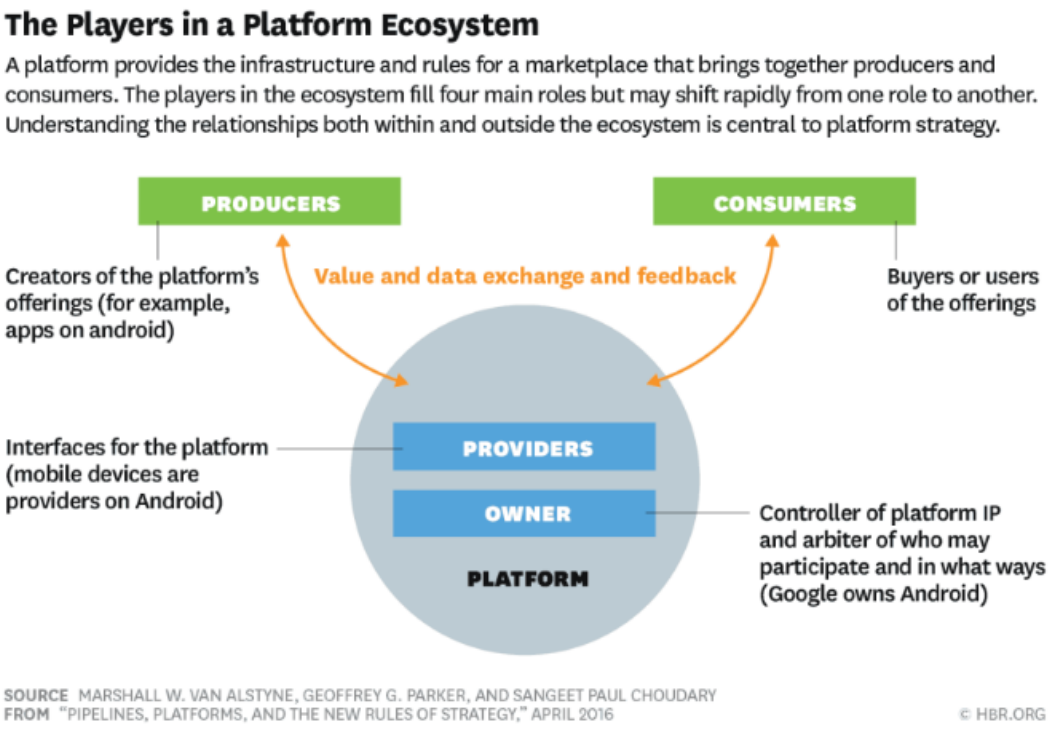



**Figure 6: The Players in a Platform Ecosystem (Parker, Sangeet, & Van Alstyne, 2016)**

Platforms comprise of two key benefits, firstly creating network effects which drive the exponential growth of users and secondly reducing transaction costs due to a common core or architecture for essential functions which can be the basis of the development of new products and services (Parker, Van Alstyne, & Choudary, 2016). Other benefits relate to value shifting outside the organisation which enables more efficient resource utilisation and ability to scale and furthermore it unlocks new sources of innovation and value creation with a closer feedback look into the players.

Platform business models has seen remarkable growth and disruption to traditional business which is evident with Uber, Airbnb and Alibaba. These organisations business models are derived on platforms and the OFD market globally has also leveraged off the platform business model. Yana (2020) asserts that food delivery globally has reached high valuations as of 2020, Doordash was valued at $13 billion, UberEats at $20 billion and Postmates at $1.85 billion

### 2.2.2 Consumer Perceptions of Online Retail

#### Advantages and Disadvantages of Online Retail

There are both advantages and disadvantages that online stores have in comparison to physical stores. Online shopping can be seen as more useful than traditional bricks and mortar shopping to some degree (Changchit, 2006; Richard, Chebat, Yang, & Putrevu, 2010; Javadi, Dolatabadi, Nourbakhsh, Poursaeedi, & Asadollahi, 2012; Clemes, Gan, & Zhang, 2014). Online stores tend to be convenient and save time due to reduced travel, no queuing, vast selection and 24/7 accessibilty anytime and from anywhere. As further postulated by Jiang, Yang, & Jun (2013) convenience could be seen as the main advantage and driver of online shopping. Online stores also provide a wealth of information about products and services you wouldn't normally review in traditional shopping. Additionally, comparison tools allows consumers to compare various types of items and also their respective prices as provided for example by http://www.pricecheck.co.za which allows for comparison analytics. Kapoor, et al. (2018) asserts that one of the major differentiating factors between marketing communication via traditional media versus the internet is the level of cross collaboration allowed and the ability to extract data from multiple sources. Power has shifted to consumers as they have access to a vast amount of information which give them control, bargaining power and various options of where to purchase an item without being harrassed by an sales person (Hellberg, 2014). These advantages are summarised in Table 3.

**Table 3: Advantages of Online Shopping (Source: Author's Independent Research)**

| Advantage | Description | Literature |
|---|---|---|
| Convenience | Purchase from anywhere and any time | Deloitte, 2019; Hirschberg, et al, 2016; Jiang, Yang, & Jun, 2013; Javadi, Dolatabadi, Nourbakhsh, Poursaeedi, & Asadollahi, 2012; Lin, 2007; McCarthy, 2020; Orpilla, 2020; Scientificwebs, 2020; Watling, McCabe, & Seedat, 2019. |
| Product Information | A depth of product information readily available | Clemes, Gan, & Zhang, 2014; Deloitte, 2019; Lin, 2007; McCarthy, 2020; Watling, McCabe, & Seedat, 2019. |
| Product Choice | A variety of products available | Clemes, Gan, & Zhang, 2014; Deloitte, 2019; Hirschberg, et al, 2016; Javadi, Dolatabadi, Nourbakhsh, Poursaeedi, & Asadollahi, 2012; Lin, 2007; Orpilla, 2020; Richard, Chebat, Yang, & Putrevu, 2010; Watling, McCabe, & Seedat, 2019. |
| Cost Savings | Purchasing products online can be cheaper and generally more special available online | Changchit, 2006; Clemes, Gan, & Zhang, 2014; Deloitte, 2019; Lin, 2007; McCarthy, 2020; Watling, McCabe, & Seedat, 2019. |
| Time Saving | Less time taken to shop due to no travel | Deloitte, 2019; Javadi, Dolatabadi, Nourbakhsh, Poursaeedi, & Asadollahi, 2012; Jiang, Yang, & Jun, 2013; Lin, 2007; Scientificwebs, 2020; Watling, McCabe, & Seedat, 2019. |
| Avoiding crowds, queues and parking | No wasting of time and energy | Changchit, 2006; Deloitte, 2019; Jiang, Yang, & Jun, 2013; Watling, McCabe, & Seedat, 2019; |
| Less impulse and unplanned purchases | Less unintentional purchases | Clemes, Gan, & Zhang, 2014 |

There are however also disadvantages that online stores have compared to brick and mortar stores. The utilisation of your five senses are limited with a lack of touch, feel and try. Lightspeed (2021) asserts that delayed delivery with a shortage of inventory is also seen as an inhibitor espcially if the product is required urgently and lastly there could be elements of perceived risk and trust due to the lack of human face to face interaction. It is clear that both online and physical store presence will be advantages to retailers. Issues with risk and trust are discussed further in the next section.

**Perceived Risk and Trust Related Issues in Online Commerce**

Perceived risk relates to the amout of risk, i.e. the potential for loss, the consumer considers whilst deciding to purchase particular items and due to the lack of physical engagement with the products consumers might not be 100% sure of the purchase (Lightspeed, 2021). The higher the perceived risk and trust, the higher the chances consumers would prefer visiting a physical store and purchasing the product. The lower the perceived risk, the higher the chances the consumer will purchase the product online (Gerber, Ward, & Goedhals-Gerber, 2014). According to Van Kerrebroeck, Brengman, & Willems, (2017), consumers prefer to purchase products online which do not require a physical inspection. Some of the major perceived risks related to onilne shopping include product risk (not the same product), financial risk (using credit card to pay online) and non-delivery risk (will the product be delivered). Online payment systems needs to be secure and measures needs to be in place to enhance credit card protection in order to reduce online fraud. Dai & Forsythe (2014) asserts that the level of uncertaintly of the purchasing online influences consumers' perceptions regarding the percieved risk.

In addition to risk, there is a also an element of trust required for the success of online commerce (Gefen, Karahanna, & Straub, 2003). For example, if consumers do not trust the brand they will be less likely to engage in a purchase online. Trust refers to the inclination of an individual or business to be susceptible to the actions of another entity based on the expectancy that the entity will fulfil a specific task without question (Taddeo, 2011). Thatcher, Carter, Li, & Rong (2013) identied 4 major domains of trust relevant to e-Commerce; (1) trust in

merchant which relates to the merchants competence, benevolence and integrity, (2) trust in website/application which relates to ability of its technical attributes in relation to features and operational ability to complete a transaction, (3) trust in IT infrastructure which refers to the hardware and software that connects users to the system and (4) trust in institutional infrastructure which refers to structural conditions in the form of accreditations, seals and other compliance measures to ensure safe and successful transations.

Having discussed e-Commerce and m-Commerce in general, the evolving online retail industry highlighting pure play versus bricks and mortar and platform models, advantages and disadvantages to consumers, perceived risk and trust, the next section explores online food delivery as a specific category of online commerce.

## 2.3 Online Food Delivery Overview

Over the last decade the OFD market has prospered as an online industry with consumption of prepared food services at home having grown rapidly (Trapp, et al., 2015). Food preparation at home has significantly declined since the mid 1960's, and in the US only approximately 60% of adults consume food prepared from home (Smith, Emett, Newby, & Northstone, 2013). This decline could be attributed to more demanding working hours and a lack of time to prepare food together with the convenience of simply ordering food. According to a study conducted by Botonaki & Mattas (2010) adults with professional careers do not want to spend time cooking and cleaning up and would rather use the time for other activities. Pieroni & Salmasi (2014) further asserts that longer work hours together with the advancement in new technology has contributed to the growth of out-of-home consumption.

Academic literature with reference to the food delivery industry is very limited and the author relied on grey literature drafted by various industry reports and papers (Lutz, Bolden, Melker, & Martin, 2017; Hirschenberg, Rajko, Schumacher, & Wrulich, 2016; Singhi, Mathur, Chobey, & Dasgupta, 2020; Deloitte, 2019; Pinder, Walsh, Orndorff, Milton, & Trescott, 2017) and press related opinion

pieces (Metema, 2018; BusinessTech, 2019; Korevaar, 2018; IT News Africa, 2017) which provided the necessary insights into OFD outlined in the following sections.

### 2.3.1 Defining the Online Food Delivery Industry

The food delivery market has shown tremendous growth worldwide with the OFD segment amounting to US$122,7-billion in 2020 and expected to grow at an annual growth rate of 7.5% to US164,0-billion by 2024 (Statista, 2020). The US alone has seen double digit growth annually over the past few years reaching US$30,0-billion in 2016 which account for 5% of the total restaurant market (Lutz, Bolden, Melker, & Martin, 2017). With the advent of new technological advancements, consumers could simply order from a variety of restaurants by a click on their mobile phone and have it delivered to their door (Hirschenberg, et al., 2016)

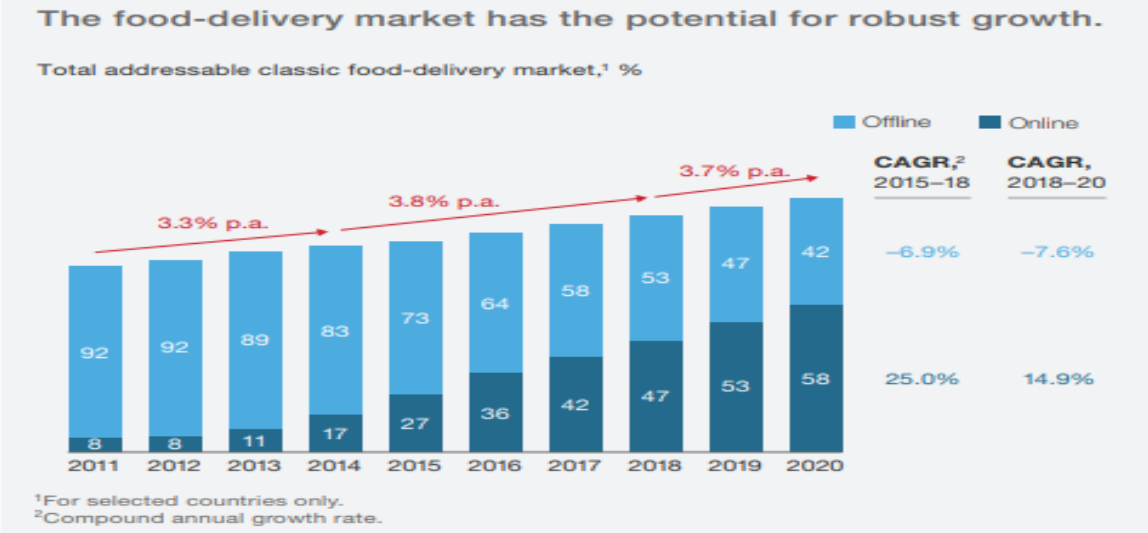



**Figure 7: The Food-Delivery Market has the Potential for Robust Growth (Source: Hirschenberg, et al., 2016)**

### 2.3.2 Food Delivery Categories

The food delivery industry can be broken down into three specific areas of items which can be delivered. These are (1) fresh produce and groceries, (2) ready-made meals or “take-aways” or (3) meal kits. These items are commonly ordered

from a website or mobile application, payment is made at online checkout and the items are them delivered to the consumer's door. The delivery times will vary for each category.

### Category 1: Fresh Produce and Groceries

The customer will access the company website or mobile application (i.e., Woolworths, Pick n Pay, Checkers), select the items and proceed to checkout, select delivery time (this could be as soon as the next day) and then proceed to make payment. The items will then be delivered in the time slot chosen.




**Figure 8: Category 1- Fresh produce and groceries (Source: Author's Independent Research)**

### Category 2: Ready-Made Meals or "Take-Aways"

The customer will access the restaurant's or aggregator's platform (i.e., UberEats, Mr D Food, OrderIn) website or mobile application, select the items and proceed to checkout, proceed to make payment. The items would routinely be delivered within the hour.




**Figure 9: Category 2- Ready-Made Meals or "Take-Aways" (Source: Author's independent research)**

Within category 2 there are three distinctive food delivery business models which are outlined below.

a) Delivery Model 1: The Traditional Model

Facilitated by ordering meals via calling a restaurant directly, placing your order and collecting in person **(Deloitte, 2019)**. As this demand increased in popularity, local restaurants began to launch delivery services; thus consumers could simply call the restaurant, place the order and have it delivered to their door.

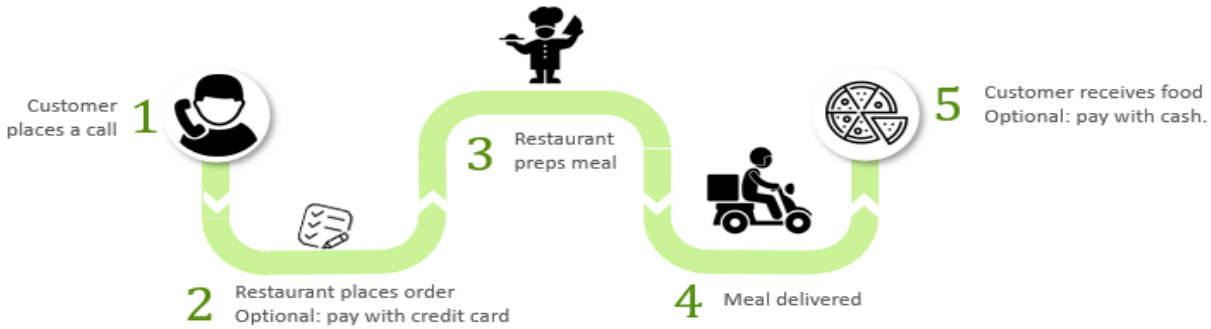



**Figure 10: Traditional Delivery Model (Source: Author's independent research)**

b) Delivery Model 2: The Aggregator Model

Emerged approximately 15 years ago (Hirschenberg, et al., 2016), which allowed mutiple restaurants to be added on the third-party platform whereby restaurants could add their respective menus and allow orders to be placed for a fee to the

platform provider. These platform providers charges a fixed margin per order to the restaurant and the restaurant provides the delivery to the end consumer or the consumer has the option to collect. Just Eat, Foodpanda, Grubhub and Delivery Hero are examples of aggregators.

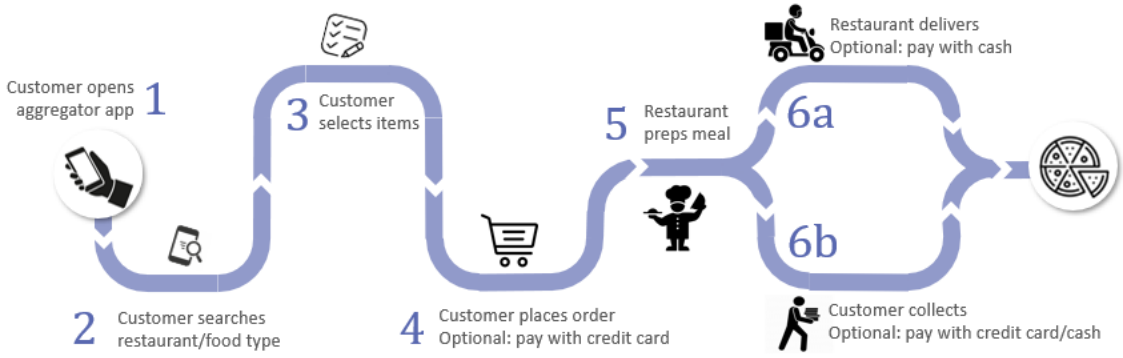



**Figure 11: The Aggregator Model (Source: Author's Independent Research)**

c) Delivery Model 3: The New-Delivery Platform Model

Similar to aggregators which simply introduces logistics for the restaurant. The restaurant is charged a fixed margin of the order and the customer is also charge a small fee including delivery costs (Hirschberg, et al. 2016). UberEATS, Mr. Delivery and Order-In are examples in the South African take-away delivery market.

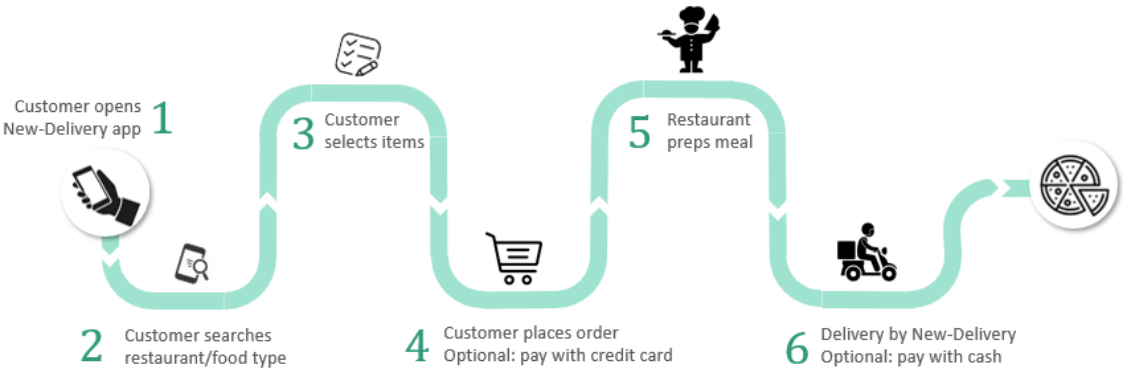



**Figure 12: The New-Delivery Platform Model (Source: Author's Independent Research)**

**Category 3: Meal kits**

The customer will access the company website or mobile application (i.e., Daily Dish, UCook, Fitchef), select the items or packages and proceed to checkout, select delivery options (this could be daily or weekly dependant on the company's delivery model) and then proceed to make payment (Lau & Ng, 2019).

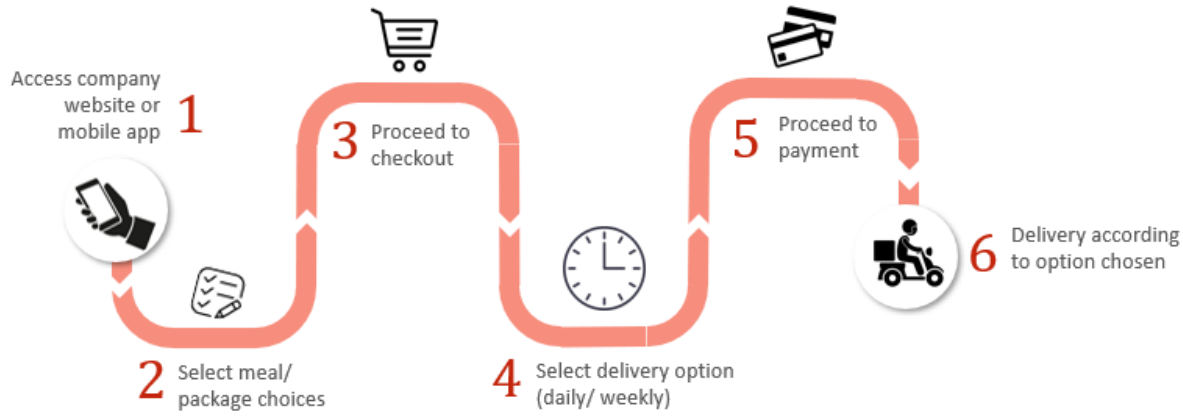



**Figure 13: Category 3 - Meal kits (Source: Author's Independent Research)**

## 2.4 Consumer Insights and Trends

The gigabit society together with busy lifestyles has dramatically influenced consumer buying decisions. Swinford (2018:4) describes a gigabit society as "one where citizens and businesses benefit from widespread connectivity of 1 gigabit per second, low latency and reliable performance delivered by robust, future-proof fixed and mobile technologies". According to a report by Nielson (2018) consumers are demanding convenience at every stage of shopping, engagement with product or service and after sales support; it was further highlighted that consumers want products that make their lives easier. Dilworth (2017) further asserts that 93% of millennials use their phone to access the internet and this younger generation prefer engaging with their mobile phones.

At home food preparation is on the decline as consumers' lives become more demanding and busier. Cheng (2018) posits that millennials are increasingly having food delivered and could result in the "death" of home-cooked meals. Millennials' meal choices are also becoming more demanding in the variety of

options they would like; traditionally these could have been categorised by pizza, asian cuisine, burgers, etc; however there has been a recent need for more healthier or diverse dietary options inclusive of gluten free, ketogenic, paleo, atkins, carnivore, dukan, vegetarian and vegan to name a few. Online food delilvery aggregators (Category 2 and 3) provides this level of diversity in menu options through the variety of restaurants to the consumer (Hirschenberg, et al., 2016).

Lutz, et al., (2017) warns that even though more and more consumers are using OFD services, there is a low advocacy rate of only 9% according to a Brand Advocacy Index (BAI) study conducted by Boston Consulting Group which calculates recommendations for a brand. When compared to quick service restaurants (QSR) brands providing their own delivery service; the score increases to 23%. This can be atttibuted to the QSR brands owning the entire value chain whereby aggregators tend to have issues in poor food condition, poor value and long delivery times. Lee, Lee, & Jeon (2017) emphasises that consumers within the restaurant industry are notoriously fickle and have an advantage that switching costs are extremely low. Hirschenberg, et al., (2016) states that aggregators are sticky (Figure 14: New-delivery platforms have a proven track record of retaining customers), and an average of 77% of customers seldomly or rarely switch platforms. The restaurants utilising aggregators therefore must create incentives and or rewards to ensure the continuous use of their service. These factors are key drivers to the adoptions and usage of OFD.

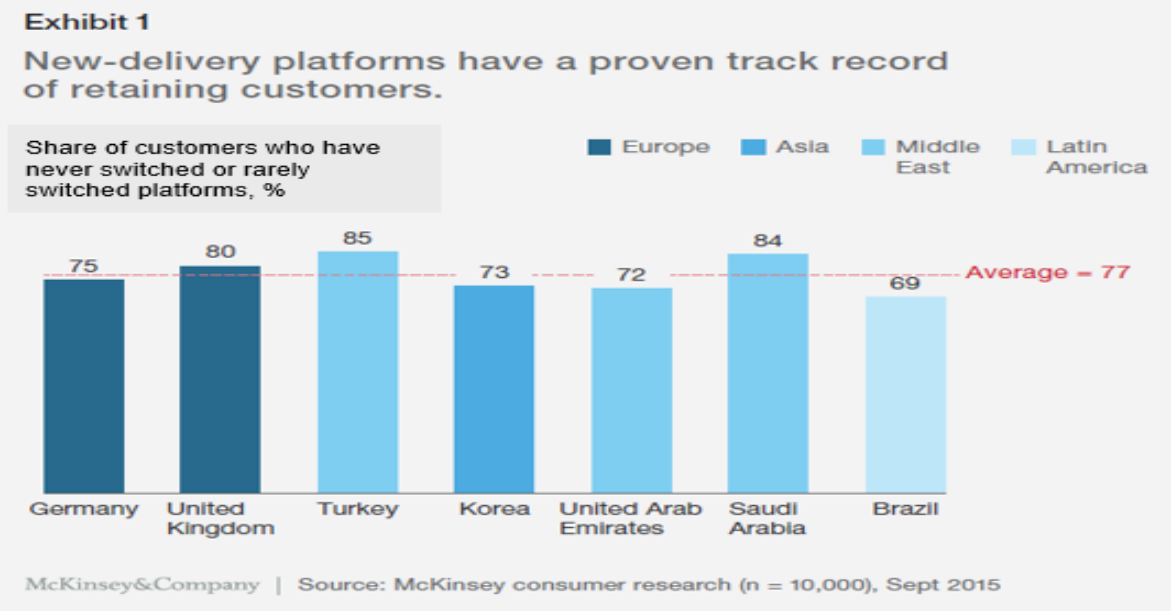



**Figure 14: New-Delivery Platforms have a Proven Track Record of Retaining Customers (Source: Hirschenberg, et al., 2016)**

Over and above these factors, it is important to understand what consumers value in using a food delivery service. According to Gilsenan (2018) in a study conducted in the UK and US, with approximately 2500 users aged 16-64 years, choice of delivery providers and food options were among the fundamental drivers for customer loyalty, along with responsiveness and monetary savings. Further insight into the other key considerations are listed in Figure 15: What motivates takeaway lovers to order from a food delivery service?




**Figure 15: What Motivates Takeaway Lovers to Order from a Food Delivery Service? (Source: Gilsenan, 2018)**

### 2.4.1 Benefits to Restaurants

OFD presents an additional channel for restaurants to increase revenue. According to Mullen (2015), OFD provides restaurants a secondary stream of purely incremental revenue and marketing benefits. Moving towards an OFD digital aggregator or new-delivery platform model (Category 2 and 3) allows restaurants access to network effects which they previously did not have access

to. As the digital platform grows by adding more restaurants, so to will the consumer base increase connecting more restaurants to more consumers they might not have been aware of, and consumers on the other end will have access to additional choice. In an effort to maximise revenue during low peak trading periods or slow days restaurants may run dynamic campaigns or promotions to improve sales within these periods; this could be done by using discounts on meals, free service charge, free delivery or a combination. The utilisation of aggregators or platforms to restaurants can be segmented in a modular mode and is dependant on the model the restaurant employs, these are (1) use the platform to fulfil the end to end service from menu listing, payment acceptance and delivery (Deloitte, 2019), (2) use the aggregator to list menus and accept payments while using you own delivery service and (3) utilise a combination of both aggregator and platform models along with the restaurant's own capability. The benefits of OFD will thus vary dependent on the model adopted. Below are the key benefits that can be derived by restaurants:

- Increased sales due to demand for variety: Restaurant can adjust their menus to offer a variety of meals suitable for delivery that include healthy options and premium "dinner" type meals that appeal to customer demand for variety (GloriaFood, 2020)
- Operational efficiency: Optimised utilisation of assets in low and mid-week periods (Deloitte, 2019).
- Market growth: Access to new potential customers who utilise the aggregators. Lutz, et al., (2017) highlights that aggregators have higher value customers in terms of usage who are purchasing seven meals per month compared to three meals per month on average for non-aggregator users.
- Access: Platforms and aggregators allow smaller brands access to a new channel to compete with more established providers (Hirschberg, et al, 2016)
- Expansion and innovation: According to Deloitte (2019) third-party platforms use data insights to design menus and analytics can identify potential "dark" kitchen locations to exploiting under-utlised space in existing restaurants

### 2.4.2 The Rise of Dark Kitchens

Recently there has been a rise in “kitchen-only” delivery restaurants which are known as “dark”, “cloud”, “virtual” and “ghost” kitchens; these are essentially shared kitchen spaces (or a ‘WeWork for Kitchens’) which only offer delivery as a channel. Garlick (2017) further clarifies that “dark” kitchens are free from consumer facing elements , such as seating facilities, and service customers only via the online food delivery channel.

Co-founder of Darth Kitchen, Heini Booysen describes their dark kitchen solution as providing multiple brands a place to operate from with multiple chefs and staff each focussing on various cuisines from pizza to burgers to health bowls to sushi (Van Tilburg, 2019). Due to the lower operational costs, “dark” kitchens focus on quality ingredients, premium packaging and speed of getting the order to the consumer (Chosta, 2019). Additionally, because their platform for customers is digital, “dark” kitchens can more quickly adapt their menu offerings with new trends as they happen.

These dark kitchens allows quick expansion with a fraction of the start up costs to setup (Bradshaw, 2019). In a report conducted by Singhi, Mathur, Chobey, & Dasgupta (2020) cloud kitchens are seen to be emerging due to (1) higher levels of trust in freshness and quality of food, (2) ability to experiment with the menu, (3) lower operational costs compared to quick service restaurants (QSR) and (4) ability to create multiple private label brands at a lower marketing cost.

### 2.4.3 Online Food Delivery Market – A South African Perspective

The fast food or take away market has been a favourite pastime for most South Africans due to its convenience and consumers being more and more time starved, whether it be a mid-week break from cooking at home or a weekend treat. A study undertaken by Nielson (2018) highlighted that 34% of all South African consumers utilise restaurant delivery services. The fast-food sector has however been under severe pressure and has seen a substantial decline in 2018 according to a survey conducted by (Insight Survey, 2018). OFD provides a glimmer of hope which opens an additional channel to market to. In an interview

with Dumile Badela, a restaurant owner in Sandton, OFD has boosted revenue up to 20% (Harris, 2020). Business Live (2017) further asserts that the market has been moving towards take-out and delivery from traditional sit-down restaurants, a phenomenon which has been driven by primarily by millennial consumers.

The South African market is dominated by three players in the new-delivery platform category. It is estimated that Mr D Food and Uber Eats collectively own between 80% - 90% of the South African market share with OrderIn making up the remainder (Memeburn, 2019). Mr D Food (previously known as Mr Delivery) started in the early 1990's as a call-and-deliver service and in 2015 it was acquired by Takealot to support the last mile delivery with the food delivery emerging into an app-led strategy and rebranding to Mr D Food. It claims to have just over 700 000 monthly active app users (Hinchcliffe, 2020) and 5000 active restaurants (Mr D Food, 2020) . Uber Eats was launched in 2016 in South Africa on the back of its global expansion plan and claims it has recorded over 2.1million app downloads (Toyana, 2020) and 3000 active restaurants (Media Update, 2019). OrderIn was the first entrant into the market back in 2012 but did not scale as quick as Mr D Food and Uber Eats due to it being a start up with limited resources. As of February 2018 OrderIn, had a network of over 1200 restaurants in all major cities (Venktess, 2018). Aggregator models have not been predominant within the South Africa context which has been driven by traditional direct and new-delivery platform dominating the OFD market. McDonald's, Steers, Romans, Dominos are some of the key local players that utilise traditional direct (restaurant to consumer models) but have also followed a hybrid channel approach by also listing on the new-delivery platforms.

The rise of platforms and e-Commerce business models has contributed to the growth of business and changed the way consumers engage with business through technologies (Schneider, 2013). These constant improvements and changes threaten current business models, while also providing completely new ways of doing business (Lai, 2016). One such category is in the business of food delivery.

A key challenge to businesses developing technologies which are new to society, is understanding how fast consumers can adopt and accept these technologies. Numerous factors may influence consumer adoption inclusive of consumer needs, convenience, security concerns, and other risks. Although consumer technology adoption can be viewed as an exogenous global factor, country-to-country adoption has differed based on the specific endogenous factors relevant to each country (Awa, Ojiabo, & Emecheta, 2015). It is therefore important to investigate the factors which influence consumer adoption and continuous use of the relevant services. There needs to be a desired level and acceptance of new technology before mass adoption can be achieved (Lu, Yu, Liu, & Yao, 2003; Sarker & Valacich, 2010; Sia, Lee, Teo, & Wei, 2001).

## 2.5 Theoretical Framework for Consumer Adoption

In this section the relevant technology adoption frameworks are analysed, which will lead to development of a proposed theoretical model for predicting consumer adoption and continuous use of OFD services. There have been multiple frameworks developed over the past few decades that has evolved to consider factors driving technology adoption, these are listed in Table 4.

**Table 4: Technology Adoption Models (Source: Author's Independent Research)**

| Model / Theory | Authors |
|---|---|
| Diffusion of Innovation (DoI) | Rogers (1995) |
| Theory of Reasoned Action (TRA) | Fishbein & Ajzen (1975) |
| Theory of Planned Behaviour (TPB) | Ajzen (1995) |
| Technology Acceptance Model (TAM) | Davis, Bagozzi, & Warshaw (1989) |
| Unified Theory of Acceptance and Use of Technology (UTAUT) | Venkatesh, Morris, Davis & Davis (2003) |
| Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) | Venkatesh, Thong & Xu (2012) |

These theories and frameworks have been used in various fields and have been applied in health care, psychology, economics, education and information technology to name a few. The section will present insight into the various technology adoption models and theories, which will ultimately lead to the theoretic framework used for OFD.

### 2.5.1 Diffusion of Innovation (DoI)

Rogers (1995) defines an innovation as an idea that is deemed new by a society and describes the diffusion of innovations as “the process by which an innovation is communicated through certain channels over time among the members of a society”. Rogers (1995) further clarifies that the adoption of an innovation is relative to the risk appetite of individuals or businesses over time throughout the value cycle; whereby the higher risk individuals or businesses adopt early on and the lower risk individuals or businessnes adopt at a later stage.

Rogers’ diffusion of innovation theory describes the rate at which new ideas and technology spreads over time based on five type of adopters. (Rogers, Diffusion of Innovations, 2003). Each of these adopters have different characteristics.

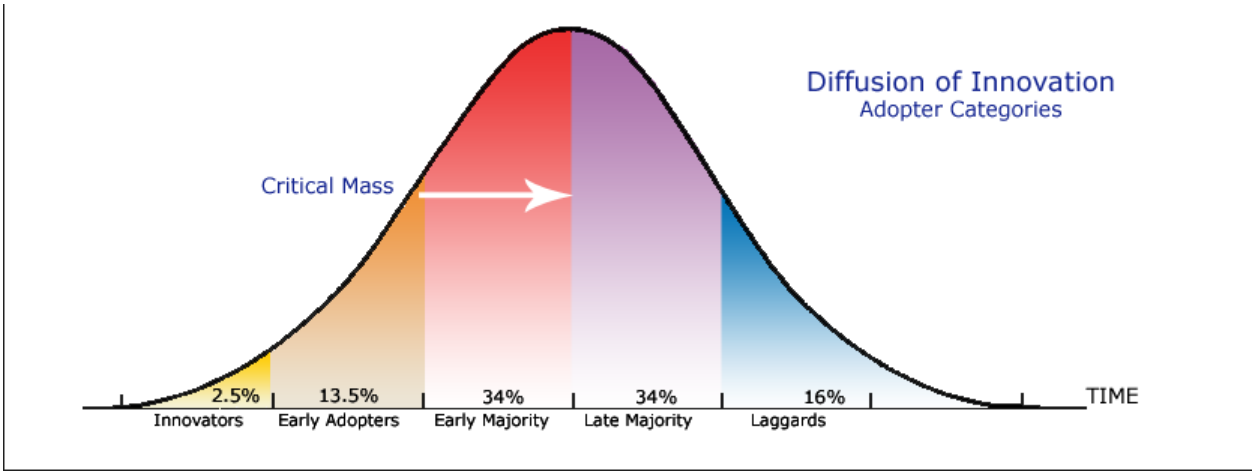



**Figure 16: Diffusion of Innovation Adopter Categories (Source: Rogers, 1995)**

- Innovators: Risk averse adopters who are enthusiastic to try out ground breaking technologies and innovation.
- Early Adopters: The opinion leaders who have the desire to set trends and are generally not cost sensitive.
- Early Majority: These are also opinion leaders however they want proven success, reliable service and want to stay within budget
- Late Majority: Highly influenced by peers, generally sceptical and require multiple use cases to prove the innovation works, and are very cost sensitive.

- Laggards: Suspicious of innovation, do not want to change the status quo and often see technology as a hinderance.

Prescott (1995) advised that the diffusion of innovation theory provides a “rewarding base for expanding our understanding of IT adoption, implementation, and infusion”. The theory highlights innovation adoption from a sociological perspective, which has been successfully applied in the Information Systems (IS) context (Moore & Benbasat, 1991; Tornatzky & Klein, 1982). Lyttinen & Damsguard (2001) argues that the diffusion of innovation theory falls short with complex networked technologies as it does not provide adequate constructs to consider a collective of adoption behaviours (including role of standards, critical mass, network externalities, sunk costs and path dependence, among others)

### 2.5.2 The Theory of Reasoned Action (TRA)

This theory describes the link between beliefs, attitudes, intentions and behaviours of individuals. As per the model (Figure 17: Theory of Reasoned Action), an individual’s behaviour is determined by their behavioural intention to perform it, together with their attitudes and subjective norms towards the behaviour. Attitude toward a behaviour is defined as "an individual's positive and negative feelings (evaluative affect) about performing the target behaviour" (Fishbein & Ajzen, 1975, p. 216). Subjective Norm is defined as "the person's perception that most people who are important to him think he should or should not perform the behaviour in question" (Fishbein & Ajzen, 1975, p. 302) and "intentions are jointly determined by the person's attitude and subjective norm concerning the behaviour" (Fishbein & Ajzen, 1975, p. 216)

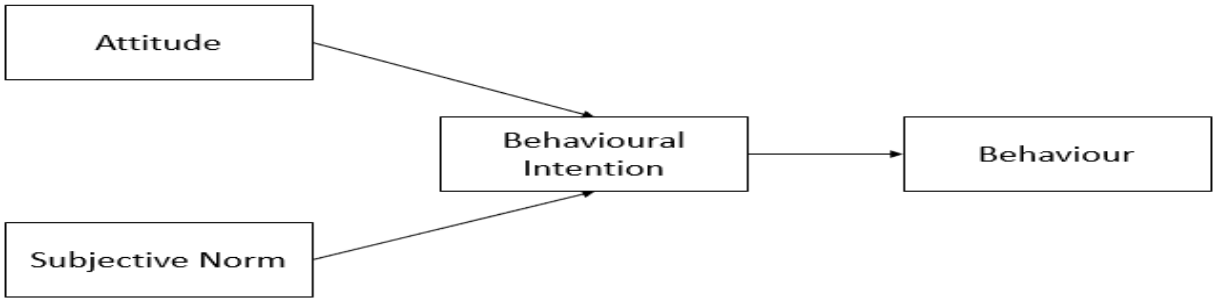



**Figure 17: Theory of Reasoned Action (Source: Azjen and Fishbein, 1967)**

When applied to the context of technology adoption, adoption or use of the technology is the behaviour in question. Armitage, Connor, & Norman (1999) and van der Pligt & de Vries (1998) critique the theory as it assumes everyone is rational and does not sufficiently take into account compulsions, emotions or other irrational determinants of human behaviour.

### 2.5.3 Theory of Planned Behaviour (TPB)

In an attempt to address the inadequacies of the theory of reasoned action, (Ajzen, 1985) expanded the TRA by adding the construct of perceived behavioural control (PBC). The inclusion of PBC helps to address behaviour in those situations in which individuals lack substantive control over the specific behaviour (Ajzen, 1991). This addition highlights the perceived ease or difficulty of performing the behaviour and assumes historical experience. TPB has been successful use to predict health behaviours such as drinking, smoking and substance abuse as well as technology use behaviours such as in mobile internet, mobile data services and e-learning (Lee M. C., 2010; Zhou, 2013).

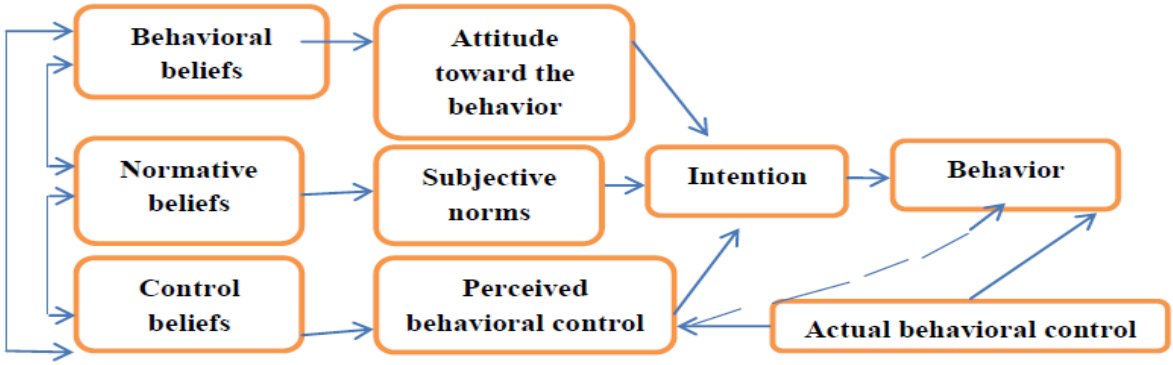



**Figure 18: Theory of Planned Behaviour (Source: Azjen, 1991)**

Barber (2011) asserts that one of the major downfalls of the TPB is that it is too rational and or logical, and does not consider the fact that sometimes people behave irrationally. Furthermore Hong, Thong, & Tam (2006) adviced that TPB is not a suitable model to understand continued use of a service.

### 2.5.4 Technology Acceptance Model (TAM)

TAM is based on the TRA and TPB but adds perceived usefulness and perceived ease of use as the two key belief factors influencing attitudes and behavioural intention towards using the technology (Wang, Wang, Lin, & Tang, 2003). Originally introduced to explain computing adoption in the organisational context, perceived usefulness refers to the users believe that the usage of the technology will improve their job performance (Davis, Bagozzi, & Washaw, 1989), while perceived ease of use relates to the users belief that the technology will be easy to use.

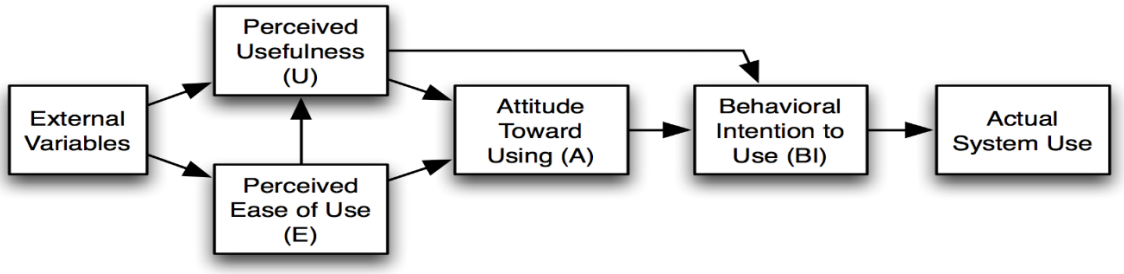



**Figure 19: Technology Acceptance Model (Source: Davis, et al., 1989)**

TAM has become the most extensively utilised framework for predicting user acceptance of information technology (IT) (Awa et al. 2015; Chauhan & Jaiswal, 2016; Cimperman, Brenˇciˇc, & Trkman, 2016; Šumak & Šorgo, 2016; Šumak, Pušnik, Herièko, & Šorgo, 2017). When investigating the adoption of IT by its users, TAM is considered as an appropriate framework (Wang, Wang, Lin, & Tang, 2003; Rahman, Khan, & Islam, 2013). Hernandez, Jimenez, & Jose Martin (2009:150) further advise that TAM has “high exploratory power in technology behaviour and e-commerce perceptions.” Wang, Wang, Lin, & Tang, (2003); Hernandez, Jimenez, & Jose Martin (2009); Rahman, Khan, & Islam (2013) and Hong, et al. (2016) are examples of research having adapted the TAM model to understand various e-commerce adoption cases by consumers, such as mobile phones, mobile payments, online services and e-finance.

According to Schuster, Proudfoot, & Drennan (2015) TAM does not take individual differences into consideration and does not consider social influences

or subjective norms. Pinpathomrat (2015) suggests that the two factors of usefulness and ease of use may not be adequate to justify the adoption of technology on all contexts. Moreover, explanations of continuous post-adoption use would need to include other factors. Finally, Straub (2009) indicates that TAM does not consider key demographic considerations (age and gender) which could influence use of technology and Ajibade (2018) advises that TAM does not consider education as an external variable which could influence user acceptance and continuous use.

### 2.5.5 Unified Theory of Acceptance Use of Technology 2 (UTAUT2)

UTAUT was developed by integrating multiple adoption models for a more unified view of individual intentions to use a technology (Venkatesh, Morris, & Davis, 2003). The model has four key determinants being performance expectancy, which highlights the usefulness of technology, effort expectancy, which emphasizes effort required to use the technology, social influence, which touches on the perception close relatives and friends would have toward the technology, and facilitating conditions, which underlines the resources required to enable the technology's use. All these factors ultimately have an effect on behavioural intention. Additionally, four moderators being age, gender, experience and voluntariness of use was theorised to moderate the impact of the four key determinants on usage intentions and behaviour (Venkatesh, et al. 2012) Although UTAUT provided a detailed framework of user acceptance, it had some limitations inherited from the earlier models that it was based on. Therefore, Venkatesh, Thong, & Xu (2012) developed UTAUT2 by expanding the determinants to include hedonic motivation, price value and habit. UTAUT2 eliminates voluntariness of use as a moderator based on results of multiple studies using UTAUT. According to Venkatesh, et al., (2012) they felt UTAUT2 was considered to have a broader descriptive power over UTAUT for multiple emerging technology usage research areas.

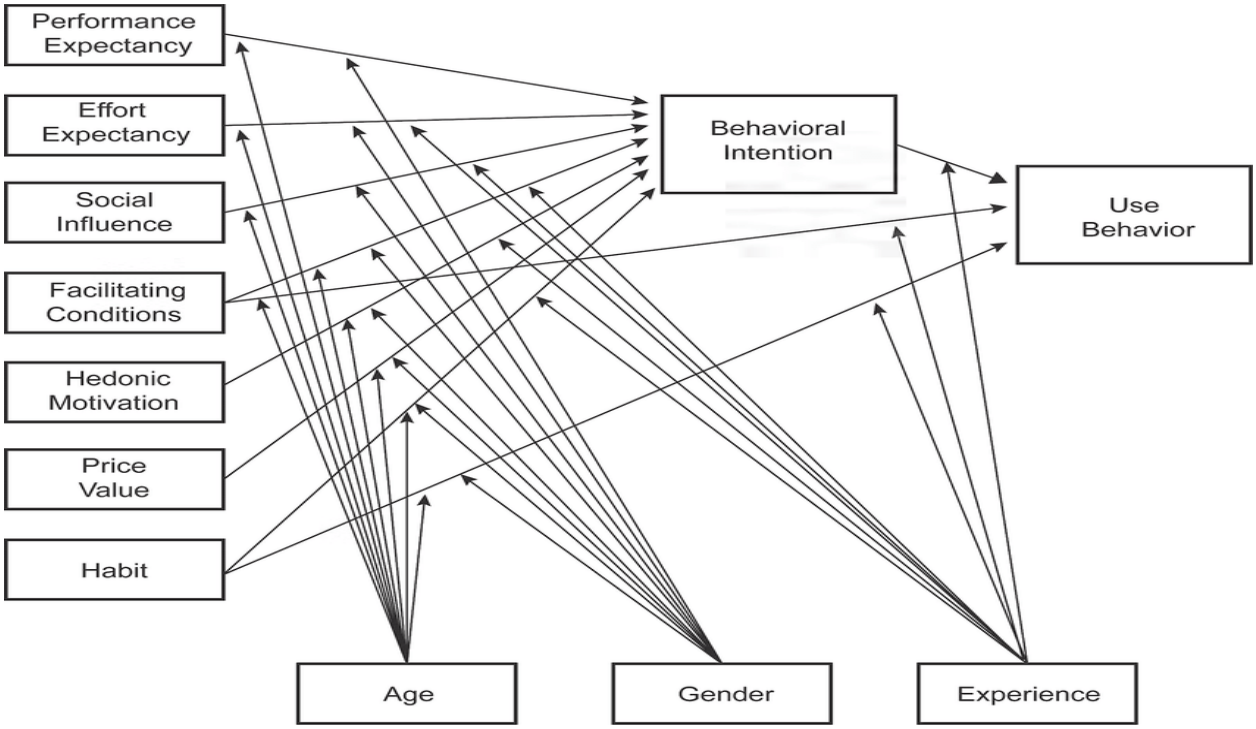



**Figure 20: Unified Theory of Acceptance Use Technology 2 (Source: Venkatesh, et al., 2012)**

The purpose of this research is to explore the factors influencing the adoption of OFD services. Although, there have however not been recent academic studies using the UTAUT2 model for OFD services (Lee, Lee, & Jeon, 2017; Cho, Bonn, & Li, 2019), the UTAUT2 framework is deemed the most comprehensive adoption model and will provide more relevant insights than other models. First, UTAUT2 was developed by Venkatesh, et al (2012) by integrating and improving on various prior theoretical frameworks. Second, UTAUT2 is considered relevant in contexts of voluntary use as opposed to non-voluntary or mandatory use and thus making it particularly relevant for studying adoption of technologies by consumers. Third, UTAUT2 incorporates moderators in age, gender and experience in relation to the relevant determinants and thus accounts for differences in user characteristics that may influences the salience of various factors. Fourth, consumers who use online services on a voluntary basis do so based the additional factors being hedonic motivation, price value and habit. The perceived value derived from these factors may be vital to the continuous use of OFD services. Fifth, UTAUT2 can accommodate the addition of other main effects factors to the model. For example, in addition to the UTAUT2 determinants

above, variables of perceived risk and trust could be included to better understand the behaviour of online consumers (D'Alessandro, Girardi, & Tiangsoongnern, 2012). This is discussed further in the next section.

### 2.5.1 Perceived Risk and Trust in Consumer Acceptance of Online Technology and Services

The earlier section (section 2.2.2) introduced the importance of consumer risk and trust perceptions in the success of e-Commerce. Researchers have considered that in the online context, consumer risk and trust perceptions are among the most important beliefs influencing their behavioural intentions such as to use websites and purchase online. According to Featherman & Pavlou (2003) perceived risk and trust are critical factors in driving users' acceptance of technology services within e-Commerce and should be considered in research models.

Cody-Allen & Kishore (2006) asserts that there have a been a limited number of attempts to add perceived risk and trust into the UTAUT framework or validation of their underlying relationships (Shin, 2009). Conversly, according to (Lui & Jamieson, (2003) & Thiesse (2007) the impact of perceived risk and trust have been thoroughly explored as an external factor of the TAM framework. It is therefore considered vital to explore the role of perceived risk and trust in OFD service adoption and how trust and risk inter-relate with the external variables of the UTAUT2 framework.

**Perceived Risk**

Featherman & Pavlou (2003:454) defines perceived risk as "the potential loss in the pursuit of a desired outcome of using an e-Service". Garbarino & Strahilevitz (2004) advises that perceived risk is an individual's perception of the possibility for loss and the seriousness of outcome if loss were to occur. According to various studies, perceived risk is deemed a precursor of purchase intention having a negative effect (Rao, Truong, Senecal, & Le, 2007; Lian & Lin, 2008; Kim, Ferrin, & Raghav, 2008). Consumers' purchase decisions are highly driven by the perceived risk of a purchase, reducing this risk is of utmost importance (Chang & Tseng, 2013). Hanafizadeh, Behboudi, Koshksaray, & Tabar (2014)

deduced that “risk factors are vital in m-Commerce and the higher the risk of using new technology, the lower the willingness to use.” Featherman & Pavlou (2003) identified several dimensions of perceived risk in an e-Commerce context with has been adopted by (Lou, Li, Zhang, & Shim, 2010) in Table 5.

**Table 5: Multi-Faceted Risk Perceptions and Definitions (Source: Adopted from Lou et al. 2010, extended to OFD context)**

| Risk Facets | Definition | Online Food Delivery Services |
|---|---|---|
| Performance Risk | The possibility of the product malfunctioning and not performing as it was designed and advertised and therefore failing to deliver the desired benefits. | Quality and freshness of food delivered not up to standard. |
| Financial Risk | The potential monetary outlay associated with the initial purchase price as well as the subsequent maintenance cost of the product. | Refers to financial loss as a result of application errors, i.e. double charged food or charged for food not ordered or the misuse of the credit card data. |
| Time Risk | Consumers may lose time when making a bad purchasing decision by wasting time researching and making the purchase, learning how to use a product or service only to have to replace it if it does not perform to expectations. | Delivery time, food should be delivered within a reasonable time frame. This could also be related to being charged with no delivery. |
| Psychological Risk | The risk that the service will lower the consumer’s self-image. | The possibility of continuous use of online food ordering service negatively affecting self image. |
| Social Risk | The risk that using a product or service may lead to embarrassment before one’s social group. | No social risks identified, social group generally support the use of online food ordering services |
| Privacy Risk | Potential loss of control over personal information, such as when information about you is used without your knowledge or permission. | Ensuring customer data is secure and the privacy of users are upheld. |
| Physical Risk | The risk to the buyer's or other's safety in using products. | No physical risks identified. |
| Overall Risk | A general measure of perceived risk when all criteria are evaluated together | Quality and delivery times are deemed as important factors |

## Trust

According to Lu, Yang, Chau, & Cao (2011:396), “Trust is a subjective belief that a party will fulfil their obligations and it plays an important role in electronic financial transactions, where users are vulnerable to greater risks of uncertainty and a sense of loss.” As society is moving towards reliance on smartphones which inherently opens up a multitude of engagement methods and m-Commerce, various elements of trust are required across the ecosystem. Trust

can be broken down into two levels- general and specific (Barber, 1983) where general trust referes to “general beliefs the trustor holds about the trustworthiness of people or the broader environment” and specific trust refers to “a person’s willingness to make him or herself vulnerable to the actions of a particular trustee.” Thatcher, Carter, Li, & Rong (2013) adapted the model for the B2C e-commerce context whereby general encompasses trust in infrastructure and institution mechanisms and specific comprises trust in merchant and website. (Table 6: A Classification of B2C Trust Levels).

**Table 6: A Classification of B2C Trust Levels (Source: Thatcher, et al., 2003)**

| Trust Level | Sub-Category | Definition | Study |
|---|---|---|---|
| General Trust | Infrastructure | Belief in the envionment that enables the processing of e-commerce transactions | (Kim, Shin, & Lee, 2009); (Ratnasingam, 2005) |
| | Institution | Belief that transactions will be completed successfully | (McKnight, Choudhury, & Kacmar, 2002) |
| Specific Trust | Merchant | Belief that the vendor has integrity, competence and benevolence | (Morgan & Hunt, 1994); (Bhattacheriee, 2002); (Pavlou & Gefen, 2004); (Kim, Xu, & Koh, 2004) |
| | Website | Belief that the environment is safe to exchange information with others | (Liao, Liu, & Chen, 2011) |

These trust levels are distinct in nature and serve different purposes. According to Barber (1983) general trust provides a coping mechanism for dealing with unfamiliar situations, while specific trust is extended towards an actual partner in a social relationship. Beatty, Dick, & Miller (2011) posits that general trust acts as a starting point forming specific trust which ultimately enables social engagement. Thatcher et al. (2013) further states that; “consumers who do not trust the online environment would not trust any merchant or website in it. However, even when they trust the online environment, consumers will not transact with specific partners they think are not trustworthy.” Figure 21 highlights the classification framework of B2C e-Commerce trust.

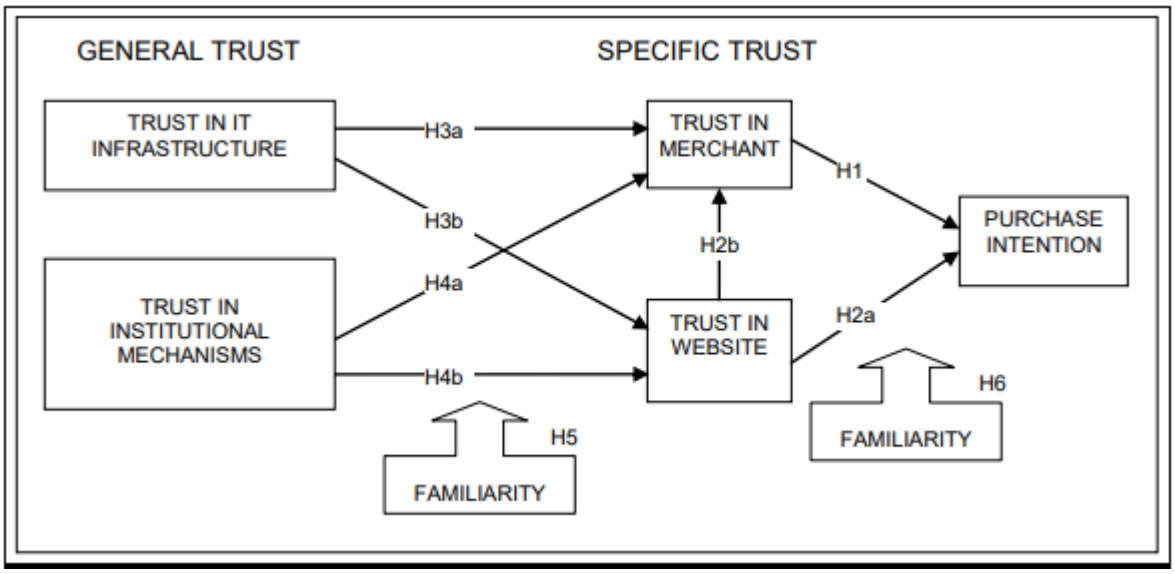



**Figure 21: A Classification Framework of B2C e-Commerce Trust (Source: Thatcher, et al., 2003)**

### Trust from an Online Food Ordering Perspective

**Trust in Merchant**: Studies have shown that online trust includes a trusting belief in competence, benevolence, and integrity of a merchant (Gefen, Karahanna, & Straub, 2003; Joubert & Van Belle, 2013; McKnight, et al, 2002). Merchants need to have the level of competence and ability to process and receive the food orders conveniently within the application. This includes having the necessary skills and competence to support OFD. A level of benevolence is required if the incorrect order is placed, or the meals are not delivered hot or as fresh as possible. Problems that arise need to be resolved with respect and good intentions towards the customer and OFD merchants should always endeavour to meet the delivery time promised. A consumer will only place an OFD order if they trust the merchant first (Joubert & Van Belle, 2013).

**Trust in Website/Application**: The OFD application must provide the relevant functionality in order to operate reliably in terms of searching for the restaurant, selecting, and ordering the meal, making payment, tracking delivery and reviewing the service. The consumers perceptions of the reliability and dependability of the OFD website or mobile app features will positivity influence purchase intension (Corbitt, Thanasankit, & Yi, 2003; Wakefield, Stocks, & Wilder, 2004).

**Trust in IT Infrastructure**: The underlying enabling technological being mobile network providing internet connectivity should be reliable as consumers should be able to order a meal from any location. Consumers tend to extend trust when they view technology as capable and reliable e.g. that an order will actually be placed once paid and that the tracker function will be accurate (Lee & Turban, 2001; McKnight & Thatcher, 2006).

**Trust in Institutional infrastructure**: Necessary structural conditions should be in place for secure shopping with respect to payment in ensuring credit card details remain secure and encrypted. Payment vendors need to have the relevant certifications in place to allow for transacting. Institution-based trust positively influences trust in a B2C vendor (McKnight et al. 2002; Gefen et al. 2003).

## 2.6 Research Framework and Hypotheses

Drawing on the above, Figure 22 shows the proposed conceptual framework of the determinants of consumer adoption and continued use of OFD services. The framework is based on UTAUT2 and extends it to include Perceived Risk and Trust. The framework examines nine determinants of individual behavioural intention to adopt OFD services and subsequent actual usage. The framework includes age, gender, variety seeking and household size as moderators.

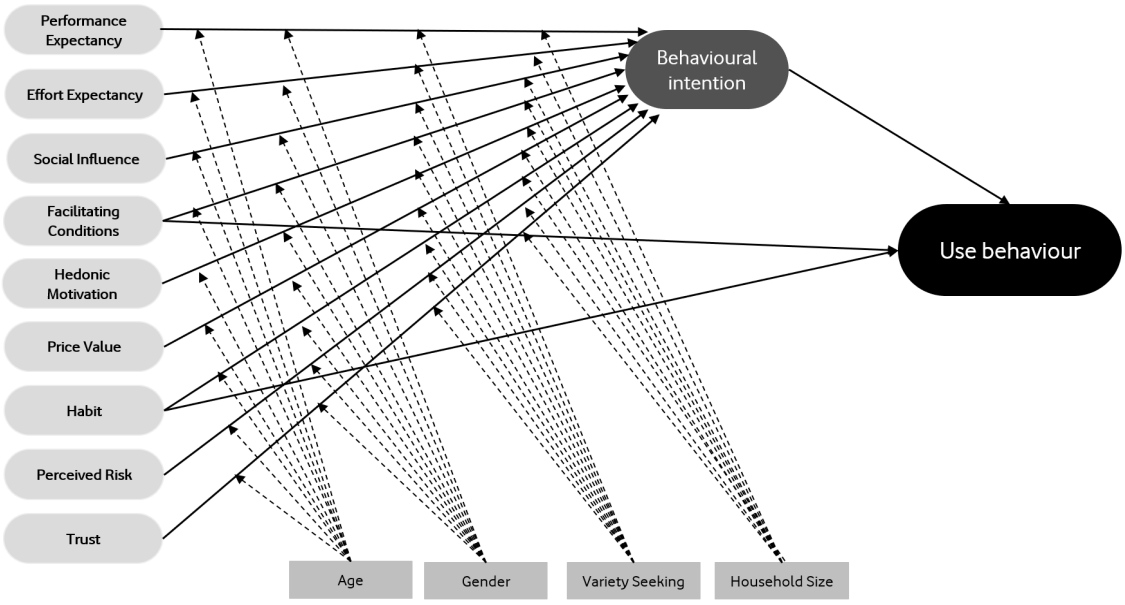



**Figure 22: Proposed Conceptual Framework**

### 2.6.1 Behavioural Intention

The dependent variable in the research framework is behavioural intention. According to Aarts, Verplanken, & van Knippenberg, (1998) social psychologist defines behavioural intention as the degree in which a person formulates a conscious plan to act or not act on a specific future behaviour. Islam, Kim, & Hassan (2013) further asserts that it is an individual's intention to perform a given act voluntarily. Prabowo & Nugroho, (2018) highlights that behavioural intention towards OFD is influenced by the attitude of consumers towards the service. Burke (2002) promulgates that behavioural intention plays a significant role in actual behaviours. In the case of OFD services due to the frequency of use of the service, behavioural intention is a key factor to be observed. The underlying hypotheses of the research framework are developed next.

### 2.6.2 Performance Expectancy

In the workplace context, performance expectancy is the degree to which an individual believes that using a system will help them attain gains in job performance (Venkatesh, et al., 2003). It measures enhancement of productivity, positive impacts on performance, usefulness for company and employees (Venkatesh, et al., 2012). In the consumer usage context, customers will have a positive perception of a new technology system when they see its value in saving them time and effort than traditional options (Dwivedi, Rana, Janssen, Lal, Williams, Clement, 2017; Sharma & Sharma, 2019; Tamilmani, Rana, Prakasam, & Dwivedi, 2019; Venkatesh, et al., 2003). Convenience can be seen as the major performance expectancy for OFD services, firstly users' will be able to order from anywhere saving time and effort; secondly, OFD services provides rating and reviews which will assist the user's decision making process; thirdly, transaction convenience allows the users multiple payment options either via credit/debit cards, e-wallets or cash on delivery and lastly it allows for post-benefit convenience whereby is saved your address, payment preference and previous orders which makes for easy re-purchases (Deloitte, 2009). Customers' view the key benefits of using products and services as a direct impact of repeated use and drives positive behavioural intention (Alalwan, Dwivedi, & Rana, 2017; Rana,

Dwivedi, Williams, & Weerakkody, 2016; Shareef, Dutta, Kumar, & Dwivedi, 2018, Venkatesh, et al., 2003). Yeo, Goh, & Rezaei (2017) asserts that usefulness is a similar factor to performance expectancy and have significant impact on the customers intention to use OFD services. Accordingly, the following hypothesis is proposed:

**H1**: Perfomance expectancy will positively impact behavioural intention of consumers to use OFD services.

### 2.6.3 Effort Expectancy

Effort expectancy is the degree of ease associated with the use of the system. It measures ease-of-use, stress free interaction, importance of use (Venkatesh, et al., 2012). According to Alalwan, Dwivedi et al., (2017) when a new system is easy to use and requires minimum effort, so too does the customer's intention to continuously use the new system increase. Ease of use is an essential component in technology acceptance and diffusion of innovation (Alagoz & Hekimoglu, 2012; Alalwan, Dwivedi, Rana, & Williams, 2016; Davis, et al., 1989; Okumus & Bilgihan, 2014). OFD needs to be intuitive for customers to easily order without assistance from anyone. Customer intention to use OFD services could be informed by the customer's perception that the service is easy and simple to use. According to Okumus, Ali, Bilgihan, & Ozturk (2018) effort expectancy has a significant impact on customer's intention to use OFD.

The ease of use of OFD should not be a complicated process and should reduce time and be self-explanatory to customers. It can thus be proposed that if effort and complexity is low, customers will be pleased using the service. Kaewkitipong, Chen & Ractham (2016) advised that the impact of effort expectancy of an online learning tool was closely correlated to the student's satisfaction levels improving. Similarly, Zhuo (2011) highlights that ease of use improves customer's satisfaction with mobile payment application. In a study in India, Karulkar, Pahuja & Sayed (2019) asserted that effort expectancy was the most important factor in the adoption of OFD. Therefore, the following hypothesis suggested is:

**H2**: Effort expectancy will positively impact behavioural intention of consumers to use OFD services.

### 2.6.4 Social Influence

Social influence is the degree to which an individual perceives others believe they should use the new system. In the workplace context, it measures usefulness for co-workers, use by co-workers, encouragement by managers (Venkatesh et al., 2012). Social influence can also be considered as a critical factor in driving consumers to utilise OFD service. According to study in the United States, millenials outnumber baby boomers (75.4 million versus 74.19 million) and are responsible for 60% of online purchases (Digital Commerce 360, 2019). Paynter (2019) states that millennials are influenced predominantly by their social circles. Venkatesh, et al. (2003) hypothesised that social influence is "the extent to which an individual perceives that important others believe he or she should apply the new system". Since OFD is relatively new in South Africa, consumers' may not be fully familiar with the service and would generally be influenced by their social circles inclusive of family, friends and colleagues whos views and opinions carries significant weight (Tsao, Shieh, & Jan, 2009) and Verkijika (2018) asserts that consumers rely heavily on their social networks for advice and guidance on the adoption of new technology. In a recent study undertaken in South Africa, Verkijika (2018) discovered that consumer adoption of m-Commerce applications are driven by social influence which provides peace of mind to consumers' making payments using mobile devices

With relevance to OFD, Okumus et al. (2018) discovered mobile diet applications is highly influenced by family, friends and colleagues. Furthermore, consumers' levels of satisfaction or dissatisfaction and highly influenced by their social circle when using OFD service. According to Hsiao, Chang, & Tang (2016) social influence is a key factor in driving mobile application adoption for consumers. Therefore, the following hypothesis suggested is:

**H3:** Social Influence will positively impact behavioural intention of consumers to use OFD services.

### 2.6.5 Facilitating Conditions

Facilitating conditions are the degree to which an individual believes that an organisational and technical infrastructure exists to support the use of the system. It measures availability of the system, knowledge to operate the system, good placement within the corporate culture (Venkatesh et al., 2012). OFD can be deemed as software or application used with smartphones and mobile devices and an internet connection, preferably mobile internet in 4G/LTE or recently 5G.

Mobile connectivity and smartphone penetration are vital to the success of OFD service. The adoption rates of these factors have a direct correlation to adoption and growth of OFD services. Another key factor is the application or software loaded on the smartphone which allows for the front-end interface between the user and the restaurant. There are also periphery services in terms of human support at call centre for support and service-related issues.

Verkijika (2018) advise that facilitating conditions has been utilised predominantly in digital technology and marketing industries and has a significant impact on consumer adoption. Gu, Lee, & Suh (2009) asserted that facilitating conditions is defined as the external environment which allows consumers to overcome barriers to adopt new technology. Mobile technology consumer adoption is directly impacted by facilitating conditions and has a direct relationship to the adoption of mobile banking (Alalwan, Dwivedi, & Rana, 2017).

According to a study conducted by Al-Khaldi & Wallace (1999) the use of personal computers was influenced by users' attitude and knowledge of computers.

Due to the direct relation and significant influence of facilitating conditions, it can be suggested that the appropriate level of human support and related infrastructure is required to ensure customers have a seamless and easy user experience of OFD services which will relate to high customer satisfaction. Chan et al. (2010) further advised that there is significant correlation between facilitating conditions and system usage. Therefore, the following hypothesis is suggested:

**H4**: Facilitating Conditions will positively impact behavioural intention of consumers to use OFD services.

Without facilitating conditions, actual usage is less likely because as the OFD service will not be possible. Pahnila, Siponen, & Zheng, (2011) advised that facilitating conditions has a direct impact on behavioural intention and use behaviour which leads to the following hypothesis.

**H5**: Facilitating Conditions will positively impact actual OFD services use behaviour.

### 2.6.6 Hedonic Motivation

Hirschman & Holbrook (1982) introduced hedonic motives in consumer decision making as one of the important areas for understanding consumer behaviour and decision making. These motives are driven by fun or pleasure derived by the user from using the technology. Mikalef, Giannakos, & Pateli (2012) suggests that hedonic motivation refers to consumer behaviours such as pleasure, enjoyment, and happiness experienced while shopping which is supported by Babin, Darden, & Griffin (1994). OFD is generally performed via a mobile application and can be seen as modern and cutting edge (Yeo, Goh, & Rezaei, 2017), which suggests that consumers obtain enjoyment, pleasure and fun by using this channel. Moreover, the service has a level of innovativeness and customers may thus be attracted to the novelty of using the service (van der Heijden, 2004; Venkatesh et al. 2012). Furthermore, mobile applications have become a key part of people's lives and OFD services are perceived as creative and modern (Yeo et al., 2017). This could have a direct correlation to customers feeling pleasure and enjoyment (Okumus, Ali, Bilgihan, & Ozturk, 2018). According to Okumus & Bilgihan (2014) perceived enjoyment influences customers' willingness to adopt OFD services.

One of the unique features of OFD service is the ability it provides customers to review and rate the service (See-To & Ho, 2014). This feature gives customers an important role and they are aware their opinion matters which increases their feeling of pleasure. Iyer, Davari, & Mukherjee (2018) established the role of hedonic value as a contributing factor to customers' satisfaction with mobile retailing applications. Futhermore, Hsiao, Chang, & Tang (2016) supported the relationship between customers' satisfaction in a study of mobile social applications. Therefore, the following hypothesis is suggested.

**H6**. Hedonic motivation will positively impact behavioural intention of consumers to use OFD services.

### 2.6.7 Price Value

Price Value is “consumers’ trade-off between the perceived benefits of the applications and the monetary cost of using them” (Venkatesh et al., 2012; Dodds, Monroe, & Grewal, 1991). Price Value comprises two categories in monetary costs and non-monetary costs. According to Petrick (2002), monetary costs is the financial value derived in comparison to the price paid and Boksberger & Melsen (2011) asserts that non-monetary costs is associated to time and effort being consumed. Customers would generally compare the benefits of a new system in contrast to both these costs (Alalwan, Dwivedi, & Rana, 2017; Dodds, Monroe, & Grewal, 1991; Venkatesh et al., 2012). Venkatesh et al. (2012) asserts that price value is positive when the benefits of using the technology are greater than the monetary and non-monetary costs, and that price value was among the critical factors contributing to continued use in contexts such as mobile internet services. Alalwan, et al., (2017) demonstrated that the role of price value in relation to mobile banking is an important factor relating to customers intention to use mobile commerce. In relation to OFD services, customers would generally compare the cost of ordering food via traditional means versus ordering online.

The use of OFD service could save costs and effort of ordering food from restaurants. Customer would not need to physically drive or walk to the restaurant which will reduce the effort. Restaurants also provides customer with discounts, free delivery and various promotions which are generally only available using OFD services. Therefore, the following hypothesis is proposed:

**H7**. Price value will positively impact behavioural intention of consumers to use OFD services.

### 2.6.8 Habit

Habit was another one of the UTAUT2 constructs added by Venkatesh et al. (2012) to the original UTAUT model to provide a more complete explanation of the customer's interactions with a new system. Hew, Lee, Ooi, & Wei (2015) confirmed Habit to be the most significant driver for behavioural intention to adopt in their study of mobile applications. The attachment people have to their mobile phones are increasing which has a direct correlation to their habitual behaviour associated with using mobile applications. OFD services predominantly operate within the mobile phone ecosystem. According to Amoroso & Lim (2017) customers who have good previous experiences utilsing mobile applications will likely form a habitual behaviour towards these applications and will be likely to continue using them in the future. Limayem, Hirt, & Cheung (2007) advices that the habit construct contains three user behaviours,

- Past behaviour - users' prior behaviour.
- Reflex behaviour - users' behaviour sequence which forms part of daily life.
- Individual experience – Accumulation of experiences from users' routines and norms associated to the system.

Habit has been confirmed as a strong predictor of continuous usage (Venkatesh, et al., 2012; Wang & Wang, 2010; Webb, Sheeran, & Luszczynska, 2009; Kim, Chan, & Gupta, 2007). In the areas of mobile commerce and application adoptions, habit has been seen to play a vital role in continuous use (Amoroso & Lim, 2017; Rana, et al., 2016; Sun & Chi, 2018). Habit is likely to be a key factor relating to continued use of OFD and according to Deloitte (2019) people's lives are getting busier, restaurants are offering a wide variety of foods and healthier options which will drive customers' to order mid-week and overall increase the frequency of utilising online food ordering services, and forming habits in their usage patterns. Therefore, the following hypothesis is proposed:

**H8**. Habit will positively impact behavioural intention of consumers to use OFD services.

According to Amaroso & Lim (2017) and Sun & Chi (2018), habit has played a key role in the actual use of mobile commerce. Amaroso and Lim (2017) highlights that satisfied customers with previous experience of mobile commerce are more likely to form habitual behaviour and will continuously use the application which leads to the following hypotheses.

**H9**. Habit will positively impact actual OFD services use behaviour.

### 2.6.9 Perceived Risk

Perceived risk and trust are key considerations in consumer adoption but which UTAUT2 lacks in its nomological network. The inclusion of these two determinants will create a more encompassing well-rounded framework considering all critical elements related to consumer technology adoptions. OFD users are generally concerned by the not having the correct meal being delivered, quality and freshness of the meal, being double charged, no delivery or the delivery exceeding the time frame promised. Perceived risk is vital in m-Commerce where the higher the risk of using the service, the lower will be the willingness to use (Hanafizadeh, Behboudi, Koshksaray, & Tabar, 2014). Perceived risk is thus deemed a detractor within the consumer adoption process. Therefore, the following hypothesis is proposed:

**H10**. Perceived risk will negatively impact behavioural intention of consumers to use OFD services.

### 2.6.10 Trust

Pavlou & Gefen (2004) and Zulkarnian, Ismail, Haque, & Ahmed (2015) found that trust has been shown to have a positive correlation to customers behavioural intention to purchase online.

When transacting online, individuals are likely to first consider whether the provider is trustworthy, capable, honest, and reliable (Pavlou & Gefen, 2004). Consumers needs to be confident in the information presented by the provider is reliable, they will deliver as promised and not take advantage of the consumer or

misrepresents their products online. It is equally important to consumers that there are channels of support available in the event of incorrect meals, missing items or payment issues arise. Furthermore consumers expect OFD service providers to keep their commitment in not only meeting delivery times, but also that the meals are deliverred as fresh as possible. Therefore, the following hypothesis is proposed:

**H11**. Consumer's trust will positively impact behavioural intention of consumers to use OFD services.

### 2.6.11 Behaviour to Actual Use

Behavioural intention is referred to a user's perceived attitude towards utilising a service whereby use behaviour refers to the actual use of the service (Taylor & Todd, 1995). Furthermore, behavioural intention is viewed as mediating variable whereas use behaviour is viewed as a dependant variable. According to Venkatesh, et al, (2012) behavioural intention is a major determinant of use behavior. The link between intention and actual use in UTAUT2 can be traced back to TRA where intentions are considered antecedent to actual behaviours. Prior research in the technology use context has confirmed that intention drives actual use. Therefore, it can be hypothesised that:

**H12:** The behavioural intention of consumers to use OFD services will positively impact their actual use behaviour.

### 2.6.12 Moderators

The original UTAUT model includes three moderators, namely age, gender and experience. Age and gender are included in this study's model as moderating factors while experience will not be included as a variable but will be controlled through sampling.

Age is considered a potential moderator because as the younger generation might adopt to OFD quicker than the older generation. Lee, Lee, & Shumann

(2002) asserts that the younger the user, the more likely adoption will occur especially when it comes to technology.

Gender is considered a potential moderator because it is vital to understand which gender will be more likely to utilise OFD service. Li, Glass, & Records, (2008) research shows that men are more likely to adopt new technology. On the contrary according to a study by Chinyamurindi & Louw (2010) which assessed the use of e-learning technology; women were found to have higher adoption rates than their male counterparts.

Experience is not considered as a variable in this study's model given the intended focus on OFD users with experience. Experience is controlled through the sampling process described in the next chapter.

This study's model adds two additional moderators not part of the original UTAUT but considered potentially relevant in the specific OFD context under study. First, variety seeking is regarded as one of the most common psychological heuristics when consumers make decisions (Ju, 2015). Variety seeking is selected as a moderator as it is an intrinsic feature of OFD services which provides for a wealth of cuisine types and restaurants to choose from within the platform. Individuals are assumed to differ in their variety seeking preferences that may influence OFD usage.

Second, household size is added as an additional moderator as the assumption that one to two person households may utilise OFD services differently and for different reasons to bigger households. For example, OFD could be deemed less cost effective for larger houses.

## 2.7 Summary and Conclusion

This chapter presented a background on e-Commerce highlighting key global trends. It explored the enablers of mobile penetration and rapid growth in m-Commerce, along with online business models. Benefits and risks of e-Commerce to consumers was also presented.

Thereafter, OFD was introduced as a category of e-Commerce and three categories of OFD were defined, along with other trends in OFD services such as “dark” kitchens. Consumer demand for OFD services was explored along with perceived risk and trust factors.

Although OFD is a growing sector, the chapter highlighted a need to understand the key factors that promote OFD usage, and ultimately will determine its growth. It can be assumed that OFD services caters for middle to upper class of society who are pressed for time and younger educated adults. However, there is currently no clear understanding of OFD consumers within South Africa.

Drawing on UTAUT2 along with theories of trust and risk in e-Commerce, a research model was developed consisting of twelve hypotheses summarised in Table 7 below. Age, gender, variety seeking, and household size were identified as potential moderators.

The table below summarizes the research hypotheses depicted in Figure 22.

**Table 6: Summary of Research Hypotheses**

| Hypothesis | Description |
|---|---|
| H1 | Perfomance expectancy will positively impact behavioural intention of consumers to use OFD services. |
| H2 | Effort expectancy will positively impact behavioural intention of consumers to use OFD services. |
| H3 | Social Influence will positively impact behavioural intention of consumers to use OFD services. |
| H4 | Facilitating Conditions will positively impact behavioural intention of consumers to use OFD services. |
| H5 | Facilitating Conditions will positively impact actual OFD services use behaviour. |
| H6 | Hedonic motivation will positively impact behavioural intention of consumers to use OFD services. |
| H7 | Price value will positively impact behavioural intention of consumers to use OFD |
| H8 | Habit will positively impact behavioural intention of consumers to use OFD services. |
| H9 | Habit will positively impact actual OFD services use behaviour. |
| H10 | Perceived risk will negatively impact behavioural intention of consumers to use OFD services. |
| H11 | Consumers trust will positively impact behavioural intention of consumers to use OFD services. |
| H12 | The behavioural intention of consumers to use OFD services will positively impact their actual use behaviour. |

# 3 RESEARCH METHODOLOGY

The objective of this chapter is to discuss the research methodology. This chapter will first cover literature on the research paradigm and quantitative research approach. This will be followed by presentation of the research design, including data collection methods, population and sampling, the research instrument, data analysis and interpretation. Finally, the research limitations and threats to validity and reliability are discussed along with the study's ethical considerations.

The Saunders Research onion framework (adapted from Saunders, Lewis, & Thornhill, 2009) as depicted in Figure 23 will be utilised to illustrate the various stages involved and development of this research methodology.

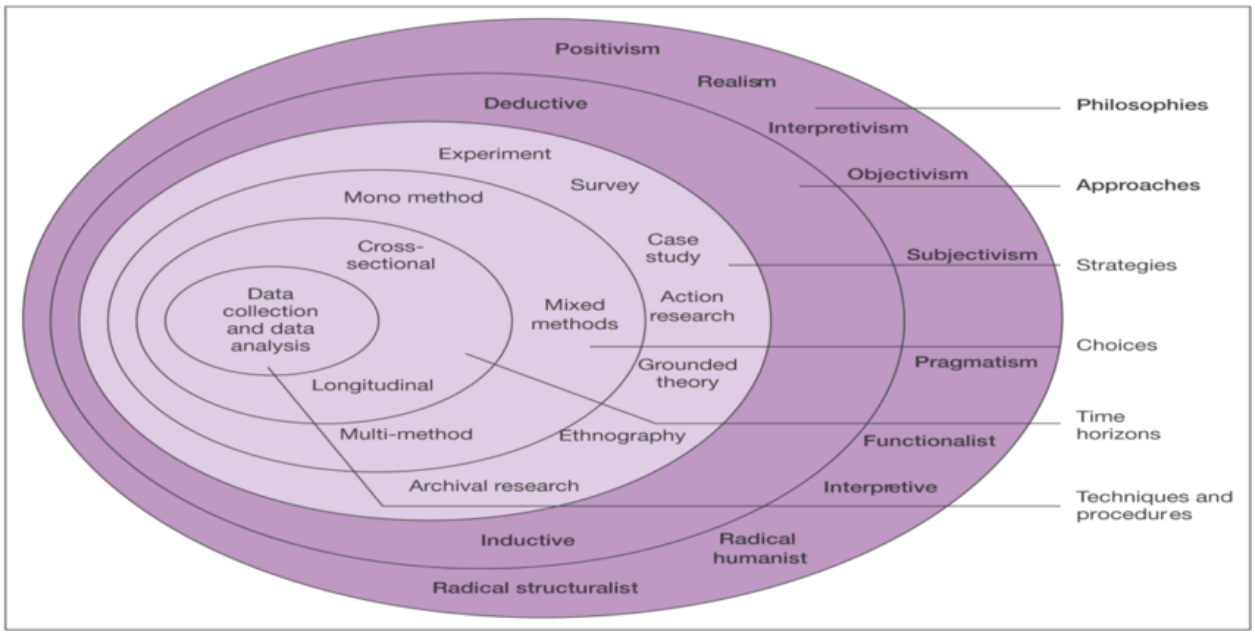



**Figure 23: Saunders Research Onion (Source: Saunders, Lewis, & Thornhill, 2007)**

## 3.1 Research Paradigm and Approach

Research paradigm refers to a belief system and theoretical framework to understand the reality that will inform the researcher's actions (Lincoln, Lynham, & Guba, 2011; Denscombe, 2011). Furthermore Cohen, Manion, & Morrison (2007) defines research paradigm as one's lens of the world including beliefs, perception and awareness. Research paradigms differ in their underlying ontology, which refers to their views on the nature of reality, and in epistemology,

which refers to the kinds of knowledge considered valid and how the researcher should relate to the phenemonon under investigation (Cameron & Price, 2009).

The positivist research philosophy informs this study due to the fact that it observes factual knowledge and measurement via data collection can be enumerated (Cameron & Price, 2009). Gill & Johnson (2010) further clarifies that positivists use highly structured methodologies to analyse information. The positivist paradigm is underpinned by ontological beliefs based on the assumption that reality is objectively provided and data measured quantitatively with the researcher as an independent observer and external reality which is focused on law-like generalisation from observations (Antwi & Hamza, 2015). Positivists are concerned with measureable facts using scientific methods and generalistion of numbers which will result in a predictive outcomes utilising quantatitative research methods (Saunders, Lewis, & Thornhill, 2009).

Positivist research can be contrasted with interpretivist research which is aimed at theory building with the ontological beliefs based on interpretation (Antwi & Hamza, 2015). Walsham (1993) advised that reality is subjective and that there are no “correct” and “incorrect” theories. (Bhattacherjee, 2012:103) advises that,” interpretive researchers view social reality as being embedded within and impossible to abstract from their social settings, they interpret the reality through a sense-making process rather than a hypothesis testing process”. Antwi & Hamza (2015) asserts that interpretivist research is undertaken via action research, case studies, ethnographies, and grounded theory where data is measured qualitatively, and collection methods are conducted via focus group sessions, interviews, and observations.

Quantitative research emphasizes the computation in data collection and analysis which is a scientific model of the research process which is objective and deductive (Bryman, 2012) and emphasis is placed on testing theories based on assumptions and capabile of generalising and replicating findings (Klob, 2008 and Creswell, 2009). The data is used to explain social dynamics and determine the relationship between variables of cause and effect. The key benefits of following the quantitative research approach is that it allows for a quick process

based on statistical evidence whereby the results are independent of the researcher perspective.

It can be contrasted with qualitative research which is more suited to research that requires an individual meaning and the importance of interpreting the complexity of a situation (Creswell, 2014). Qualitative research generally takes the form of open-ended questions which allows the participants to share their respective views (Crotty, 1998). The results of the data collected is organised into various themes whereby the researcher will make interpretations of the meaining of the data collected (Creswell, 2014) and therefore the results are dependent on the researcher interpretation of the data.

Positivist research also typically proceeds deductively. Deductive research develops hypothesis based on pre-existing research and then formulates a new research approach to test it (Silverman, 2013). This method is particularly suited to the positivists philisophy who utilises the construction of hypotheses and statistical testing of data with an accepted level of probability (Snieder & Larner, 2009). This can be contrasted with inductive studies that aim to create theory as opposed to using an existing study. According to Flick (2011) this method does not start with a particular framework but via the data collection process which then informs the research focus. Creswell (2014) asserts that the inductive process moves back and forth between themes and the database until the researcher has established a comprehensive set of themes

## 3.2 Research Design and Strategy

Research design is defined as the framework or blueprint which includes the plan, structure and strategy used to collect and analyse data (Zikmund, Babin, Carr, & Griffin, 2013). Research designs include the following types, descriptive, relational, experimental, and meta-analytical (Creswell, 2014). This study follows a relational, i.e. correlational, research design. It is a formal study using a non-experimental quantititive and cross-sectional approach.

The most popular research strategy in the relational design is the survey. Field (2009) asserts that surveys are the best and most used research strategy for

quantitative studies. Key advantage of surveys, is that it is cost effective, allows the researcher to collect primary data quickly in real time and data can be statistically analysed immediately (Connolly, 2007).

This study employs a cross-sectional survey, which is defined by Bryman (2012:58) as, “a research design that entails the collection of data on more than one case at a single point in time in order to collect a body of quantitative or quantifiable data in connection with two or more variables which are then examined to detect patterns of association”. Saunders, et al. (2012) supports this view by referring to cross sectional design as a research design undertaken as a single point in time when data is collected on both the independent and dependent variables of the study simultaneously.

Cameron & Price (2009) advises that positivists prefer quesionnaire-based surveys which are close ended.The survey will be self administered using an online questionaire with questions having pre-determined answers, typically on a Likert-type scale. Quantitative research with surveys comes however with limitations due to the prescriptive nature of pre-determined answers and therefore fails to ascertain deeper explanations and considerations. Cooper & Schindler (2011) suggests that statistical studies provides a breath of information as opposed to an in-depth understanding. Lastly, quantitative research using surveys lacks a connection between researcher and patricipants during the data collection phase and therefore overlooks the respondents’ experience and perspective on the phenomenon of interest (Ary, Jacobs, Sorensen, & Walker, 2013).

The sampling strategy for the survey is described next.

## 3.3 Population and Sample

### 3.3.1 Population

Neuman (2014) defines population as the concretely specified large group of many cases from which a researcher draws a sample, and to which results from a sample are generalised. Gravetter & Forzano (2009) describes population as a

group of individuals of interest to the researcher. The target population for this survey includes South Africans of all age groups residing on urban areas of South Africa. They should have access to a smart phone and have access to a payment facility either provided by a bank or a mobile wallet, which is due to the fact that users of OFD would need these minimum requirements in order to transact.

According to Worldometer (2020) South Africa population is 59.2 million of which 39.5 million (66.7%) reside in urban and it is estimated that 23.3 million South Africans has smartphones (Statista, 2020). Flick (2011) posits that the population of the study is within the boundaries of a geographical delimitation; in this instance urban areas within South Africa and the whole population is generally not involved, but the result of the sample is generalised for the entire population.

### 3.3.2 Sample and Sampling Method

Sampling is the process of selecting a subset of the population to draw conclusions about the entire population (Cooper, et al., 2006). Neuman (2014) suggests that a “sample” is a small group of cases that a researcher picks from a larger group which it uses to create a generalisation of the population. Within quantitative research, there are two sampling methods; probability which relates to random selection where every participant has an equal chance to be selected and non-probability which does not involve random selection where every participant has a low probability of being selected (Bryman, 2012).

This study followed a non-probability sampling strategy using both convenience and snowball sampling methods. Time and resources necessitated use of convenience and snowball sampling methods, notwithstanding the COVID-19 lockdown restrictions which prevented use of techniques such as intercept method. First, in order to obtain a broad sample from various groups to achieve a generalist view, then a convenience sample of Wits Business School students and employees was selected. The selected employees and students were considered appropriate respondents for the objectives of the study because they reside in urban areas, have access to technology and are more educated. This convenience sample also allowed for a larger number of respondents to respond in the shortest time at minimal cost and which allows for quicker access to data.

Second, the researcher extended the survey using a snowball sampling approach to his professional and acquaintance network by including individuals working in businesses from different sectors (i.e., Human Resources, Financial, Telecommunications and Retail). Snowball sampling is a method whereby participants are recruited through a network of acquaintances and they further extend to survey to their network (Bhattacherjee, 2012).

Together, the two methods aimed for a large sample size so as to cater for a potentially low response rate, missing or unusable data. Tabachnick & Fidell (2003) advises that due to the study being quantitative in nature, the sample size should be big enough to perform statistical and multivariate analysis. It is therefore required that minimum sample sizes be obtained for statistical procedures such as factor analysis and multiple regression analysis that will be utilised. Field (2009) advises that bigger sample sizes increase statistical power to allow researchers to conclude on the statistical significance of observed relationships. The sampling method adopted for the study allowed for a sample of 3000 to be targeted across Wits Business School students and employees and the researchers professional network.

## 3.4 Data Collection Methods

Data was gathered from the sample using an online self-completion questionnaire with close-ended questions. This method allows for large amounts of data to be collected in order for positivists to draw conclusions (Cameron & Price, 2009; Cooper, Schindler, & Sun, 2006) as the result of the survey will be easy to present, summarise and compare. Field (2009) asserts that questionnaires are the most frequently used data collection method in quantitative behavioural research, and Sekaran & Bougie (2013) elaborates that when a study is descriptive or relational in nature, questionnaires are considered to be the most effective instrument to gather data. A questionnaire survey cannot be deemed as an easy task for the researcher as it needs to be designed in a such a way that it achieves the research objectives (Bless & Higson-Smith, 2000). According to Zikmund, Babin, Carr, & Griffin (2013) a successful questionnaire survey needs to consider three standard considerations to ensure quality and

design; (1) what should be asked, (2) reliability of questions and (3) validity of questions. These elements need to align to the overall research objectives and must be clear and avoid biases. In order for the researcher to ensure the questions are understood, a pilot study was conducted to ensure the questions were easily understood and respondents could complete in the shortest possible time and the questionnaire needed to have content and face validity. Content validity was supported as the selection of the questionnaire items was based on previously validated questionnaire instruments. Content validity was further assured through the process of pre-testing which is where experts in research were asked to comment on the questionnaire items (Bolarinwa, 2015). Face validity was driven through pilot testing where the researcher determined that the questionnaire items were considered easy to understand and meaningful from the perspective of the population (Bolarinwa, 2015). Pre-testing and pilot testing is described further below.

## 3.5 The Research Instrument

The research instrument that was used in the study was an online self-completion questionnaire (also referred to as self-administered questionnaire). This approach allowed for the researcher to have multiple questionnaires answered at the same time as assistance of an interviewer is not required (Bryman, 2012) and enables objectivity, confidentiality and reduces social desirability as participants will read the questions and record the answers themselves. According to Babbie (2013) and Wagner & Garner (2012) there are a few self-administered questionnaires formats, including mail (postal) surveys; group-administered; and e-mail and internet surveys. Cooper & Schindler (2011) advises that online quesionnaires are quick and efficent and allows for a broader geographical reach. The construction of the survey was based on objectives of the study and from a collection of past OFD instruments which will be tailored to suit this current study (Zikmund, et al, 2013).

The research instrument was be split into four sections; Section A required participants to fill in their demographic information, Section B related to general experience of in terms of smartphone ownership, primary internet access

methods and previous online purchase behaviour. Section C and D required participants to complete information regarding their behaviour relating to OFD; performance expectancy, effort expectancy and social influence, etc. The demographic data and general information collected assisted in providing a correlation between the sample and the general population, these questions were forced and closed-ended providing the participant with a choice of a selection of predetermined answers (Wagner & Garner, 2012). A 7-point Likert scale for Section C and D was utilised as it is an easy construct to use to evaluate both independent and dependant variables on a scale of strongly disagree (1) to strongly agree (7). The compilation of the instrument is formed by previous surveys and scales from past instances (Acedo & Florin, 2006; Cools & Van Der Broek, 2007). The survey was pre-tested by academic experts and piloted on 10 individuals to improve content validity and ensure there is clarity and no ambiguity in the questions.

A summarised version of the research instrument in Table 7 provides an overview of the structure, the questions and the items that constituted the survey.

**Table 7: Research Instrument Summarised (Source: Primary data)**

| Variable | No of Items | Example Measurement Item | Scale | Literature source |
|---|---|---|---|---|
| Performance Expectancy | 10 | The OFD service will be convenient for me to use | Likert 1-7 | Vankatesh, Thong & Xu (2012) |
| Effort Expectancy | 3 | Learning to operate the OFD service would be easy for me | Likert 1-7 | |
| Social Influence | 3 | People who are important to me think that I should use OFD | Likert 1-7 | |
| Facilitating Conditions | 3 | I have the necessary resources to use the OFD | Likert 1-7 | |
| Hedonic Motivations | 3 | Using the OFD is fun | Likert 1-7 | |
| Price Value | 3 | OFD is reasonably priced | Likert 1-7 | |
| Habit | 3 | The use of OFD has become a habit for me | Likert 1-7 | |
| Behavioural intention to use the system | 5 | Assuming I have access to OFD, I intend to use it | Likert 1-7 | |
| Actual use the system | 3 | Over the past month, how many times have you used an OFD service (i.e. UberEats or MrD) to complete an online order? | Selection | |
| Perceived Risk | 5 | It is likely that food purchased from the OFD service may fail to meet the intended quality | Likert 1-7 | Featherman & Pavlou (2003) |
| Perceived Trust | 6 | OFD service providers are trustworthy | Likert 1-7 | Lou, Li, Zhang & Shim (2010) Thatcher, Carter, Li & Rong (2013) |
| Variety Seeking | 3 | I think it is fun to try out foods I am not familiar with | Likert 1-7 | Simonson (1990); Barrett & Salovey (2002); Connolly & Ordóñez (2003) |

### 3.5.1 Pre-testing and Pilot testing of the questionnaire

Pre-testing is the assessment of the content validity of questionnaire. Hilton (2015) suggests that pretesting is a method of validating that questions has the intended outcome and are clear and understood by participants

Pre-testing involved sending the questionnaire in electronic format to academic experts who were asked to review and assess the questionnaire in order to ascertain if it made sense and was acceptable. The experts provided valuable recommendations which resulted in the addition of variety seeking, a more extensive list of questions in experience, additional questions around performance expectancy and an overall shorter and succinct questions. Once all the feedback was received, revisions were made based on the suggestions received.

A pilot study is a small-scale study which determines the viability of the larger study. Hurst, et al. (2015) reaffirms that pilot testing includes simulating the data collection process in order to identify problems with the research instrument and methodology. Cooper & Schindler (2011) further suggest that the pilot study assists researchers to identify flaws used for data collection, average time taken to complete and any other challenges. Pilot testing also supports assessment of the face validity of the survey. Pilot testing involved a pilot study of 10 participants selected as a convenience sample from the researcher's professional network who were considered relevant sample for the population under study. The pilot testing was conducted in September 2020. The feedback was noted, and the questionnaire adjusted based on the comments received. For example, certain questions were rephrased to be more concise and clearer, the inclusion of a progress bar was added to assist respondents to ascertain how far they were with completing the survey. There was also a comment on income levels where the category R500k – R750k was missing, this was subsequently corrected.

The final questionnaire (see Appendix A) was then administered as outlined below.

## 3.6 Procedure for data collection

The survey was administered using the Qualtrics online survey tool. Qualtrics supports the design, distribution, capture and summarising of the research data. The initial set of respondents comprised the sample of students and employees who were contacted via email to all Wits Business School employees and students (see Appendix B for copy of the cover letter/invitation with survey link); this all occurred in a single instance over a three week period which took place in October 2020. Due to the good survey response over this period no further reminders were sent. Furthermore, the researcher sent the survey to his professional network and asked to pass the survey on to their contacts who utilises OFD services. Within the email invitation, the necessary details surrounding the study was described. The respondents were given an opportunity to agree or disagree to participate, and if agreed; a web-based link directed the participant to the questionnaire. The questionnaire used in the study was standardised with pre-defined and close ended with a 7-point Likert scale; in order to maintain face and content validity.

## 3.7 Data analysis and interpretation

Quantitative data can be analysed using various methods ranging from basic analysis (i.e., univariate) to complex (i.e. multivariate) analysis such as factor analysis, cluster analysis, multiple linear regression (Babbie, 2013; Wagner, Kawulich, & Garner, 2012). The Statistical Package for Social Scientists (SPSS) version 26 was used as the most appropriate statistical software to perform the statistical analysis. The software package is easy to use and produce outputs that are easy to understand and interpret (Field, 2013). Before the data was captured into SPSS, the data was analysed to ensure there was no missing data. One of the common problems with surveys are that they generally result in missing data due to the participant not completing all the necessary fields. Field (2013) suggests that missing data within the data collection process can be as a result to long questionnaires, time constraints, participants exercising their rights not to answer or sensitive related questions.

Once the data was captured from Qualtrics, it was cleaned to ensure data integrity where the data was cleaned and validated and edited to ensure coding was accurate. The data was then exported to SPSS and checked for missing data and violation of any statistical assumptions (Field, 2013). Furthermore, descriptive statistics was used to illustrate the central tendency and distribution of the data.

Validity and reliability were then verified in order for statistical techniques to be used for hypothesis testing. Specifically, principal components analysis was carried out along with tests of internal consistency reliability through Cronbach's alpha.

Convergent and discriminant validity of the data was achieved through the principal components factor analysis (Miller, Acton, Fullerton, & Maltby, 2002). Convergent validity includes the items within a research instrument being related to what they are meant to evaluate which is achieved through having a high correlation between items on a research instrument that aims to measure the same construct (Bhattacherjee, 2012). The results generated from the principal component analysis determined content validity based on the high primary loading exceeding 0.60. Discriminant validity tests whether measurements that are not supposed to be related and actually unrelated. This ensures that items intended for a particular construct does not measure with other constructs (Bhattacherjee, 2012). Discriminant validity was shown through PCA by showing low cross-loadings, less than 0.40 on non-intended constructs.

Reliability is defined as the consistency of a concept that is being measured and yields the same results on repeats trials (Neuendorf, 2002). Reliability in research refers to the instrument's ability to measure the repetition of the research findings and produce results (Cooper et al., 2006). Bless and Higson-Smith (2000:125) argues that reliability is "the extent to which the observable (or empirical) measures that represent a theoretical concept are accurate and stable when used for the concept in several studies". There are various types of reliability; inter-rater, test-retest, parallel forms and internal consistency. For this study, internal consistency reliability was used as its more common in quantitative research to measure the consistency of research instruments used when collecting data of

constructs. (Drost, 2011). For the internal reliability analysis in the case of a multi-item survey, Cronbach's alpha calculation was applied to provide a quantitative assessment of the amount of internal consistency across the specified items. This method was used to ensure item measures in the same construct would produce a consistent result of the research was to be conducted at a later stage. The general accepted lower limit for Cronbach's alpha is 0.7 and the results of the study show that none of the items were below 0.7. Once scales have been found reliable then composite scores will be calculated for use in subsequent hypothesis testing.

Hypothesis testing uses the observed data, to infer whether hypothesis presented in this paper can be supported or rejected by empirical observation (Bhattacherjee, 2012). Following data cleaning and validity and reliability testing, inferential statistics were used for testing the hypothesis in the study with regards to the association on independent variables (UTAUT2 factors, risk and trust) and dependent variables (behavioural intention). Correlation analysis was used initially to examine the bivariate relationships among the constructs. Subgroup analysis was employed to test the moderating effects of age, gender, variety seeking and household size. The paths (effect sizes) were compared across sub-groups using Z-tests to determine if there were any statistically significant differences. Thereafter, multiple regression was used as a final test of the model's twelve hypotheses. Multiple regression analysis brought further insights into the UTAUT2 factors as independent variables on the behavioural intention to use OFD services, then risk and trust as independent variables on the behavioural intention to use OFD services. The p-values of the beta-coefficients from the multiple regressions were used to confirm or reject hypotheses. A threshold of $p <= 0.05$ is generally considered significant and the lower the p value the greater the amount of statistical significance (Bhattacherjee, 2012).

### 3.7.1 Limitations and threats to internal and external validity

Validity and reliability relate to understanding the logic and accuracy the measurement scales (Wilkins, 2010). There is no validity without reliability, but there can be reliability without validity thus the need to test both (Field, 2009).

Construct validity, in the form of convergent and discriminant validity, were established using the PCA technique described earlier. Scale reliability was established using the internal consistency approach described above.

Internal validity relates to the accuracy of the research instrument used (Field, 2009). Cooper et al. (2006) advises that this type of measurement emphasises on whether the instrument consistently measures what it is meant to measure when repeated. Thomas (2004) asserts that questioning as a data collection method can be problematic as the questions could be interpreted in different ways by the participants. The instrument has not been testing for language barriers which may be experience in the population sample. Surveys are also subject to other possible limitations such as acquiescence bias, or the tendency of respondents to agree with statements, and a social desirability bias. As the study was administered online, there is no way of verifying the data inserted by the participant and the researcher thus must rely on honesty and credibility of the participants. Participants were however asked to answer honestly when answering the questionnaire and were reminded that there were no right or wrong responses to the survey items. The COVID-19 pandemic could have a distorted response on the adoption OFD services.

It however has to be noted that due to the cross-sectional approach of this study, the data lacks temporal precedence and therefore causal inferences cannot be assumed from the data and any causal inferences (e.g., Trust increase adoption) are made only with reference to underpinning theory used in hypothesis development. Therefore, the inability to control all the confounding factors is another threat to the internal validity of the study.

Cooper et al. (2006) advises that external validity relates to the generalisability of research findings relevant to the population and Weiner (2007) postulates that is about ensuring the findings from the sample will apply in real life contexts. The study made use of a non-probability sampling method and thus there is a systematic bias for external validity and generalisability of the study. As convenience and snowball sampling was utilised, the outcome may not be a true reflection of the sample. For example, the majority of the participants would reside in the Johannesburg metropolitan region. The results would therefore be less

generalizable to other urban areas in the country. Surveys are often subject to low response rates which might result in a non-response bias which could further limit the generalizability of the results. However, the intended target population has varying levels of age, gender, employment status, annual income and education levels, which is the intended consumer group for OFD services and will provide a useful set of results even if they are not representative of the broader consumer population.

## 3.8 Ethical Considerations

According to Cooper and Schindler (2011:32) ethics are “norms or standards of behaviour that guide moral choices about our behaviour and relationships with others”. Research needs to be conducted within ethical boundaries to ensure that no harm comes to respondents (McLeod, 2003). The researcher recognises the following ethical considerations for this study:

a) Institutional approval: The University requires all students to request for ethical clearance before they embark on any kind of research. Approval of this study was requested and granted by the relevant Human Research Ethics Committee (non-medical) of WBS at the University of the Witwatersrand, Johannesburg (see Appendix C for copy of the ethics clearance).

b) Informed consent, Voluntariness and Right to withdraw: The researcher undertook to explain what the research is about and the participants’ rights and protections before sharing the questionnaire. The participant’s decision to continue to complete the online questionnaire was taken as their consent. The participant could reserve the right not to proceed and withdraw from completing the questionnaire at any stage without risk or penalty. The questionnaire cover page included the ethical guidelines which was to ensure the participants were aware of their rights upfront.

c) Confidentiality: The researcher ensured all information shared by the participant remained confidential and was not to be shared with any third

party. All data captured was only used for the research purposes and raw responses were to be discarded once the study was completed.

d) Anonymity: The participants were also made aware of their right to anonymity and were not required to identify themselves anywhere in the questionnaire. The participants were provided with alternative contact information should they wish to disclose something related to the research.

## 3.9 Conclusion

This chapter explored the research methodology employed by this study which outlined the research design and strategy, population and sample approach, data collection method including the research instrument, pre-testing and pilot testing. There after data analysis and interpretation for reliability and validity and concluded with ethical considerations.

The next chapter will present the study's results.

# 4 PRESENTATION OF RESULTS

## 4.1 Introduction

The objective of this chapter is to present and interpret the results from the study's analysis. The first sections of the chapter highlight the data cleaning process including checking for missing values and identifying outliers who did not fit the sample. This is followed by a description of the sample profile based on the respondents' demographic data. Thereafter, results of the reliability and validity testing are discussed and lastly the chapter presents results of the correlation and regression analyses used for hypothesis testing.

## 4.2 Data Screening and Missing Values

The data was collected using an online survey administered by Qualtrics. A total of 228 responses were received. The data cleaning process started by checking for missing values and the following were discovered; two (2) respondents did not agree to participate in the survey and the survey immediately ended, and twenty-two (22) respondents did not complete the survey omitting to respond to an overwhelming majority of items. Response patterns were also checked and one (1) respondent who exhibited a questionable response pattern having "agreed' on the Likert scale to all statements was removed. Thus, after data screening, 25 responses were eliminated, and 203 respondents remained. Reverse coding was not required as all variables were phrased in the correct manner.

## 4.3 Outliers

The next stage was to examine the remaining 203 responses in order to identify outliers. Outliers are generally respondents who might not seem to fit into the same population or have unusually high or low values. The SPSS standardised score function was utilised to determine if any cases scored less than -3 or greater than +3 was highlighted on 5 or more questionnaire items. Bhattacherjee (2012) advised that standardised scores of greater than ±3 standard deviations from the mean can be considered outliers. Three (3) respondents were

eliminated based on this criterion as they exhibited extreme standardised scores across multiple items.

Additional outliers were then identified by reviewing responses in terms of online purchase experience. Five (5) respondents had never purchased any items online before and thirteen (13) respondents had never ordered food online before. These respondents were not considered part of the study's focus on users of OFD services and were eliminated. Finally, there were only two (2) full time students responding to the survey. Full-time students were not deemed to be part of the target consumer population as their income and expenditure patterns are likely to follow different patterns from employees with steady income streams and their responses were thus eliminated. This resulted in a final sample size of 180 for further analysis.

## 4.4 Demographic Profile of Respondents

As highlighted above, a total of 228 responses were initially received and following data screening and removal of outliers, the study's final sample amounted to 180 used for the analysis. Respondents were asked several demographic questions, i.e., age, gender, education, income, employment status and number of people occupying a household. Respondents were also asked questions in relation to their experience of online shopping, i.e., smartphone ownership, primary access medium to the internet, last time purchased online, ordering food online, payment methods, COVID-19 impact to online shopping, monthly OFD usage and times OFD is most used. Descriptive statistics were utilised to summarise the results, which are presented in the tables below.

### Gender, Age and Education

Sample characteristics revealed that most of the respondents represented in the survey were males (57%) then females (42%) and remaining (1%) preferred to self-identify; nevertheless a good balance of males and female. The largest number of respondents (43%) reported themselves as being in the 35 – 44 age group, followed by 25 – 34 age group (34%), 45 – 54 age group (14%), 55 – 64

age group (6%), 18 – 24 age group (2%) and both 65 and above age group and prefer not to say categories at 1% each; therefore, a larger middle age population. With reference to education about one-third of respondents had an Honour's Degree (32%), followed by Master's Degree (19%), Bachelor's Degree (18%), Diploma (17%), High School (12%) and lastly PHD/Doctorate (3%); therefore the sample reflects a well-educated subset.

**Table 8: Respondent Demographics of Gender, Age and Education**

| **What is your gender?** | | | | |
|---|---|---|---|---|
| | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
| Female | 76 | 42% | 42% | 42% |
| Male | 102 | 57% | 57% | 99% |
| Prefer to self-identify (other) | 2 | 1% | 1% | 100% |
| **Total** | **180** | **100%** | **100%** | |
| | | | | |
| **What is your age group?** | | | | |
| | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
| 18-24 | 4 | 2% | 2% | 2% |
| 25-34 | 61 | 34% | 34% | 36% |
| 35-44 | 77 | 43% | 43% | 79% |
| 45-54 | 25 | 14% | 14% | 93% |
| 55-64 | 10 | 6% | 6% | 98% |
| 65 and above | 2 | 1% | 1% | 99% |
| Prefer not to say | 1 | 1% | 1% | 100% |
| **Total** | **180** | **100%** | **100%** | |
| | | | | |
| **What is your highest level of education?** | | | | |
| | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
| High school | 21 | 12% | 12% | 12% |
| Diploma | 30 | 17% | 17% | 28% |
| Bachelor's Degree | 32 | 18% | 18% | 46% |
| Honour's Degree | 58 | 32% | 32% | 78% |
| Master's Degree | 34 | 19% | 19% | 97% |
| PHD/Doctorate Degree | 5 | 3% | 3% | 100% |
| **Total** | **180** | **100%** | **100%** | |

## Annual income, Employment Status and Person's per Household

A little less than one-third of respondents (27%) was in the greater than R1, 000,000 per annum income category with about one-third earning less than R500, 000 category. The majority of respondents thus earned in excess of R500, 000. With reference to employment status, most of the respondents were full-time employed (77%), followed by self-employed (14%), not currently working (4%), employed part-time (3%) and the retired (2%). Lastly, most of the respondents were in the 4 persons or more household category (41%), followed by 2 persons (22%), 3 persons (21%) and 1 person (17%); therefore, a good representation of employed, middle to higher income persons from larger households.

**Table 9: Respondent Demographics of Annual income, Employment Status and Person's per Household**

| **What is your annual income per annum - before tax?** | | | | |
|---|---|---|---|---|
| | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
| R0 - R100,000 | 9 | 5% | 5% | 5% |
| R100,000 - R250,000 | 14 | 8% | 8% | 13% |
| R250,000-R500,000 | 35 | 19% | 19% | 32% |
| R500,000-R750,000 | 28 | 16% | 16% | 48% |
| R750,000 - R1,000,000 | 25 | 14% | 14% | 62% |
| Greater than R1,000,000 | 49 | 27% | 27% | 89% |
| Prefer not to say | 20 | 11% | 11% | 100% |
| **Total** | **180** | **100%** | **100%** | |
| | | | | |
| **Employment Status** | | | | |
| | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
| Employed full-time | 139 | 77% | 77% | 77% |
| Employed part-time | 6 | 3% | 3% | 81% |
| Self-employed/Contractor | 25 | 14% | 14% | 94% |
| Not currently working | 7 | 4% | 4% | 98% |
| Retired | 3 | 2% | 2% | 100% |
| **Total** | **180** | **100%** | **100%** | |
| | | | | |
| **Single vs multi-person household** | | | | |
| | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
| 1 person | 30 | 17% | 17% | 17% |
| 2 persons | 39 | 22% | 22% | 38% |
| 3 persons | 37 | 21% | 21% | 59% |
| 4 persons or more | 74 | 41% | 41% | 100% |
| **Total** | **180** | **100%** | **100%** | |

## 4.5 Online Experience of Respondents

### 4.5.1 Smartphone Ownership and Form of Internet Used

All of the respondents represented in the survey owned a smartphone (100%) which is in contrast to data on the smartphone penetration in South Africa, and according to Statista (2020) is approximately one third of the country's population. This study's findings are however of no surprise as the majority of respondents were employed, had a high level of education and earned a relatively good income. Most of the respondents' primary use of internet access was via Fibre (40%), followed by Wifi (39%) and Mobile Data/LTE (21%).

**Table 10: Respondent Demographics of Smartphone Ownership and Form of Internet Primarily Used**

| **Smartphone ownership** | | | | |
|---|---|---|---|---|
| | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
| Yes | 180 | 100% | 100% | 100% |
| No | 0 | 0% | 0% | 100% |
| **Total** | **180** | **100%** | **100%** | |
| | | | | |
| **Which form of internet connection do you primarily use to access the internet?** | | | | |
| | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
| Mobile Data / LTE | 37 | 21% | 21% | 21% |
| Wi-Fi | 71 | 39% | 39% | 60% |
| Fibre | 72 | 40% | 40% | 100% |
| **Total** | **180** | **100%** | **100%** | |

### 4.5.2 Have You Ordered Online Food before, when Last Did You Purchase and Form of Payment Utilised

All of the respondents represented in the survey ordered food online before (100%) and most of the respondents indicated that the last time they purchased food online was within the week (45%) immediately preceding the survey, followed by within the last two weeks (22%), within the past six months (15%), within the past month (14%), within the past year (3%) and more than a year ago (1%). Additionally, most respondents utilised a credit card (53%) as a form of payment when purchasing online, followed by debit card (41%), electronic funds transfer (4) and other (3%).

**Table 11: Respondent Demographics of Ordering Online Food, Last Time Purchased and Form of Payment Utilised**

| Have you ordered food online before? | | | | |
|---|---|---|---|---|
| | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
| Yes | 180 | 100% | 100% | 100% |
| No | 0 | 0% | 0% | 100% |
| **Total** | **180** | **100%** | **100%** | |

| When was the last time you purchased food online? | | | | |
|---|---|---|---|---|
| | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
| Within the past week | 81 | 45% | 45% | 45% |
| Within the past two weeks | 40 | 22% | 22% | 67% |
| Within the past month | 25 | 14% | 14% | 81% |
| Within the past six months | 27 | 15% | 15% | 96% |
| Within the past year | 5 | 3% | 3% | 99% |
| More than a year ago | 2 | 1% | 1% | 100% |
| **Total** | **180** | **100%** | **100%** | |

| When purchasing online, which form of payment do you make the most use of? | | | | |
|---|---|---|---|---|
| | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
| Credit Card | 95 | 53% | 53% | 53% |
| Debit Card | 73 | 41% | 41% | 93% |
| Electronic Funds Transfer (EFT) | 7 | 4% | 4% | 97% |
| Other | 5 | 3% | 3% | 100% |
| **Total** | **180** | **100%** | **100%** | |

### 4.5.3 Have You Ordered Food Online before COVID-19 and How Did It Change Your Behaviour?

The vast majority of the respondents (97%) ordered food online before COVID-19. Many respondents (39%) had no change in their purchasing behaviour as a result of COVID-19 such as due to lockdowns and restaurant closures, but a large number have purchased more (27%) or a lot more (19%) since COVID-19, with very few reporting less (7%) to a lot less (7%).

**Table 12: Respondent Demographics of Ordering Food as a Result if COVID-19**

| Have you ordered food online before COVID-19? | | | | |
|---|---|---|---|---|
| | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
| Yes | 175 | 97% | 97% | 97% |
| No | 5 | 3% | 3% | 100% |
| **Total** | **180** | **100%** | **100%** | |
| | | | | |
| **To what extent has COVID-19 changed your online purchase behaviour? I now purchase online…** | | | | |
| | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
| A lot more | 35 | 19% | 19% | 19% |
| More | 49 | 27% | 27% | 47% |
| No change | 71 | 39% | 39% | 86% |
| Less | 13 | 7% | 7% | 93% |
| A lot less | 12 | 7% | 7% | 100% |
| **Total** | **180** | **100%** | **100%** | |

### 4.5.4 No. of Times OFD used over the Past Month and Times Most Used?

Most of the respondents utilised OFD service by placing an order online 1 – 2 times (32%), followed by 3 - 4 times (30%) 7 or more (14%) and 5 – 6 times (7%) in the past month. Around 16% reported not having placed an order in the past month. Thus, on average OFD consumption occurs about once a week, or more frequently, for at least half the respondents. Additionally, most respondents ordered within the following times, 5pm – 8pm (67%), 2pm – 5pm (18%), 11am – 2pm (7%), 8pm – midnight (6%), Not applicable (2%) and Midnight – 11am (1%). This suggested a more popular use for dinner services relative to other meals.

**Table 13: Respondent Demographics of Number of Times OFD Services Used**

| Over the past month, how many times have you used an OFD service (e.g., UberEats or Mr D Food) to complete an online order? | | | | |
|---|---|---|---|---|
| | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
| 1 – 2 times | 58 | 32% | 32% | 32% |
| 3 – 4 times | 54 | 30% | 30% | 62% |
| 5 – 6 times | 13 | 7% | 7% | 69% |
| 7 or more | 26 | 14% | 14% | 84% |
| None | 29 | 16% | 16% | 100% |
| **Total** | **180** | **100%** | **100%** | |
| | | | | |
| **If ordered before, times most used:** | | | | |
| | **Frequency** | **Percent** | **Valid Percent** | **Cumulative Percent** |
| 11am – 2pm | 12 | 7% | 7% | 7% |
| 2pm – 5pm | 33 | 18% | 18% | 25% |
| 5pm – 8pm | 121 | 67% | 67% | 92% |
| 8pm - Midnight | 10 | 6% | 6% | 98% |
| Midnight - 11am | 1 | 1% | 1% | 98% |
| Not Applicable | 3 | 2% | 2% | 100% |
| **Total** | **180** | **100%** | **100%** | |

Taken together, the responses include adequate numbers of male and female respondents, from higher income earning groups, largely over age of 35, coming from multi-individual households with access to requisite technologies, and who are familiar with OFD purchasing. This is contrary to research done in United States by Zion & Hollmann (2019) who asserts that biggest OFD users are made up of the low income and young category, which could be a direct result of the target populations surveyed.

Furthermore, 62% of respondents ordered food online one to four times in the past month at the time of responding to the survey, as opposed to only 16% who did not order in the past month. This is in line with studies conducted by Cheng (2018) and Klein (2019) who discovered that consumers are not only growing but increasing in their usage. Another interesting demographic shows that 47% of respondents purchase more online due to COVID-19 which corroborates with a survey undertaken by O'Connor & Hudgins (2020) who found that 40% of consumers order more due to COVID-19; which could have been a catalyst to push some customers to adopt OFD service.

## 4.6 Mean Statistic: Performance Expectancy

It was considered important to ascertain, through the performance expectancy construct, the functional utility of OFD perceived by this sample of users. OFD is often described as being of value because of choice and convenience, and perhaps less so for its monetary savings or rich food product information.

Figure 24 shows there is an overall positive response of participants on performance expectancy across all factors. Scores of 5 and above highlights a positive sentiment towards performance expectancy. Only one factor, OFD service offers savings when ordering food online (PE06) received a mean of 3.4944 which aligns to “somewhat disagree” option on the Likert scale. “OFD services allows me to verify the best price for a meal” (PE07), “OFD services would offer detailed information about the foods featured” (PE05) and “using OFD services would delivery me good value” (PE10) scores reflect “neither disagree or agree”, which highlights that respondents were undecided by these factors. The remaining factors are very well perceived by respondents; using OFD would save time (PE01) and using OFD services would be convenient (PE02) having a strong level of agreement which would have been expected as key drivers to OFD usage. Using OFD services allows me to track my order status is a feature of OFD services (PE03) and therefore correlates very positive in the results.

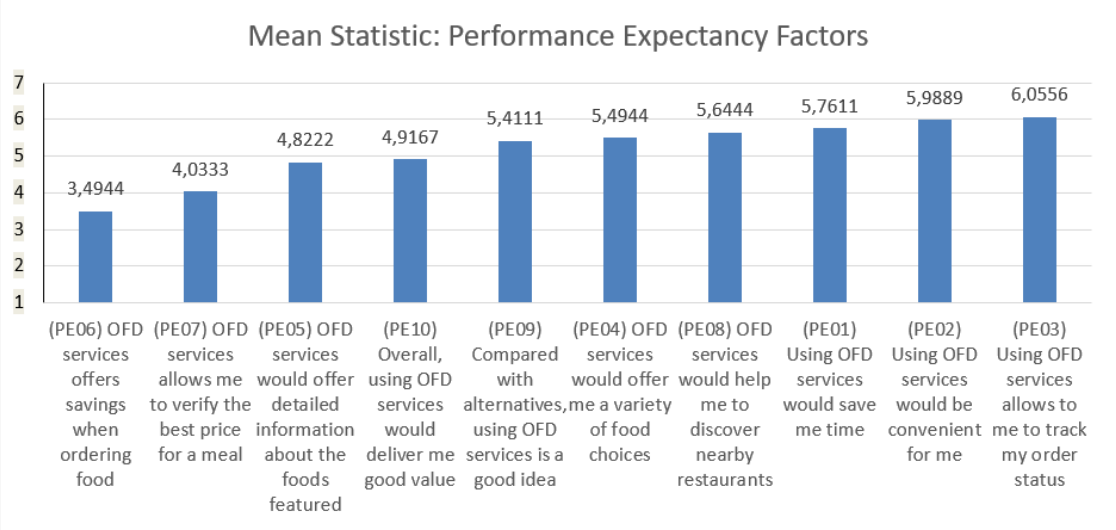



**Figure 24: Mean Statistics: Performance Expectancy Factors**

This detailed elaboration on performance expectancy was important as it as helps to highlights the main benefits of OFD as perceived by respondents. It contributes by showing the relative importance of benefits such as convenience over others such as monetary saving. The next sections proceed to analyse the reliability and validity of the scale items prior to hypothesis testing.

## 4.7 Validity

Construct validity, or more specifically unidimensionality, convergent and discriminant validity, was established through the use of principal components analysis (PCA) with a varimax rotation. The initial PCA results showed an 11-component solution. Habit and Behavioural Intention were statistically so strongly correlated that their items loaded onto the same component. In hindsight, this was not surprising as Habit was measured in a manner that was future focused (e.g., “The use of OFD services would be a habit for me”), which is conceptually similar to future OFD usage intention (e.g., “I would plan to use OFD services in the future”). Therefore, the decision was taken to drop Habit items. See Table 15 below for the loadings of habit and BI items on the same component.

**Table 14: Constructs Dropped During PCA**

| **Component Matrix[a]** | |
|---|---|
| | Component |
| The use of OFD services would be a habit for me (H01) | .813 |
| Using OFD services would be natural to me (H02) | .741 |
| Using OFD services would be part of my routine (H03) | .809 |
| Assuming I have access to OFD services, I intend to use it (BI01) | .813 |
| If I have an opportunity, I would order food through the OFD service provider (BI02) | .791 |
| I would intend to keep ordering food through the OFD service provider (BI03) | .843 |
| I would always try to use OFD services in my daily life (BI04) | .745 |
| I would plan to use OFD services in the future (BI05) | .742 |
| Extraction Method: Principal Component Analysis. | |
| a. 1 components extracted. | |

It was also established from the initial PCA run that Performance Expectancy items were not loading onto a single dimension, and there were other items in the

initial and subsequent runs that cross-loaded highly on multiple components or loaded less than 0.6 on any one component. These problematic items are listed below.

Table below details the items dropped.

**Table 15: Items Dropped During PCA**

| Construct | Variable Code | Items |
|---|---|---|
| Performance Expectancy | PE03 | Using OFD services allows to me to track my order status |
| | PE04 | OFD services would offer me a variety of food choices |
| | PE05 | OFD services would offer detailed information about the foods featured |
| | PE06 | OFD services offers savings when ordering food |
| | PE07 | OFD services allows me to verify the best price for a meal |
| | PE08 | OFD services would help me to discover nearby restaurants |
| | PE09 | Compared with alternatives, using OFD services is a good idea |
| | PE10 | Overall, using OFD services would deliver me good value |
| Behavioural Intention | BI03 | I would intend to keep ordering food through the OFD service provider |
| | BI04 | I would always try to use OFD services in my daily life |
| Perceived Risk | PR03 | It is likely that the OFD service may cause me to lose control over the privacy of my personal and payment information |

The above items were therefore also incrementally removed and before a final PCA analysis was run with two reliable PE items related to convenience and time saving remaining. The final PCA resulted in a stable solution, the outcome of which is reported below.

### 4.7.1 KMO and Bartlett's Test

**Table 16: KMO and Bartlet's Test Results**

| KMO and Bartlett's Test | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | 0,819 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 3423,935 |
| | df | 496 |
| | Sig. | 0,000 |

As part of factor analysis, the Kaiser-Meyer-Olkin (KMO) measure of sampling and Barlett test was conducted in order to verify where the sample size with the given variables were sufficiently large to justify the factor analysis. The KMO

measure (0.819) was significantly higher than 0.500 and was determined to be a good sample adequacy. The rotated Varimax solution with Kaiser Normalisation illustrating the factor loading structure i.e. present non-overlapping/overlapping independent factors were followed. All items that had a loading higher that 0.6 were considers acceptable and items with a loading less than 0.4 or high cross-loadings were eliminated. Analysis of the Bartlett's test of sphericity indicated that there were sufficient correlations between the variables which supports their factorability, which is indicated by a Sig. level of p=0.000.

### 4.7.2 Communalities Between Items

Communalities are estimates of the variance in each variable and they show that the variance in each variable is accounted by for all items or measures (IBM Knowledge Center, 2014). The majority of the communalities in Table 17 are all above 0.600 which shows that there are high levels of commonality with the lowest extraction of 0.592 for Perceived Risk item (PR02).

**Table 17: Communalities Between Items**

| Communalities | | |
|---|---|---|
| | Initial | Extraction |
| Using OFD services would save me time (PE01) | 1,000 | 0,792 |
| Using OFD services would be convenient for me (PE02) | 1,000 | 0,835 |
| Assuming I have access to OFD services, I intend to use it (BI01) | 1,000 | 0,799 |
| If I have an opportunity, I would order food through the OFD service provider (BI02) | 1,000 | 0,782 |
| I would plan to use OFD services in the future (BI05) | 1,000 | 0,756 |
| Using OFD services would be easy for me (EE01) | 1,000 | 0,807 |
| Learning how to use OFD services would be easy for me (EE02) | 1,000 | 0,782 |
| I would find interacting with OFD services clear and understandable (EE03) | 1,000 | 0,795 |
| My family would encourage me to use OFD services (SI01) | 1,000 | 0,592 |
| My friends would encourage me to use OFD services (SI02) | 1,000 | 0,853 |
| My colleagues and peers would encourage me to use OFD services (SI03) | 1,000 | 0,825 |
| I have the necessary (smart phone, application, data) resources to use OFD services (FC01) | 1,000 | 0,761 |
| I have the knowledge and ability to use OFD services (FC02) | 1,000 | 0,805 |
| I do not need assistance in order to use OFD services (FC03) | 1,000 | 0,672 |
| Using OFD services is fun (HM01) | 1,000 | 0,860 |
| Using OFD services is enjoyable (HM02) | 1,000 | 0,866 |
| Using OFD services is very entertaining (HM03) | 1,000 | 0,806 |
| OFD services are reasonably priced (PV01) | 1,000 | 0,834 |
| OFD services are good value for money (PV02) | 1,000 | 0,882 |
| At current prices, using OFD services are worth the money (PV03) | 1,000 | 0,856 |
| It is likely that food purchased from the OFD service may fail to meet the intended quality (PR01) | 1,000 | 0,770 |
| It is likely that the OFD service may cause me to suffer a financial loss due to order errors (PR02) | 1,000 | 0,641 |
| It is likely that the OFD may fail to deliver the order or make a late delivery (PR04) | 1,000 | 0,682 |
| It is likely that the price paid may not reflect the true value I get from the food (PR05) | 1,000 | 0,738 |
| It is likely that the OFD service may not present the food accurately on the application (PR06) | 1,000 | 0,649 |
| OFD service providers are trustworthy (PT01) | 1,000 | 0,672 |
| OFD service providers are capable and proficient (PT02) | 1,000 | 0,751 |
| OFD service providers care about their customers (PT03) | 1,000 | 0,674 |
| OFD service providers keep their commitments (PT04) | 1,000 | 0,751 |
| I think it is fun to try out foods I am not familiar with (VS01) | 1,000 | 0,780 |
| I like to try food from different restaurants (VS02) | 1,000 | 0,747 |
| I am constantly sampling new and different foods (VS03) | 1,000 | 0,758 |
| Extraction Method: Principal Component Analysis. | | |

### 4.7.3 Factor Extraction

There are ten (10) components with a cumulative sum of squared loading of 76.79%. This indicates that the ten factors explain 76.79% of total variance. The ten components thus explained a majority of the variance. These results are acceptable as total variance explained should exceed 60% for a PCA (Hair, 2018)

**Table 18: Factor Extraction**

| Total Variance Explained | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 8,719 | 27,246 | 27,246 | 8,719 | 27,246 | 27,246 | 3,277 | 10,241 | 10,241 |
| 2 | 3,098 | 9,680 | 36,927 | 3,098 | 9,680 | 36,927 | 2,960 | 9,249 | 19,490 |
| 3 | 2,515 | 7,860 | 44,787 | 2,515 | 7,860 | 44,787 | 2,589 | 8,090 | 27,580 |
| 4 | 2,257 | 7,054 | 51,841 | 2,257 | 7,054 | 51,841 | 2,589 | 8,089 | 35,669 |
| 5 | 1,891 | 5,911 | 57,752 | 1,891 | 5,911 | 57,752 | 2,368 | 7,400 | 43,069 |
| 6 | 1,628 | 5,086 | 62,838 | 1,628 | 5,086 | 62,838 | 2,322 | 7,256 | 50,325 |
| 7 | 1,432 | 4,475 | 67,313 | 1,432 | 4,475 | 67,313 | 2,253 | 7,040 | 57,365 |
| 8 | 1,268 | 3,962 | 71,274 | 1,268 | 3,962 | 71,274 | 2,243 | 7,008 | 64,373 |
| 9 | 1,039 | 3,248 | 74,523 | 1,039 | 3,248 | 74,523 | 2,090 | 6,532 | 70,905 |
| 10 | 0,726 | 2,269 | 76,792 | 0,726 | 2,269 | 76,792 | 1,884 | 5,887 | 76,792 |
| 11 | 0,711 | 2,220 | 79,012 | | | | | | |
| 12 | 0,636 | 1,988 | 81,000 | | | | | | |
| 13 | 0,566 | 1,770 | 82,770 | | | | | | |
| 14 | 0,517 | 1,615 | 84,385 | | | | | | |
| 15 | 0,514 | 1,607 | 85,992 | | | | | | |
| 16 | 0,446 | 1,393 | 87,385 | | | | | | |
| 17 | 0,423 | 1,321 | 88,706 | | | | | | |
| 18 | 0,382 | 1,194 | 89,900 | | | | | | |
| 19 | 0,365 | 1,141 | 91,041 | | | | | | |
| 20 | 0,344 | 1,074 | 92,115 | | | | | | |
| 21 | 0,315 | 0,986 | 93,100 | | | | | | |
| 22 | 0,311 | 0,971 | 94,071 | | | | | | |
| 23 | 0,286 | 0,894 | 94,965 | | | | | | |
| 24 | 0,283 | 0,885 | 95,850 | | | | | | |
| 25 | 0,248 | 0,775 | 96,626 | | | | | | |
| 26 | 0,218 | 0,682 | 97,308 | | | | | | |
| 27 | 0,193 | 0,602 | 97,909 | | | | | | |
| 28 | 0,166 | 0,518 | 98,428 | | | | | | |
| 29 | 0,141 | 0,441 | 98,869 | | | | | | |
| 30 | 0,140 | 0,436 | 99,305 | | | | | | |
| 31 | 0,117 | 0,365 | 99,671 | | | | | | |
| 32 | 0,105 | 0,329 | 100,000 | | | | | | |
| Extraction Method: Principal Component Analysis. | | | | | | | | | |

### 4.7.4 Rotated Component Matrix

Loading less that 0.4 are hidden to improve readability.

The PCA solution has demonstrated good convergent validity of the measures as the measurement item loadings were above 0.600, and good discriminant

validity where items did not load on constructs, they were not intended to measure.

This study could then proceed to the next stage to evaluate the internal consistency reliability of the measures.

**Table 19: Rotated Component Matrix**

| Rotated Component Matrix[a] | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Component | | | | | | | | | |
| | Performance Expectancy | Effort Expectancy | Social Influence | Facilitating Conditions | Hedonic Motivation | Price Value | Behavioural Intention | Perceived Risk | Perceived Trust | Variety Seeking |
| Using OFD services would save me time | 0,803 | | | | | | | | | |
| Using OFD services would be convenient for me | 0,806 | | | | | | | | | |
| Using OFD services would be easy for me | | 0,773 | | | | | | | | |
| Learning how to use OFD services would be easy for me | | 0,818 | | | | | | | | |
| I would find interacting with OFD services clear and understandable | | 0,806 | | | | | | | | |
| My family would encourage me to use OFD services | | | 0,605 | | | | | | | |
| My friends would encourage me to use OFD services | | | 0,865 | | | | | | | |
| My colleagues and peers would encourage me to use OFD services | | | 0,854 | | | | | | | |
| I have the necessary (smart phone, application, data) resources to use OFD | | | | 0,813 | | | | | | |
| I have the knowledge and ability to use OFD services | | | | 0,851 | | | | | | |
| I do not need assistance in order to use OFD services | | | | 0,752 | | | | | | |
| Using OFD services is fun | | | | | 0,856 | | | | | |
| Using OFD services is enjoyable | | | | | 0,829 | | | | | |
| Using OFD services is very entertaining | | | | | 0,855 | | | | | |
| OFD services are reasonably priced | | | | | | 0,835 | | | | |
| OFD services are good value for money | | | | | | 0,888 | | | | |
| At current prices, using OFD services are worth the money | | | | | | 0,825 | | | | |
| Assuming I have access to OFD services, I intend to use it | | | | | | | 0,720 | | | |
| If I have an opportunity, I would order food through the OFD service provider | | | | | | | 0,716 | | | |
| I would plan to use OFD services in the future | | | | | | | 0,678 | | | |
| It is likely that food purchased from the | | | | | | | | 0,815 | | |
| It is likely that the OFD service may cause me to suffer a financial loss due to order errors | | | | | | | | 0,706 | | |
| It is likely that the OFD may fail to deliver the order or make a late delivery | | | | | | | | 0,800 | | |
| It is likely that the price paid may not reflect the true value I get from the food | | | | | | | | 0,751 | | |
| It is likely that the OFD service may not present the food accurately on the application | | | | | | | | 0,756 | | |
| OFD service providers are trustworthy | | | | | | | | | 0,730 | |
| OFD service providers are capable and proficient | | | | | | | | | 0,779 | |
| OFD service providers care about their customers | | | | | | | | | 0,766 | |
| OFD service providers keep their commitments | | | | | | | | | 0,789 | |
| I think it is fun to try out foods I am not familiar with | | | | | | | | | | 0,859 |
| I like to try food from different restaurants | | | | | | | | | | 0,812 |
| I am constantly sampling new and different foods | | | | | | | | | | 0,857 |
| | | | | | | | | | | |
| Reliability α | **0.820** | **0.850** | **0.779** | **0.771** | **0.900** | **0.901** | **0.845** | **0.852** | **0.848** | **0.820** |

## 4.8 Reliability

Cronbach's alpha values were used to obtain the scale reliability of the retained items. Results are summarised in Table 20.

### 4.8.1 Reliability Statistics

The standardised Cronbach's alpha values for the proposed constructs were calculated and, in all cases, exceeded 0.70 for the constructs. Thus, the scale measures are considered to demonstrate sufficient internal consistency reliability.

Composite scores were then calculated for the multi-item scales and an average was produced for each construct as the arithmetic average of the relevant items weighted equally. Results are shown together with standard deviations and relevant distribution measures in Table 20. Except for performance and effort expectancy constructs that were positively skewed, the results show distributions of most constructs are not overly skewed. Hypothesis testing could then proceed.

**Table 20: Reliability Results and Descriptive Statistics**

| Variable | Numbers of original items | Number of items following PCA | Cronbach's alpha | Mean of the Composite | Std Dev of the composite | Skewness of the composite | Kurtosis of the composite |
|---|---|---|---|---|---|---|---|
| Performance Expectancy | 10 | 2 | 0.820 | 5,8750 | 0,98859 | -1,529 | 3,717 |
| Effort Expectancy | 3 | 3 | 0.850 | 6,0926 | 0,82786 | -1,847 | 5,981 |
| Social Influence | 3 | 3 | 0.779 | 5,0037 | 1,13736 | -0,400 | 0,036 |
| Facilitating Conditions | 3 | 3 | 0.771 | 6,5741 | 0,58009 | -1,212 | 0,915 |
| Hedonic Motivation | 3 | 3 | 0.900 | 4,6222 | 1,17780 | -0,513 | 0,370 |
| Price Value | 3 | 3 | 0.901 | 4,2648 | 1,31868 | -0,313 | -0,633 |
| Behavioural Intention | 5 | 3 | 0.845 | 5,4944 | 1,08398 | -0,861 | 0,737 |
| Perceived Risk | 6 | 5 | 0.852 | 4,1767 | 1,27866 | -0,085 | -0,522 |
| Perceived Trust | 4 | 4 | 0.848 | 5,0292 | 0,89039 | -0,681 | 1,373 |
| Variety Seeking | 3 | 3 | 0.820 | 5,2667 | 1,16881 | -0,855 | 0,285 |
| Habit | 3 | Dropped | Dropped | Dropped | Dropped | Dropped | Dropped |

### 4.8.2 Hypothesis Testing and Analysis of the Research Model

The strength of the relationships between the constructs; that is, dependent, independent and moderator variables, which make up the study's proposed conceptual model was tested using correlation and regression analysis. To test the strength of the relationships between the study's variables bivariate correlation analysis was initially used. For the bivariate correlation coefficient analysis, Pearson's (parametric test) or Spearman's (non-parametric test) can be

used. Pearson correlation was used for this study as the data collected for this study was mainly interval (Likert-type scales) and approximately normally distributed. Any relationships that were shown to be statistically significant were said to support relevant hypotheses. To test moderation, sub-group analysis of correlation coefficients was carried out. Thereafter, multiple regression analysis was used. Each of these three analysis steps is presented next.

#### *4.8.2.1 Correlation Analysis on Composite Scores in Relation to Behavioural Intention*

Table 21 presents bivariate correlations between behavioural intention and the nine independent variables of the research model.

Pearson correlation shows the strength (magnitude) and direction of the bivariate correlation between one variable to another. The closer the value to -1 or 1, the stronger the association. Behavioural intention is determined as the key dependant variable driving consumer adoption of OFD. Results showed that Performance Expectancy (0.638**) has the most significant correlation to Behavioural intention. All variables have significant positive correlations with intention, except risk which has a negative correlation, as expected. Thus the study's hypotheses (H1 to H4, H6, H7, H11) have received initial support

**Table 21: Correlation Analysis on Composite Scores in Relation to Behavioural Intention**

| Pearson Correlation | Composite Behavioural Intention |
|---|---|
| Composite Performance Expectancy | .638** (p<0.001) |
| Composite Effort Expectancy | .457** (p<0.001) |
| Composite Social Influence | .507** (p<0.001) |
| Composite Facilitating Conditions | .160* (p<0.05) |
| Composite Hedonic Motivation | .438** (p<0.001) |
| Composite Price Value | .350** (p<0.001) |
| Composite Trust | .420** (p<0.001) |
| Composite Risk | -.293** (p<0.001) |
| Composite Variety Seeking | 0,129 (Not Significant) |
| **. Correlation is significant at the 0.01 level (2-tailed). | |
| *. Correlation is significant at the 0.05 level (2-tailed). | |

### 4.8.3 Correlation Analysis on Composite Scores in Relation to Actual Use

Table 22 presents bivariate correlations between actual and the two independent variables of the research model.

Actual Use is determined as the key dependant variable driving consumer adoption of OFD. Results showed that Behavioural Intention (0.335**) has the most significant correlation to actual use. The facilitating conditions variable also has significant positive correlations with actual use.

The next step was to test the moderator effects through sub-group analysis.

**Table 22: Correlation Analysis on Composite Scores in Relation to Actual Use**

| Pearson Correlation | Actual Use |
|---|---|
| Composite Behavioural Intention | .335** (p<0.001) |
| Composite Facilitating Conditions | .112 (p<0.05) |
| **. Correlation is significant at the 0.01 level (2-tailed). | |
| *. Correlation is significant at the 0.05 level (2-tailed). | |

A full correlation matrix appears in Appendix E.

### 4.8.4 Sub-group Analysis for Tests of Moderators

The research model presented in Figure 21 identified, gender, age and experience as possible moderating factors. As all respondents utilised OFD services in the past, experience was not considered a relevant moderator. Other possible moderating factors were included to determine if they were significant; these were, Variety Seeking and Household Size.

In order to determine if the moderating factors were significant, the z-score method was undertaken to determine whether the difference between correlation coefficients of sub-groups was statistically significant. A cut-off of 1.96 was utilised as the approximate value of the 95% percentage point of the standard normal distribution. Z-scores range from -1.96 up to +1.96 were considered non-

significant. Sub-group analysis is a viable method to test for moderators (Sharma, Durand, & Gur-Arie, 1981).

#### *4.8.4.1 Age as a Control: Z-Score test between Dependent Variables and Age*

The results (Table 24) show that age was not a significant moderating factor, except for facilitating conditions (z = -2.24). Here, the correlation for respondents above 35 was 0.281, which was statistically significantly higher than for individuals less than 35. We can thus conclude that older users might be less technology savvy and would require more knowledge, assistance, and support to make use of OFD service. For the other factors age did not have a significant moderating effect on the relationships between other independent variables and behavioural intention.

**Table 23: Age as a Control: Z-Score test between Dependent Variables and Age**

| Correlations with Behavioural Intention | | | | | |
|---|---|---|---|---|---|
| **Factor** | **Full Sample** | **Age** | | | |
| | | <35 | >35 | z-score | two-tailed |
| | n=180 | n=65 | n=114 | | |
| Performance Expectancy | 0.638** | 0,605 | 0,669 | -0,68 | 0,4965 |
| Effort Expectancy | 0.457** | 0,530 | 0,427 | 0,84 | 0,4009 |
| Social Influence | 0.507** | 0,416 | 0,551 | -1,12 | 0,2627 |
| Facilitating Conditions | 0.160* | -0,067 | 0,281 | -2,24 | 0,0251 |
| Hedonic Motivation | 0.438** | 0,412 | 0,450 | -0,29 | 0,7718 |
| Price Value | 0.350** | 0,367 | 0,331 | 0,26 | 0,7949 |
| Perceived Risk | -0.293** | -0,430 | -0,199 | -1,63 | 0,1031 |
| Perceived Trust | 0.420** | 0,502 | 0,384 | 0,93 | 0,3524 |

#### *4.8.4.2 Gender as a Control: Z-Score test between Dependent Variables and Gender*

The results (Table 24) show that gender correlation was not significant, except for hedonic motivation (z = -1.97). Here, the correlation for female respondents was 0.579, which was statistically significantly higher than for males. We can thus conclude females are more motivated to use OFD services for the experience of

fun, pleasure, and enjoyment. Among females it had the strongest correlation with intention behind performance expectancy, while for males hedonic motivation was only the 6th strongest correlation and thus among the less important factors. For the other factors however, gender did not have a significant moderating effect on their relationships with behavioural intention.

**Table 24: Gender as a Control: Z-Score test between Dependent Variables and Gender**

| Correlations with Behavioural Intention | | | | | |
|---|---|---|---|---|---|
| **Factor** | **Full Sample** | **Gender** | | | |
| | | Males | Females | z-score | two tailed |
| | n=180 | n=102 | n=76 | | |
| Performance Expectancy | 0.638** | 0,6190 | 0,6290 | -0,1100 | 0,9124 |
| Effort Expectancy | 0.457** | 0,4570 | 0,4400 | -0,1400 | 0,8870 |
| Social Influence | 0.507** | 0,4820 | 0,5320 | -0,4200 | 0,6745 |
| Facilitating Conditions | 0.160* | 0,1460 | 0,0950 | 0,3400 | 0,7339 |
| Hedonic Motivation | 0.438** | 0,3420 | 0,5790 | -1,9700 | 0,0488 |
| Price Value | 0.350** | 0,3480 | 0,3420 | 0,0400 | 0,9681 |
| Perceived Risk | -0.293** | -0,2410 | -0,3610 | 0,8600 | 0,3898 |
| Perceived Trust | 0.420** | 0,4350 | 0,3770 | 0,4500 | 0,6527 |

#### *4.8.4.3 Variety Seeking as a Control: Z-Score test between Dependent Variables and Variety Seeking*

The results (Table 25) show that variety seeking was not a significant moderating factor, except for perceived risk (z = 2.34). Here, the correlation for high variety seeking individuals was -0.398, which was statistically significantly stronger than for low variety seeking individuals. We can thus conclude that usage behaviour of users who are high in variety seeking is impacted more by perceived risk. This is possibly due to high variety seeking individuals wanting to try out many more different options from different restaurants on one or more platforms, which increases their exposure to performance and delivery risks, among others, as they engage more often with new orders and new restaurants. Variety seeking did not have a significant moderating effect on the relationships between other independent variables and behavioural intention.

**Table 25: Variety Seeking as a Control: Z-Score test between Dependent Variables and Variety Seeking**

| Correlations with Behavioural Intention | | | | | |
|---|---|---|---|---|---|
| **Factor** | **Full Sample** | **Variety Seeking** | | | |
| | | Low | High | z-score | two tailed |
| | n=180 | n=65 | n=115 | | |
| Performance Expectancy | 0.638** | 0,637 | 0,634 | 0,03 | 0.9761 |
| Effort Expectancy | 0.457** | 0,392 | 0,490 | -0,77 | 0,4413 |
| Social Influence | 0.507** | 0,524 | 0,502 | 0,19 | 0,8493 |
| Facilitating Conditions | 0.160* | 0,171 | 0,148 | 0,15 | 0.8808 |
| Hedonic Motivation | 0.438** | 0,333 | 0,481 | -1,13 | 0,2585 |
| Price Value | 0.350** | 0,207 | 0,406 | -1,39 | 0,1645 |
| Perceived Risk | -0.293** | -0,051 | -0,398 | 2,34 | 0,0193 |
| Perceived Trust | 0.420** | 0,297 | 0,476 | -1,34 | 0,1802 |

#### *4.8.4.4 Household Size as a Control: Z-Score test between Dependent Variables and Household Size*

The results (Table 26) show that household size has no statistically significant moderating effect on the relationship between the model's independent variables and behavioural intention of using OFD service, when comparing smaller households of 1 or 2 people against larger households of 3 or more.

Thus, taken together age moderates the relationship of behavioural intention with facilitating conditions, gender moderates the relationship of behavioural intention with hedonic motivation and variety seeking moderates the relationship between behavioural intention and risk.

**Table 26: Household Size as a Control: Z-Score test between Dependent Variables and Household Size**

| Correlations with Behavioural Intention | | | | | |
|---|---|---|---|---|---|
| **Factor** | **Full Sample** | **Household Size** | | | |
| | | 1 to 2 persons | 3, 4 and more | z-score | two tailed |
| | n=180 | n=69 | n=111 | | |
| Performance Expectancy | 0.638** | 0,5730 | 0,6820 | -1,1600 | 0,2460 |
| Effort Expectancy | 0.457** | 0,5370 | 0,4100 | 1,0500 | 0,2937 |
| Social Influence | 0.507** | 0,5560 | 0,4760 | 0,7000 | 0,4839 |
| Facilitating Conditions | 0.160* | 0,1290 | 0,1780 | -0,3200 | 0,7490 |

| | | | | | |
|---|---|---|---|---|---|
| Hedonic Motivation | 0.438** | 0,5560 | 0,3710 | 1,5200 | 0,1285 |
| Price Value | 0.350** | 0,4450 | 0,2870 | 1,1700 | 0,2420 |
| Perceived Risk | -0.293** | -0,3300 | -0,2700 | -0,4200 | 0,6745 |
| Perceived Trust | 0.420** | 0,3840 | 0,4420 | -0,4500 | 0,6527 |

#### *4.8.4.5 Age as a Control: Z-Score test between Dependent Variables and Age*

The results (Table 27) show that age has no statistically significant moderating effect on the relationship between the model's independent variables and actual use OFD service, when comparing younger (less than 35) against older (more than 35) respondents.

**Table 27: Age as a Control: Z-Score test between Dependent Variables and Age**

| Correlations with Actual Use | | | | | |
|---|---|---|---|---|---|
| **Factor** | **Full Sample** | **Age** | | | |
| | | <35 | >35 | z-score | two-tailed |
| | n=180 | n=65 | n=114 | | |
| Facilitating Conditions | 0.112 | 0,1640 | 0,1040 | 0,3900 | 0,6965 |
| Behavioural Intention | 0.335** | 0,5140 | 0,3580 | 1,2200 | 0,2225 |

#### *4.8.4.6 Gender as a Control: Z-Score test between Dependent Variables and Gender*

The results (Table 28) show that gender has no statistically significant moderating effect on the relationship between the model's independent variables and actual use OFD service, when comparing males against females.

**Table 28: Gender as a Control: Z-Score test between Dependent Variables and Gender**

| Correlations with Actual Use | | | | | |
|---|---|---|---|---|---|
| **Factor** | **Full Sample** | **Gender** | | | |
| | | Males | Females | z-score | two tailed |
| | n=180 | n=102 | n=76 | | |
| Facilitating Conditions | 0.112 | 0,1030 | 0,1260 | -0,1500 | 0,8808 |
| Behavioural Intention | 0.335** | 0,4140 | 0,4070 | 0,0500 | 0,9601 |

#### *4.8.4.7 Variety Seeking as a Control: Z-Score test between Dependent Variables and Variety Seeking*

The results (Table 29) show that variety seeking has no statistically significant moderating effect on the relationship between the model's independent variables and actual use OFD service, when comparing low variety seekers against high variety seekers.

**Table 29: Variety Seeking as a Control: Z-Score test between Dependent Variables and Variety Seeking**

| Correlations with Actual Use | | | | | |
|---|---|---|---|---|---|
| **Factor** | **Full Sample** | **Variety Seeking** | | | |
| | | Low | High | z-score | two tailed |
| | n=180 | n=65 | n=115 | | |
| Facilitating Conditions | 0.112 | -0,0180 | 0,1990 | -1,3900 | 0,1645 |
| Behavioural Intention | 0.335** | 0,2890 | 0,4720 | -1,3600 | 0,1738 |

#### *4.8.4.8 Household Size as a Control: Z-Score test between Dependent Variables and Household Size*

The results (Table 30) show that household size has no statistically significant moderating effect on the relationship between the model's independent variables and actual use OFD service, when comparing 1 or 2 persons against larger households of 3 or more. A limitation of the above bivariate correlation analyses is that correlations do not reflect the unique and combined effects of the set of independent variables on the dependent variable of interest. The combined effect can be better assessed through multiple regression, which is presented next.

**Table 30: Household Size as a Control: Z-Score test between Dependent Variables and Household Size**

| Correlations with Actual Use | | | | | |
|---|---|---|---|---|---|
| **Factor** | **Full Sample** | **Household Size** | | | |
| | | 1 to 2 person | 3, 4 and more | z-score | two tailed |
| | n=180 | n=69 | n=111 | | |
| Facilitating Conditions | 0.112 | 0,1960 | 0,0740 | 0,8000 | 0,4237 |
| Behavioural Intention | 0.335** | 0,4950 | 0,3600 | 1,0600 | 0.2891 |

### 4.8.5 Multiple Regression Analysis

Four multiple regression analyses were performed. First, a multiple regression was used to test the original UTAUT2 model, i.e., without the extensions of trust and risk. Second, the factors of trust and risk were examined. Third, the extended UTAUT2 model combined with trust and risk was examined against Behavioural Intention (as the dependent variable). Lastly, the factors of facilitating conditions and behavioural intention were examined against Actual Use (as a dependent variable).

The results for the test of the original UTAUT2 model is presented below.

#### *4.8.5.1 H1 – H4, H6, H7: Test of UTAUT2 to Behavioural Intention*

The results show that Performance Expectancy, Effort Expectancy and Social Influence are significant in predicting behavioural intention to use OFD services. The R Square value of 0.560 suggests that the variables, performance expectancy, effort expectancy and social influence explain 56% of the variance in actual use of OFD service. The ANOVA model suggests that statistical significance can be inferred since the significance level is less than 0.001. Results produced in the coefficients table indicate the p-values for performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, and price value. Thus, statistical significance can be drawn.

H1: Performance Expectancy is supported as its beta-coefficient was positive and statistically significant, $\beta = 0.451$ $p < 0.001$.

H2: Effort Expectancy is supported as its beta-coefficient was statistically significant, $\beta = 0.212$ $p < 0.001$

H3: Social Influence is supported as its beta-coefficient was statistically significant, $\beta = 0.206$ $p < 0.001$

H4: Facilitating Conditions is rejected as its beta-coefficient was not statistically significant, $\beta = -0.042$ $p > 0.05$

H5: Hedonic Motivation is rejected as the p-value for its beta-coefficient fell just outside the significant level, $\beta = 0.116$ $p < 0.10$

H6: Price Value is rejected as its beta-coefficient was not statistically significant, $\beta = 0.073$. $p > 0.05$

**Table 31: Multiple Regression Analysis of UTAUT2 – Model Summary**

| Model Summary | | | | |
|---|---|---|---|---|
| **Model** | **R** | **R Square** | **Adjusted R Square** | **Std. Error of the Estimate** |
| 1 | .748[a] | 0,560 | 0,544 | 0,73179 |
| a. Predictors: (Constant), Composite_Price_Value, Composite_Facilitating_Conditions, Composite_Performance_Expectancy, Composite_Social_Influence, Composite_Hedonic_Motivation, Composite_Effort_Expectancy | | | | |

**Table 32: Multiple Regression Analysis of UTAUT2 – ANOVA Results**

| ANOVA[a] | | | | | | |
|---|---|---|---|---|---|---|
| **Model** | | **Sum of Squares** | **df** | **Mean Square** | **F** | **Sig.** |
| 1 | Regression | 117,683 | 6 | 19,614 | 36,626 | .000[b] |
| | Residual | 92,645 | 173 | 0,536 | | |
| | Total | 210,328 | 179 | | | |
| a. Dependent Variable: Composite_Behavioural_Intention | | | | | | |
| b. Predictors: (Constant), Composite_Price_Value, Composite_Facilitating_Conditions, Composite_Performance_Expectancy, Composite_Social_Influence, Composite_Hedonic_Motivation, Composite_Effort_Expectancy | | | | | | |

**Table 33: Multiple Regression Analysis of UTAUT2 – Coefficients**

| Coefficients[a] | | | | | | |
|---|---|---|---|---|---|---|
| **Model** | | **Unstandardised Coefficients** | | **Standardised Coefficients** | **t** | **Sig.** |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | -0,326 | 0,680 | | -0,479 | 0,632 |
| | Composite_Performance_Expectancy | 0,495 | 0,062 | 0,451 | 8,042 | 0,000 |
| | Composite_Effort_Expectancy | 0,277 | 0,082 | 0,212 | 3,378 | 0,001 |
| | Composite_Social_Influence | 0,197 | 0,057 | 0,206 | 3,451 | 0,001 |
| | Composite_Facilitating_Conditions | -0,078 | 0,107 | -0,042 | -0,729 | 0,467 |
| | Composite_Hedonic_Motivation | 0,107 | 0,054 | 0,116 | 1,961 | 0,051 |
| | Composite_Price_Value | 0,060 | 0,047 | 0,073 | 1,292 | 0,198 |
| a. Dependent Variable: Composite_Behavioural_Intention | | | | | | |

The model for trust and risk is examined next.

### *4.8.5.2 H10 – H11: Test of Trust and Risk to Behavioural Intention*

The results show that both Trust and Risk are significant in predicting behavioural intention to use OFD services. The R Square value of 0.194 suggests that the two variables explain 19.4% of the variance in intention to use OFD services in the future. The ANOVA model suggests that statistical significance can be inferred since the significance level is less than 0.001. Results produced in the coefficients table indicate that the p-values are less than a minimum bar of proof of 0.05. Thus, statistical significance can be drawn.

H7: Risk is supported as its beta-coefficient was statistically significant, $\beta = -0.146$ $p < 0.05$

H8: Trust is supported as its beta-coefficient was statistically significant, $\beta = 0.360$ $p < 0.001$

The combined model is tested next, including the significant UTAUT2 factors along with Trust and Risk. Hedonic motivation and other non-significant factors were not included as only the UTAUT2 factors with a significance level of at least $p < 0.05$ were included along with Trust and Risk.

**Table 34: Multiple Regression Analysis of Trust and Risk – Model Summary**

| Model Summary | | | | |
|---|---|---|---|---|
| **Model** | **R** | **R Square** | **Adjusted R Square** | **Std. Error of the Estimate** |
| 1 | .440[a] | 0,194 | 0,185 | 0,97869 |
| a. Predictors: (Constant), Composite_Trust, Composite_Risk | | | | |

**Table 35: Multiple Regression Analysis of Trust and Risk – ANOVA Results**

| ANOVA[a] | | | | | | |
|---|---|---|---|---|---|---|
| **Model** | | **Sum of Squares** | **df** | **Mean Square** | **F** | **Sig.** |
| 1 | Regression | 117,407 | 5 | 23,481 | 43,971 | .000[b] |
| | Residual | 92,920 | 174 | 0,534 | | |
| | Total | 210,328 | 179 | | | |
| a. Dependent Variable: Composite_Behavioural_Intention | | | | | | |
| b. Predictors: (Constant), Composite_Trust, Composite_Effort_Expectancy, Composite_Performance_Expectancy, Composite_Risk, Composite_Social_Influence | | | | | | |

**Table 36: Multiple Regression Analysis of Trust and Risk – Coefficients**

| Coefficients[a] | | | | | | |
|---|---|---|---|---|---|---|
| | | Unstandardised Coefficients | | Standardised Coefficients | | |
| Model | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | 3,810 | 0,612 | | 6,222 | 0,000 |
| | Composite_Risk | -0,124 | 0,063 | -0,146 | -1,982 | 0,049 |
| | Composite_Trust | 0,438 | 0,090 | 0,360 | 4,870 | 0,000 |
| a. Dependent Variable: Composite_Behavioural_Intention | | | | | | |

### *4.8.5.3 Test of Combined Model to Behavioural Intention*

The results show that Performance Expectancy, Effort Expectancy, Social Influence and Trust are significant in predicting behavioural intention to use OFD services. The R Square value of 0.558 suggests that the variables intention to use, performance expectancy, effort expectancy and social influence explain 55.8% of the variance in actual use of OFD service. The ANOVA model suggests that statistical significance can be inferred since the significance level is less than 0.001.

**Table 37: Multiple Regression Analysis of Combined Model – Model Summary**

| Model Summary | | | | |
|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .747[a] | 0,558 | 0,546 | 0,73077 |
| a. Predictors: (Constant), Composite_Trust, Composite_Effort_Expectancy, Composite_Performance_Expectancy, Composite_Risk, Composite_Social_Influence | | | | |

**Table 38: Multiple Regression Analysis of Combined Model – ANOVA Results**

| ANOVA[a] | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 117,407 | 5 | 23,481 | 43,971 | .000[b] |
| | Residual | 92,920 | 174 | 0,534 | | |
| | Total | 210,328 | 179 | | | |
| a. Dependent Variable: Composite_Behavioural_Intention | | | | | | |
| b. Predictors: (Constant), Composite_Trust, Composite_Effort_Expectancy, Composite_Performance_Expectancy, Composite_Risk, Composite_Social_Influence | | | | | | |

**Table 39: Multiple Regression Analysis of Combined – Coefficients**

| Coefficients[a] | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Unstandardised Coefficients | | Standardised Coefficients | t | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | -0,744 | 0,619 | | -1,202 | 0,231 |
| | Composite_Performance_Expectancy | 0,487 | 0,062 | 0,444 | 7,828 | 0,000 |
| | Composite_Effort_Expectancy | 0,263 | 0,073 | 0,201 | 3,616 | 0,000 |
| | Composite_Social_Influence | 0,217 | 0,055 | 0,228 | 3,964 | 0,000 |
| | Composite_Risk | -0,032 | 0,047 | -0,038 | -0,672 | 0,503 |
| | Composite_Trust | 0,163 | 0,071 | 0,134 | 2,287 | 0,023 |
| a. Dependent Variable: Composite_Behavioural_Intention | | | | | | |

The model for facilitating conditions and behavioural intention is against Actual Use is examined next.

#### *4.8.5.4 H5 and H12: Test of Facilitating Conditions and Behavioural Intention on Actual Use*

As mentioned in section 4.7 Validity; Habit and Behavioural Intention was statistically strongly correlated to each other; that it was decided to drop Habit. Therefore, only two variables were testing for Actual Use; these were facilitation conditions and behavioural intention.

Results show that facilitation conditions are not significant in predicting the actual use of OFD service and behavioural intention is significant in predicting actual use of OFD services. The R Square value of 0.418 suggests that the two variables explain 41.8% of the variance of actual use of OFD services. The ANOVA model suggested that statistical significance can be inferred since the significance level is less than 0.001. Thus, statistical significance can be drawn.

H5: Facilitating Conditions is rejected as its beta-coefficient was not statistically significant, $\beta = 0.056$ $p > 0.05$

H12: Behavioural Intention is supported as its beta-coefficient was statistically significant, $\beta = 0.405$ $p < 0.001$

**Table 40: Multiple Regression Analysis of Actual Use – Model Summary**

| Model Summary | | | | |
|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .418[a] | 0,175 | 0,165 | 1,13563 |
| a. Predictors: (Constant), Composite_Behavioural_Intention, Composite_Facilitating_Conditions | | | | |

**Table 41: Multiple Regression Analysis of Actual Use – ANOVA Results**

| ANOVA[a] | | | | | | |
|---|---|---|---|---|---|---|
| **Model** | | **Sum of Squares** | **df** | **Mean Square** | **F** | **Sig.** |
| 1 | Regression | 48,282 | 2 | 24,141 | 18,719 | .000[b] |
| | Residual | 228,268 | 177 | 1,290 | | |
| | Total | 276,550 | 179 | | | |
| a. Dependent Variable: Over the past month, how many times have you used an OFD service (e.g., UberEats or Mr D Food) to complete an online order? | | | | | | |
| b. Predictors: (Constant), Composite_Behavioural_Intention, Composite_Facilitating_Conditions | | | | | | |

**Table 42: Multiple Regression Analysis of Actual Use – Coefficients**

| Coefficients[a] | | | | | | |
|---|---|---|---|---|---|---|
| **Model** | | **Unstandardised Coefficients** | | **Standardised Coefficients** | | |
| | | B | Std. Error | Beta | **t** | **Sig.** |
| 1 | (Constant) | -1,626 | 1,005 | | -1,617 | 0,108 |
| | Composite_Facilitating_Conditions | 0,120 | 0,148 | 0,056 | 0,811 | 0,419 |
| | Composite_Behavioural_Intention | 0,465 | 0,079 | 0,405 | 5,857 | 0,000 |
| a. Dependent Variable: Over the past month, how many times have you used an OFD service (e.g., UberEats or Mr D Food) to complete an online order? | | | | | | |

### 4.8.6 Summary of Revised Conceptual Model

Note that figures in the arrows are regression coefficients showing the strength and direction of relationships between the constructs, with non-significant paths in the models omitted.

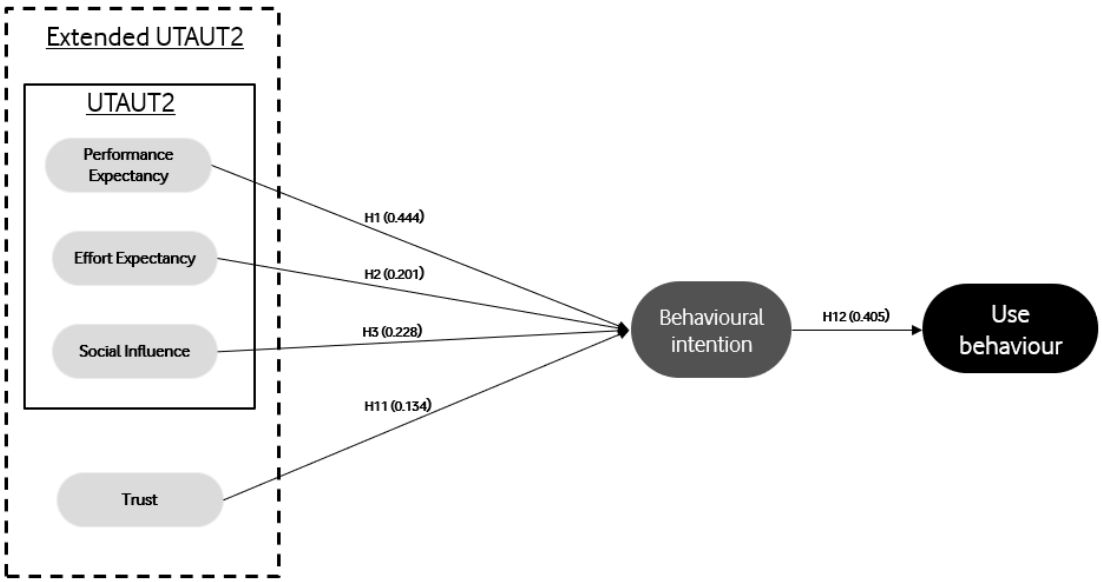



**Figure 25: Revised Model for factors influencing behavioural intention of OFD Services.**

## 4.9 Conclusion

This chapter has presented the results of the data analysis for this study. The data analysis started with a demographic analysis that confirmed the sample was reasonably representative of OFD users.

Analysis of the study's constructs was performed through principal components analysis, whereby the discriminant and convergent validity of constructs confirmed, as well as the reliability of the construct measures, except for Habit (H8 and H9) which was dropped. Correlation and regression analysis were performed to confirm the strength and direction of the relationships between the proposed construct variables. Five out of twelve of the hypotheses (H1, H2, H3, H11 and H12) were fully supported across all tests, while H4, H5, H6, H7 and H10 received only some support or were rejected. A summary of the results of the tests is presented in table 44 below highlighting the support for each variable.

**Table 43: Summary of the Results of the Hypothesis Tests**

| Framework | | | | Influence on | Results from correlation | Results from regression | Conclusion |
|---|---|---|---|---|---|---|---|
| Extended UTAUT2 | UTAUT2 | UTAUT | Performance Expectancy | Behavioural Intention | Significant | Significant | **H1: Supported** |
| | | | Effort Expectancy | Behavioural Intention | Significant | Significant | **H2: Supported** |
| | | | Social Influence | Behavioural Intention | Significant | Significant | **H3: Supported** |
| | | | Facilitating Conditions | Behavioural Intention | Significant | Not Significant | H4: Rejected, but strongest with older users |
| | | | Facilitating Conditions | Actual Use | Significant | Not Significant | H5: Rejected |
| | | | Hedonic Motivation | Behavioural Intention | Significant | Not Significant | H6: Rejected, but strongest with female users |
| | | | Price Value | Behavioural Intention | Significant | Not Significant | H7: Rejected |
| | | | Habit | Behavioural Intention | Dropped | Dropped | H8: Dropped |
| | | | Habit | Actual Use | Dropped | Dropped | H9: Dropped |
| | | | Perceived Risk | Behavioural Intention | Significant | Not Significant | H10: Rejected, but strongest for high variety seeking users |
| | | | Perceived Trust | Behavioural Intention | Significant | Significant | **H11: Supported** |
| | | | Behavioural Intention | Actual Use | Significant | Significant | **H12: Supported** |

The next chapter discusses the study results in the context of the literature.

# 5 DISCUSSION OF THE RESULTS OR FINDINGS

## 5.1 Introduction

This objective of this chapter is to discuss and interpret the findings was presented in the previous chapter. This ties into the main objective of the study which is to identify the factors that influence South African consumer adoption of OFD. These factors related to the UTAUT2 factors in addition to risk and trust.

## 5.2 Discussion pertaining to Perfomance Expectancy (Hypothesis 1)

**H1**: Perfomance expectancy will positively impact behavioural intention of consumers to use OFD services.

The above hypothesis was found to be strongly supported by correlation and regression results with statistically significant effects. The relationship was also found not to be moderated.

Within the UTAUT2 framework, performance expectancy is a key determinant to explain behavioural intention which is corroborated by multiple authors Venkatesh (2003), Moran (2006) and Cheng & Lam (2006) who advise that performance expectancy is a key factor in driving consumers to utilise technology and has a positive correlation to usefulness and behavioural intention. According to Venkatesh et al. (2012) performance expectancy is one of the UTAUT2 factors influencing behavioural intention to adopt and use new technologies. This is because consumers will have a positive perception of a new system if they see its value.

In this study, the respondents reported agreement most strongly with performance expectancy items relating allowing users to track their order, convenience and saving time and following PCA analysis, performance expectancy was constructed as a composite of saving time and convenience.

In a fast-paced world, active lifestyles do not allow for the time available to past generations to fulfil consumption needs. Convenience is thus seen as a key driver affecting the behaviour of today's consumers. A recent report, conducted by Smart Insights (2020), found that 97% of consumers abandon a purchase if they deem the service inconvenient, which could be due to a lack of payment or delivery options. The report also highlights that 83% of online consumers advise that convenience is more important now than it was 5 years ago. Furthermore, in a survey conducted by Information Resources Incorporated (2019) it was found that consumers prioritise saving time and effort by shifting their shopping habits to channels that best support them. This is further supported by the fact that consumers can purchase just about anything from their smartphones from anywhere and at any time. In the OFD context, not only do these consumers have the luxury of convenience, but they have a flurry of options in cuisine types and restaurant options, they can order whenever they want, receive additional discounts, select a delivery time or pick-up time and they have multiple payment options via credit card, debit cards, cash, affiliates, and rewards.

This study has confirmed UTUAT theory in the context of OFD and shows performance expectancy as an important factor influencing behavioural intentions and thus the utilitarian motivations driving OFD users.

## 5.3 Discussion pertaining to Effort expectancy (Hypothesis 2)

**H2**: Effort expectancy will positively impact behavioural intention of consumers to use OFD services.

The above hypothesis was found to be supported with the relationship between effort expectancy and intention supported across the analyses, including in the final regression analysis.

Effort expectancy is considered a prominent factor that influences the behavioural intention within the UTAUT2 framework. Cheng & Lam (2006) posits that user adoption of new technology will only succeed if it were user-friendly or is easy to learn. Tsao, Shieh, & Jan (2009) asserts that when consumers compared new

technology that was easy to use without any user training with existing technology, their intention to use the new technology was increased.

It is essential that any new technological advancement must be easier to use than the traditional method. In some instances, technology is built for technological minded consumers and this poses a risk to the non-technological consumer. For this reason, it is of vital importance that OFD service applications ensure the online retail experience is easy and intuitive. While navigating the OFD application items such as search by name, category, cuisine type, specials, and favourites to name a few should be easy to access, and the interface should be light and simple. The ability to amend and adjust orders and update payment channels should work seamlessly. These are considerations that would drive ease of use. A great example of an innovation around effort expectancy is 1-Click ordering introduced and patented by Amazon which created a 'game changer' in e-Commerce (Wharton, 2017). 1-Click ordering takes away the purchase complexity by storing the key customer data inclusive of default payment and delivery selection and ensures a seamless online shopping experience. Not only does this create a seamless online purchase experience, but it reduces a major challenge of cart abandonment and as many users purchase on mobile screen, this lowers the purchase propensity of consumers completing a purchase.

## 5.4 Discussion pertaining to Social Influence (Hypothesis 3)

**H3**: Social Influence will positively impact behavioural intention of consumers to use OFD services.

The above hypothesis was found to be supported with the relationship between social influence and intention supported across the analyses, including in the final regression analysis.

Social influence relates to an individual's perception about how they are encouraged by people around them to adopt and or use a new service and in today's world, most of the new services are technological in nature. Venkatesh (2003) defines social influence as the degree to which family, friend and peers believed (positively or negatively) will affect the use of a new system. Moor &

Benbasat (1991) asserts that when individuals believe a new system would help them increase their status in a group, they are more likely to adopt such a technology.

Food is generally associated in a social context, especially with family and friends. It is not surprising that social influence will have a high impact on behavioural intention of OFD services. It was further discovered in the study that 4 person households accounted for 41% of the sample and this implies that the social influence around the behavioural intention is driven family or friends in this context. Eating together and sharing meals is a traditional pastime that allows people to get to know one another and strengthen their relationships.

There has also been upsurge of OFD users within offices with the observation made by Li, Mirosa, & Bremer (2020) that work is becoming fast paced and not enough time for colleagues to go out for lunch. OFD offers a solution and Look (2020) highlights that food ordered with co-workers promotes better communication by sharing mealtimes and discussing which restaurants to order from. In Italy, it was observed by Just Eat that there was an increase of 137% in orders for delivered lunches in 15 Italian cities in 2017 (Newsroom, 2018).

## 5.5 Discussion pertaining to Facilitating Conditions (Hypothesis 4 and 5)

**H4**: Facilitating Conditions will positively impact behavioural intention of consumers to use OFD services.

**H5**: Facilitating Conditions will positively impact actual OFD services use behaviour.

Both hypotheses were rejected as the relationships between facilitating conditions and intention and actual use were not consistently supported across the analyses when analysed in combination with the other factors.

Facilitating conditions refers to the environment and or infrastructure which makes its conducive for a service to be rendered or a product sold. Ajzen (1991) asserts that the behavioural intention of a user is enhanced when the user

believes they have the necessary resources to perform the behaviour, and this would include technology resources and knowledge in the context of IT adoption. Venkatesh et al (2012) add that when users feel that facilitating conditions around new technologies are acceptable, they will be more likely to use a new system.

Technological advancement is the key driver for the ability of OFD service provider to operate today. It has allowed markets which has never existed before. The key technology enablers of facilitating conditions for OFD services relates to smartphone adoption, data (predominantly in the form of mobile connectivity) and lastly the installed software application. Other enablers include geo-location services and payment acceptance services. Without these enablers, OFD would not be possible.

The outcome of this study rejected facilitating conditions as overall not significant above the effects of factors such as performance and effort expectancy. The result of this could be because all respondents had smartphones, accessible data and payment methods, and the technology required to utilise the system was easily available to them. Secondly all respondents in the sample have ordered online before and are thus considered quite familiar with the online purchase process. However, when testing age as a moderator, facilitating conditions was deemed significant (z-score =-2.24) for older users. We can thus conclude that older users, who might be less tech savvy, could require more assistance and support when using OFD services. Subsequent research could confirm this notion through analysis of OFD call centre logs to determine if older users are more likely to make use of support. Overall, we can deduce that facilitating conditions were less relevant to consumers' behavioural intention to use OFD services in this sample.

## 5.6 Discussion pertaining to Hedonic Motivation (Hypothesis 6)

**H6**: Hedonic motivation will positively impact behavioural intention of consumers to use OFD services.

The above hypothesis was rejected as the relationship between hedonic motivation and behavioural intention to use OFD services was not consistently supported across the analyses.

Hedonic motivation refers to fun or pleasure derived from using a new system which can play a significant role in influencing behavioural intention (Van der Heijden, 2004; Thong, Hong, & Tam, 2006). Traditionally utilitarian factors have received more attention than hedonic factors but in recent studies both have been deemed significant even if, between the two, utilitarian value has slighty larger effects (Chiu, Fang, & Huang, 2014). Hedonic motivation factors are being seen as more crucial for businesses to consider, specifically e-Commerce retailers. Consumers are stimulated by sharing experiences, keeping up with trends, always looking for discounts and bargains and growing social relationship with all of this culminating in fun, enjoyment and pleasure (Charm, et al., 2020). Hedonic motivation was thus included in UTAUT2 with the rationale that consumers who shop online don't only do so only to purchase products or obtain information, but also satisfy the need of experience and emotion which includes enjoyment, excitement, fun and pleasure (To, Liao, & Lin, 2007). Kim & Eastin (2011) further posits that online shoppers desire enjoyment, entertainment or just passing time while they browse online environments and see it as en escape.

The distinction however between utilitarian and hedonic motivations can be confusing in the mobile context. For example, Yang (2010) highlights that consumers are beginnning to obtain information or solve problems (utilitarian value) using their mobile phones, which are normally associated with social, entertainment, fun and pleasurable activities (hedonic value).

The results of this study show that hedonic motivation was correlated with behavioural intention and was found in the regression as a potentially important

determinant, although not independently significant in the presence of the other factors such as performance expectancy (as a utilitarian motivation). It is plausable that hedonic motivation could be significant given a different sample. For example, it must be noted that when testing for gender as a moderator, hedonic motivation was found significantly more important (z-score = -1.97) for female users. We can deduce that females are more motivated by feelings of fun, pleasure and enjoyment when considering their use of OFD services. Thus the importance of hedonic motivations in the OFD context should not be ruled out, and should be considered significant for specific subsets of consumers.

## 5.7 Discussion pertaining to Price Value (Hypothesis 7)

**H7:** Price value will positively impact behavioural intention of consumers to use OFD services.

The above hypothesis was rejected due a non-significant relationship between price value and behavioural intention.

According to Dodds, Monroe, & Grewal (1991) price value is defined as the perceived benefits of using a service versus the monetary costs incurred. Although OFD applications are generally free for consumers to download, the price value factors to consider for OFD delivery is generally the price of the meal, the delivery charges and service fees added by OFD operators, along with discretionary tips. Meal prices are also generally marked up by the restauranteur to cater for the OFD platform provider's service charge, which ultimately gets passed to the consumer. In some instances, OFD platform providers charge service fees to the consumers (Daily Mail, 2020). Another big price value factor is delivery charges which can be seen as a hindrance to OFD use (Huang & Oppewal, 2006). A recent study conducted by Yeo, Goh, & Rezaei (2017) suggested that monetary savings is a key driver that influences the customers' intention to continually use OFD services.

The results of the study however indicated that price value was not significant in determining behavioural intention, and we can thus deduce that OFD consumers might value other factors such as convenience, time saving and ease of use as

more important. This however does not mean that OFD platform providers can increase costs of services with no substantial additional value delivered. This study did not test the possibility for price value to matter more for subsets of consumers e.g., high versus lower income earners, nor did it test the potential effects on large versus smaller value order sizes. A large portion of the sample studied were high income earners who may be less concerned with price and more willing to pay for the gains experienced in convenience, and a large portion of the sample studied were larger households with presumably larger orders for which OFD might be more cost effective. OFD providers should also thus continuously look for ways to provide value whether in monetary terms (i.e., discounts and rewards) and non-monetary terms (i.e., faster delivery, seamless payment options).

## 5.8 Discussion pertaining to Habit (Hypothesis 8 and 9)

**H8:** Habit will positively impact behavioural intention of consumers to use OFD services.

**H9**. Habit will positively impact actual OFD services use behaviour.

Habit was dropped as it was strongly correlated to Behavioural Intention and did not emerge as a separate factor. It is likely that it could have been interpreted as future usage intention by the respondents. Habit was measured with items like “Using OFD services would be a habit for me”, “Using OFD would be natural to me” and “Using OFD service would be part of my routine.” Future research may wish to measure the items as “The use of OFD services is a habit for me”, Using OFD services has become natural to me” and Using OFD services is part of my routine.” According to UTAUT2, habit influences intention and actual use because habit influenced consumers to perform behaviours automatically because of learning (Venkatesh, 2012). Chang, Liu, Huang, & Hsieh (2019) asserts that habit and behavioural intention have a significant relationship between one another using UTAUT2. Lally, Wardle, & Gardner (2011) suggests that habit leads to the behavioural intention which is automatic when prompted (hunger cues the consumer who then opens the OFD application) and the

subconscious immediately goes into autopilot. Furthermore Wang & Wang (2010) and Webb & Luszcznska (2009) suggests that behavioural intention directly correlates to actual use when the habit component is weak or strong. Users are likely to develop strong persistence behaviours if intentions are strong which ultimately drives actual use (Gardner, Sheals, Wardle, & McGowan, 2014). Given these findings, it is vital that intention forming strategies are introduced into the OFD service application. OFD applications can ensure continued long-lasting success by driving improved actual use through the factors that motivate intentions.

Most of the users studied in this sample have made fairly frequent use of OFD, ordering as much as once per week. This suggests that OFD can indeed be habit forming for households with repeat orders possibly centred around a specific meal, e.g., Saturday night dinner or a Sunday lunch. This study did not delve into specific OFD ordering habits as it was more interested in the theoretical question of whether habit might be useful for predicting future usage in the OFD context. Future research may wish to explore OFD habits in greater detail and to consider why OFD might become habit forming, the types of OFD orders more susceptible to habit formation, and whether there are unintended consequences of OFD habits for consumer lifestyles and health. Thus, OFD may not lead to overall societal welfare, even if it maximises short-term individual utilities such as convenience. Some OFD providers have been known to engage in nudging where users are repeatedly reminded of offers and deals and encouraged to form habits and extend their consumption behaviours.

The consequences of OFD habit for competition in the sector could also be explored. For example, does OFD habit include the repeated use of a single OFD provider only, and if so, what are the implications for new entrants and for intra-industry competition.

## 5.9 Discussion pertaining to Perceived Risk (Hypothesis 10)

**H10:** Perceived risk will negatively impact behavioural intention of consumers to use OFD services.

The above hypothesis was rejected as the relationship between risk perception and behavioural intention to use OFD services was not consistently supported across the analyses.

Perceived risk was added to the UTUAT2 framework and hypothesised to have a negative effect on the behavioural intention of consumers to adopt OFD. It was believed that an increase in perceived risk would correlate to a decline in OFD usage. Garbarino & Strahilevitz (2004) posits that perceived risk is the consumer's subjective belief that something could go wrong when transacting online and would result in a probability of suffering a loss. Given that consumers would seek to minimise the risk of loss, perceived risk would influence their behaviour.

In the OFD context, risks include performance risk which relates to the quality and freshness of the meals delivered, financial risk in which you could be double charged for the same meal and time risk whereby the meal is not delivered within a reasonable time frame. Rao et al., (2007); Lian and Lin, (2008); and Kim et al., (2008) posits that perceived risk is an antecedent of purchase intention which has a negative effect on consumers' willingness to shop online. Furthermore, Chang and Tseng (2013) suggested reducing consumers' perceived risk is a critical factor which will improve consumers, purchase intention.

OFD adoption in South Africa has gained traction predominantly through UberEats and Mr D Food who own 80 - 90% of the current South Africa market (Insight Surveys, 2019). The initial perceived risks of using OFD services has arguably decreased over time. To reduce delivery risk, merchants have taken necessary steps to provide custom menus for delivery which are designed to ensure a level of quality that is acceptable by consumers; as fresh and hot as possible. Additionally, merchants have also introduced packaging that is not only designed for delivery but also eco-friendly (Holmes, 2020; Lloyd-Smith, 2020).

With the growing delivery market increasing, more drivers being added to the delivery networks. Delivery time has thus significantly improved to an average of 34 minutes achieved by Mr D Food (Magoxo, 2019). Thus, risks of failure or delays are being reduced. Consumers who have experienced repeated delivery successes are thus less likely to perceive risks than early-stage adopters without prior experience. Reducing perceptions of delivery risk may thus be more important when onboarding new users to an OFD service.

Financial risks associated to online purchases can also be perceived as a hindrance to OFD adoption. South Africa has fared fairly well in addressing this issue. The South African Reserve Bank appointed the Payment Association of South Africa (PASA) to ensure a safe and efficient national payment systems. 3D Secure was launched which was a method of authentication security that only allowed the cardholder to use the card when shopping online (Godfrey, 2016), and thus reducing fraudulent use of the Internet and safer online shopping. Consumer privacy risk related to personal information being shared has been addressed by the introduction of Protection of Personal Information (POPI) act which ensures that customer data is not shared, and personal information is safeguarded (POPIA, 2019). Taken together, it is thus not surprising that risk was less supported in the OFD context than was initially theorised. The effects of risk may also be reduced through establishing greater trust which is discussed next.

## 5.10 Discussion pertaining to Trust (Hypothesis 11)

**H11:** Consumer's trust will positively impact behavioural intention of consumers to use OFD services.

The above hypothesis was found to be supported with significant effects in both the correlation and regression results.

Similar to perceived risk, trust was added as an extension to the UTAUT2 framework. Trust is considered important in online contexts because of the uncertainties that arise for consumers who are temporally and physically distant from the service provider. De Ruyter, Kleijnen, & Wetsels (2002) advises that lack of trust has been found to be a key contributing factor influences to adoption of

m-Commerce. Consumers in such circumstances need to trust in the integrity, competence and benevolence of the service provider in order to be willing to accept their position of vulnerability in the online transaction. Trust thus acts to reduce the perceived risk and increase consumer's willingness to purchase online (Pavlou, 2003; Mou, Shin, & Cohen, 2017). According to Keen (1999), one of the key reasons consumers are apprehensive of engaging in e-commerce is due to a lack of trust. In this study, trust was operationalised as the consumer's belief in whether they thought OFD service provider were trustworthy, OFD service providers were capable and efficient, OFD service providers cared about their customers' and OFD service providers keep their commitments.

Results supported the effect of trust on behavioural intention. It is evident from the results that consumers need to have a level of trust before they utilise an OFD service. To enhance to trustworthiness their consumers, the OFD service provider must ensure a quality application with an intuitive design, application speed should allow for instant page loading, easy search capability, security and privacy policies with frequently asked questions (FAQ) are visible and the payment system is secure; this will not only enhance the trust but provides the consumer with the peace of mind that the OFD service provider is capable and proficient in delivering the service. Additionally, information quality is vital. For example, menus should be accurate with descriptions and pictures of food items, and merchants must endeavour to deliver the meal that was presented on the OFD application. Customer service and support channels need to be available should there be queries in incorrect meals being delivered, missing items, long delivery times or payment queries. Instant chat, chat bots or WhatsApp business messenger are support mediums which can be made available to consumers should they encounter problems in order to get rapid assistance. Additionally, FAQ's can accompany the above to provide answers to that consumers often ask. These will build trust for the consumers and ensure the OFD service providers deliver on their promise. OFD service providers will enjoy continuous orders from repeat customer if trust is gaining by providing efficient delivery, great food quality and exceptional customer service.

## 5.11 Discussion pertaining to Behavioural Intention and Actual Use (Hypothesis 12)

**H12:** The behavioural intention of consumers to use OFD services will positively impact their actual use behaviour.

The above hypothesis was found to be supported.

Behavioural intention was found to correlate with actual self-reported use behaviour. According to UTAUT2, intention should translate to actual behaviour because intention is a precursor to action. Therefore, it is highly likely that users who form behavioural intentions toward OFD will act on those intentions and engage in actual OFD usage. This study was however limited by its cross-sectional design and lack of temporal precedence in establishing the causal linkage between intention and use. Results are thus more indicative, and it is reasonable to assume that users who are motivated and willing to consume OFD services will continue to perform actual orders online. However, while intention may be necessary, it is not necessarily sufficient for causing actual OFD usage. The intention-usage gap will remain a question for future research to explore.

## 5.12 Moderator Variables

Variables of age, gender, variety seeking, and household size did not have a significant positive correlation with behavioural intention.

When considering the moderating effect of age, the results indicated that there were no significant effects across most relationships except facilitating conditions. It was found that the relationship between facilitating conditions and behavioural intention was stronger among respondents over the age of 35 than with respondents younger than 35. This could imply that the older population might need more assistance and support when utilising technology.

When considering the moderating effect of gender, the results indicated that there was no significance across most relationships except hedonic motivation. It was found that the relationship between hedonic motivation and behavioural intention

was stronger among female respondents than their male counterparts. This could imply that females are more driven by the experience of fun, pleasure, and enjoyment when it comes to using OFD services.

A further moderator that was considered was variety seeking. The results indicated that there were no significant moderating effects except for perceived risk. It was found that the relationship between risk and behavioural intention was stronger among high variety seekers respondents. This could imply that high variety seekers are exposed to greater risks, due to the uncertainties of trying new orders from new restaurants, and thus risks are more salient for their usage than it is for low variety seekers who are less likely to order new items from different restaurants and are thus less exposed to uncertainty and risk of loss.

Household size had no significant moderating effects on the links between the factors studied here and the behavioural intention to use OFD services. Thus, factors such as price value, convenience and social influence exert similar influences across large and smaller households.

## 5.13 Conclusion

This chapter discussed the results obtained from the statistical data analysis and provided insight into the factors found most important determinants of behavioural intention and actual use of OFD services. Performance expectancy, effort expectancy, social influence and perceived trust were significant for behavioural intention. This supports the original UTAUT and this study's proposed extension. Behavioural intention was found to be significant for actual use, supporting the theory linking intention to actual behaviours in the OFD context. The next chapter discusses the implications of these findings, and concludes the paper discussing limitations of the study and suggestions for future research.

# 6 CONCLUSIONS & RECOMMENDATIONS

## 6.1 Introduction

This chapter concludes the research report. A summary of the study is presented followed by a discussion on the study's theoretical and practical contributions and implications, limitations and suggestions for future research are then presented.

## 6.2 Summary of the Study

The objective of this research was to identify the factors that influence the intended and actual use of online food delivery services by urban consumers in South Africa. The main objective was facilitated by exploring consumer adoption through the lens of Unified Theory of Acceptance and Use of Technology (UTAUT2) and by extending the UTAUT2 model through the paradigm of risk and trust. A research model consisting of twelve hypotheses was developed.

A survey strategy was adopted, and the study's variables were operationalised using multi-item scales on a structured questionnaire administered by an online survey tool.

Data was collected from a non-probability sample of consumers using a convenience sampling and snowball sampling techniques. Data collection resulted in 180 usable responses from working professionals within South Africa.

Correlation and multiple regression was utilised to test the hypotheses. Five (5) out of the study's twelve (12) hypotheses were supported through multiple regression analysis with significant beta coefficients. Specifically, the following factors were found important to OFD use (performance expectancy, effort expectancy, social influence and trust). Conversely, seven (7) hypotheses were rejected with variables of gender, age, variety seeking, and household size generally found not to exert significant direct or moderating effects, except in a few cases. Specifically, facilitating conditions was deemed to be more important to older users who would generally require more assistance and support using OFD services, hedonic motivation was found to be more significant for female

users which infers that females are more motivated by feelings of fun, pleasure and enjoyment and lastly perceived risk was significant in users seeking variety which could be due the fact that they would engage more often with new restaurants and different cuisine types compared to those that would stick to the tried and tested.

## 6.3 Contributions of the Study

### 6.3.1 Contribution and Implications for Research

Although past research has examined consumer technology adoption and online behaviour, this research study filled a gap by extending that work to explore factors driving consumer adoption of OFD service in South Africa. The evolution of food consumption and potential growth of the OFD service market provided the motivation for the study. The study developed and contributed an extended UTAUT2 framework which provides a lens through which researchers can understand factors driving consumer adoption of OFD services. The extended UTAUT2 framework included Risk and Trust as additions as there have been a limited number of studies which incorporated Risk and Trust into UTAUT2 (Cody-Allen & Kishore, 2006). These were critical additions as the temporal and physical distance and lack of engagement between provider and consumer in the online purchase transaction introduces a number of uncertainties for consumers which elevates risks and the need for trust. This research therefore provided a new lens through which the adoption of OFD services can be studied which included the following variables: performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, habit, perceived risk and trust. Through statistical analysis it was found that performance expectancy, effort expectancy, social influence and trust were significant variables driving behavioural intention to use OFD services and behavioural intention was significant in driving actual use of OFD services. These empirical results thus confirmed the theoretical value of integrating UTAUT2 with theories of online consumer trust. Researchers should also be aware that control variables in age, gender, variety seeking, and household size did not generally influence the

determinants of adoption or use. However, the study has contributed to theory by showing they have effects in certain cases, such as facilitating conditions being more important to older users, hedonic motivation being more important for female users, and risk being more salient for high variety seeking individuals. Thus, the study has helped to shed additional light on the boundary conditions of the extended UTAUT model.

### 6.3.2 Contribution and Implications for Practice

In addition to the theoretical contributions, there are practical contributions that can be taken into consideration by OFD businesses and service providers. Firstly, because performance expectancy was proven to be significant for use, business practitioners would need to ensure elements like convenience is continually updated and remain relevant. Convenience as a factor is always evolving and initially, saving of time and effort were deemed enough to drive consumer adoption of OFD when compared to traditional options. Seamless transacting and 1-Click ordering are examples of initiatives that could further improve convenience. OFD service providers should thus ensure convenience and other utilitarian benefits form part of the value proposition of their service.

Secondly, effort expectancy was proven to be significant. Therefore, OFD service providers would need to ensure that any developments made to their mobile applications or web-based interfaces are intuitive, easy to use or learn, must not be perceived as complicated and should be self-explanatory. As the application is the “front-end” of the online restaurant, is must be visually attractive and the use of pictures, slideshows or short videos can stimulate the consumers sensors to increase the order size or try a new meal. Additionally, updating or editing orders, delivery address or payment methods must be simple. For example, providers might consider whether ease of use can be facilitated by automated voice, geo-location services, or integration with built-in billing options on the consumer’s smartphone. The roles of artificial intelligence and machine learning technology in support of ease of use requires more extended examination by practitioners and researchers.

Thirdly, social influence was found to be significant. OFD services would therefore need strong marketing strategies around social media to drive the consumers' social circle including family, friends, and work colleagues to adopt and continually use OFD service. It appears that OFD use, perhaps unlike other food consumption services, is a social phenomenon with implications for marketing and digital technology strategies of providers.

Lastly, trust was proven to be significant, and business should ensure all the relevant measures are in place to ensure consumers trust the OFD service provider. This is primarily due to biggest disadvantage of online shopping whereby products are not tangible, and consumers cannot touch, smell, see, listen, or taste before purchasing. Consumers have to thus rely on a picture or description of the meal. In order to improve the level of trust, the OFD service providers needs to ensure the picture of the meal is as close to the actual meal and all information provided is understandable. Additionally, rating and reviews which are inherent in OFD applications could be used to instil a high level of trust, together with data security and privacy, secure known payment system, service levels and customer support should be easily available and easily accessible. OFD services providers should consider these recommendations in the development of an overall trust building strategy.

## 6.4 Limitations and Suggestions for Further Research

The research took place in South Africa which is an emerging economy (Deloitte, 2017) and the sample population was biased towards working professionals who were relatively educated, had access to the internet and owned smartphones. Results could therefore differ when compared to developed countries with different economic and technological conditions. Furthermore, with OFD being a relatively new concept within the South African e-commerce landscape, some respondents may not have been familiar with OFD services.

Issues of generalisability with reference to response and completion rates might have occurred as the study's survey questionnaire was distributed online (Bhattacherjee, 2012; Cohen, 2017). The external validity of the study will also

be reduced by sampling bias due non-probability sampling methods conducted with working professionals. Time and resources necessitated use of snowball sampling methods, notwithstanding the COVID-19 lockdown restrictions which prevented use of techniques such as intercept method. An element of the data cleaning process only included respondents who had purchased online before and thus the final sample was limited to respondents familiar with the service. Therefore, the results may not be predictive of early consumer attitudes towards OFD services. The study employed cross sectional research design and thus data for independent and dependent variable were captured at the same time and this leads to a threat of internal validity as there is no temporal precedence in the data. Causal inferences are however made through theories cited in the study. Social desirability bias refers to a bias type whereby respondents' answers questions in a manner viewed as favourable by others. Such biases are inherent to surveys and therefore can be seen as a limitation of the study results (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

The study's final sample included 180 individuals. Even though the sample of 180 respondents was deemed sufficient, a higher sample could be beneficial to a repeat study. In order to obtain even greater statistical power and generalisations in future studies; a greater number of responses would need to be considered. Furthermore, the questionnaire made use of Likert scales for the majority of the questions and the study was limited by compliance bias in the form of agreeing and disagreeing with questions in the survey which limits ability to gain deep insights into the perceptions, attitudes and moods of the respondents at the time the survey was completed. A quantitative research approach was used in this study. Further studies could be done using a qualitative approach which will allow for a more in-depth understanding of why consumers are not adopting OFD services. Alternate methods such as interviews and focus groups could be considered in future studies.

This study investigated the factors driving consumer adoption of OFD services drawn from UTAUT2 and trust and risk models. Future research could consider factors derived from other theories or frameworks. For example, theories of continuous use such as expectation-confirmation theory may provide additional

insights. Consumer adoption is only one element which drives the success of the service, user satisfaction and extended use over time, OFD service loyalty, and consumer willingness to refer through positive word of mouth might be regarded as equally or even more important outcomes for future research to explore. Future studies may wish to consider the switching costs for uses that might be incurred by using different OFD platforms, and providers might consider how OFD habits can be extended through loyalty and other reward schemes. Some OFD providers have been known to engage in nudging where users are repeatedly reminded of offers and deals and encouraged to form habits and extend their consumption behaviours. Future work may wish to explore the role of these nudges in consumer attitudes toward OFD and their role in habit formation.

Furthermore, this study was dominated within Gauteng province; further research with a sample of other provinces could provide a different perspective to improve generalisation. For example, the concentration of food providers (restaurants) and the logistics infrastructures to facilitate delivery differ across provinces which might lead to differential impacts of factors considered in this model.

Lastly, the study was conducted with the consumer in mind, validating and verifying the consumer perspective. Further research can highlight the retailers' perspective which could show both the benefits and challenges faced when offering of OFD services and the factors influencing their selection of platforms on which to host their services, along with considerations such as multi-homing on more than one platform.

## 6.5 Conclusion

This study provided empirical evidence of the factors driving consumer adoption of OFD services, with a focus on urban consumers in South Africa. As there is not much research done in South Africa on this topic, this research fills the gap by integrating theories of UTAUT2 and trust and risk to provide a framework which highlights the key factors influencing consumer adoption of OFD services. Through empirical survey of consumers, the study confirmed performance expectancy, effort expectancy, social influence and trust as the major

determinants of OFD use. As a result of the findings, OFD service providers are now in a better position to succeed by using these findings to prioritise and inform their value proposition, mobile application and technology development, social-media and marketing strategies and their approach to building trust with consumers. Suggestions for further research have also been offered.

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# APPENDIX A: Research Instrument

0% 100%

Wits Business School
*Sculpting global leaders*

Dear Participant,

Over the last decade the Online Food Delivery (OFD) market has prospered as an online industry with consumption of prepared food services at home. The objective of the study is to gain a deeper understanding of the factors that influence consumer adoption of OFD services.

Participation of this questionnaire is voluntary and anonymous. The questionnaire should take approximately 10 - 15 minutes to complete. Some of the questions require you to answer some demographic information. However, this information will only be used in the research and will not be made available to anyone. All the data gathered will be treated as anonymous, no specific personal or company data will be disclosed but all information will be disclosed as aggregate figures.

Please answer the questions from your personal perspective and honestly. Select the most appropriate response accordingly.

Should you have any queries or comments regarding this survey, you are welcome to contact me via email at: 979412@students.wits.ac.za.

Thank you for your participation.

Kind regards

Talga Capri

STATEMENT BY PERSON AGREEING TO PARTICIPATE IN THIS STUDY

I hereby agree to participate in this research on the factors impacting the adoption of online food delivery in South Africa. I understand that I am participating based on my own will and that this is a research project that will not benefit me personally but may make a contribution to the literature and society. I understand that my participation will remain confidential. I freely and voluntarily choose to participate on this study.

- ◯ Agree
- ◯ Do not agree

Wits Business School
Sculpting global leaders

D01. What is your gender?

- ◯ Male
- ◯ Female
- ◯ Transgender
- ◯ Non-binary
- ◯ Prefer to self-identify (other)

D02. What is your age group?

- ◯ 18-24
- ◯ 25-34
- ◯ 35-44
- ◯ 45-54
- ◯ 55-64
- ◯ 65 and above
- ◯ Prefer not to say

D03. What is your highest level of education?

- ◯ I never went to school
- ◯ Primary school
- ◯ High school
- ◯ Diploma
- ◯ Bachelor's Degree
- ◯ Honour's Degree
- ◯ Master's Degree
- ◯ PHD/Doctorate Degree

D04. What is your annual income per annum - before tax?

- ◯ R0 - R100,000
- ◯ R100,000 - R250,000
- ◯ R250,000-R500,000
- ◯ R500,000-R750,000
- ◯ R750,000 - R1,000,000
- ◯ Greater than R1,000,000
- ◯ Prefer not to say

D05. Employment Status

- ◯ Employed full-time
- ◯ Employed part-time
- ◯ Self-employed/Contractor
- ◯ Full-time student
- ◯ Not currently working
- ◯ Retired
- ◯ Prefer not to say

D06. Single vs multi-person household

- ◯ 1 person
- ◯ 2 persons
- ◯ 3 persons
- ◯ 4 persons or more

VS01. I think it is fun to try out foods I am not familiar with

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

VS02. I like to try food from different restaurants

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

VS03. I am constantly sampling new and different foods

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

E01. Do you own a smartphone?

- ◯ Yes
- ◯ No

E02. Which form of internet connection do you primarily use to access the internet?

- ◯ Mobile Data / LTE
- ◯ Wifi
- ◯ Fibre
- ◯ None

E03. Have you purchased non-food products online before?

- ◯ Yes
- ◯ No

E04. When was the last time you purchased any product or service online?

- ◯ Within the past week
- ◯ Within the past two weeks
- ◯ Within the past month
- ◯ Within the past six months
- ◯ Within the past year
- ◯ More than a year ago

E05. Have you ordered food online before?

- ◯ Yes
- ◯ No

E06. When was the last time you purchased food online?

- ◯ Within the past week
- ◯ Within the past two weeks
- ◯ Within the past month
- ◯ Within the past six months
- ◯ Within the past year
- ◯ More than a year ago

E07. When purchasing online, which form of payment do you make the most use of?

- ◯ Credit Card
- ◯ Debit Card
- ◯ Mobile Wallet
- ◯ Electronic Funds Transfer (EFT)
- ◯ Other

E08. Have you ordered food online before COVID-19?

- ◯ Yes
- ◯ No

E09. To what extent has COVID-19 changed your online purchase behaviour? I now purchase online...

- ◯ A lot less
- ◯ Less
- ◯ No change
- ◯ More
- ◯ A lot more

PE01.
Online food delivery forms part of online food ordering which is the process of ordering food from an application or website. The food is prepared and delivered to the users desired location. Familiar OFD services include UberEATS and Mr D Food.

The following questions ask about your perceptions regarding OFD.

Using OFD services would save me time

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PE02. Using OFD services would be convenient for me

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PE03. Using OFD services allows to me to track my order status

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PE04. OFD services would offer me a variety of food choices

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PE05. OFD services would offer detailed information about the foods featured

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PE06. OFD services offers savings when ordering food

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PE07. OFD services allows me to verify the best price for a meal

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PE08. OFD services would help me to discover nearby restaurants

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PE09. Compared with alternatives, using OFD services is a good idea

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PE10. Overall, using OFD services would deliver me good value

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

EE01. Using OFD services would be easy for me

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

EE02. Learning how to use OFD services would be easy for me

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

EE03. I would find interacting with OFD services clear and understandable

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

SI01. My family would encourage me to use OFD services

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

SI02. My friends would encourage me to use OFD services

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

SI03. My colleagues and peers would encourage me to use OFD services

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

FC01. I have the necessary (smart phone, application, data) resources to use OFD services

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

FC02. I have the knowledge and ability to use OFD services

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

FC03. I do not need assistance in order to use OFD services

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

HM01. Using OFD services is fun

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

HM02. Using OFD services is enjoyable

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

HM03. Using OFD services is very entertaining

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PV01. OFD services are reasonably priced

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PV02. OFD services are good value for money

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PV03. At current prices, using OFD services are worth the money

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

H01. The use of OFD services would be a habit for me

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

H02. Using OFD services would be natural to me

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

H03. Using OFD services would be part of my routine

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

BI01. Assuming I have access to OFD services, I intend to use it

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

BI02. If I have an opportunity, I would order food through the OFD service provider

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

BI03. I would intend to keep ordering food through the OFD service provider

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

BI04. I would always try to use OFD services in my daily life

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

BI05. I would plan to use OFD services in the future

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

AU01. Over the past month, how many times have you used an OFD service (e.g. UberEats or Mr D Food) to complete an online order?

- ◯ 1-2 times
- ◯ 3-4 times
- ◯ 5-6 times
- ◯ 7 or more
- ◯ None

AU02. Which OFD service have you used? Please select all that apply.

- ☐ UberEats
- ☐ Mr D Food
- ☐ Order In
- ☐ None

AU03. If ordered before, times most used:

- ◯ Midnight - 11am
- ◯ 11am – 2pm
- ◯ 2pm – 5pm
- ◯ 5pm – 8pm
- ◯ 8pm - Midnight
- ◯ Not Applicable

PR01. It is likely that food purchased from the OFD service may fail to meet the intended quality

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PR02. It is likely that the OFD service may cause me to suffer a financial loss due to order errors

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PR03. It is likely that the OFD service may cause me to lose control over the privacy of my personal and payment information

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PR04. It is likely that the OFD may fail to deliver the order or make a late delivery

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PR05. It is likely that the price paid may not reflect the true value I get from the food

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PR06. It is likely that the OFD service may not present the food accurately on the application

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PT01. OFD service providers are trustworthy

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PT02. OFD service providers are capable and proficient

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PT03. OFD service providers care about their customers

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

PT04. OFD service providers keep their commitments

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Somewhat Disagree
- ◯ Neither Agree or Disagree
- ◯ Somewhat Agree
- ◯ Agree
- ◯ Strongly Agree

# APPENDIX B: Invitation Cover Letter

Good day,

My name is Talga Capri and I am a student at Wits Business School, studying towards a Master's degree in Digital Business. I invite you to kindly participate in completing an anonymous survey as part of my research study titled "**Factors impacting the adoption of online food delivery services in South Africa**."

The online survey takes approximately 10-15 minutes to complete. Some of the questions require you to answer some demographic information. However, this information will only be used in the research and will not be made available to anyone. All the data gathered from this survey will be treated as anonymous, no specific personal or company data will be disclosed but all information will be disclosed as aggregate figures.

If you wish to participate, please click on the link below or alternatively copy and paste the link into your browser.

https://wits.eu.qualtrics.com/jfe/form/SV_eUJ8WikXBty8ivH

Thank you in advance for your participation.

Talga Capri

0829910230

# APPENDIX C: Ethics Clearance Certificate

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

**SCHOOL OF GRADUATE SCHOOL OF BUSINESS ADMINISTRATION ETHICS COMMITTEE**
**CONSTITUTED UNDER THE UNIVERSITY HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)**

| | |
|---|---|
| **CLEARANCE CERTIFICATE** | **PROTOCOL NUMBER: WBS/BA979412/616** |
| **PROJECT TITLE** | Factors impacting the adoption of online food delivery services in South Africa |
| **INVESTIGATOR** | Mr Talga Capri |
| **SCHOOL/DEPARTMENT OF INVESTIGATOR** | MM (Digital Business) |
| **DATE CONSIDERED** | 20 July 2020 |
| **DECISION OF THE COMMITTEE** | Approved unconditionally |
| **RISK LEVEL** | MINIMAL RISK |
| **EXPIRY DATE** | 30 JUNE 2021 |

**ISSUE DATE OF CERTIFICATE** 4 August 2020

**CHAIRPERSON** Matshabaphala
(Dr MDJ Matshabaphala)

cc: Supervisor: Prof. Cohen

---

**DECLARATION OF INVESTIGATOR**

To be completed in duplicate and **ONE COPY** returned to the Chairperson of the School/Department ethics committee.

I fully understand the conditions under which I am are authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee.

TCapri
**Signature**

04 / August / 2020
**Date**

# APPENDIX D: Distribution of Responses

| Descriptive Statistics | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | Minimum | Maximum | Mean | Std. Deviation | Skewness | | Kurtosis | |
| | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| Composite_Behavioural_Intention | 180 | 2,00 | 7,00 | 5,4944 | 1,08398 | -0,861 | 0,181 | 0,737 | 0,360 |
| Composite_Performance_Expectancy | 180 | 1,50 | 7,00 | 5,8750 | 0,98859 | -1,529 | 0,181 | 3,717 | 0,360 |
| Composite_Effort_Expectancy | 180 | 1,50 | 7,00 | 5,0292 | 0,89039 | -0,681 | 0,181 | 1,373 | 0,360 |
| Composite_Social_Influence | 180 | 1,00 | 7,00 | 4,6222 | 1,17780 | -0,513 | 0,181 | 0,370 | 0,360 |
| Composite_Facilitating_Conditions | 180 | 4,33 | 7,00 | 6,5741 | 0,58009 | -1,212 | 0,181 | 0,915 | 0,360 |
| Composite_Hedonic_Motivation | 180 | 1,00 | 7,00 | 4,6222 | 1,17780 | -0,513 | 0,181 | 0,370 | 0,360 |
| Composite_Price_Value | 180 | 1,00 | 7,00 | 4,2648 | 1,31868 | -0,313 | 0,181 | -0,633 | 0,360 |
| Composite_Perceived_Risk | 180 | 1,00 | 7,00 | 4,1767 | 1,27866 | -0,085 | 0,181 | -0,522 | 0,360 |
| Composite_Perceived_Trust | 180 | 1,50 | 7,00 | 5,0292 | 0,89039 | -0,681 | 0,181 | 1,373 | 0,360 |
| Composite_Variety_Seeking | 180 | 1,67 | 7,00 | 5,2667 | 1,16881 | -0,855 | 0,181 | 0,285 | 0,360 |
| Valid N (listwise) | 180 | | | | | | | | |

**Table 44: Distribution of Responses**

# APPENDIX E: Data Analysis

### Table 45: Correlation Table

**Correlations**

| | | Composite_Behavioural_Intention | Composite_Trust | Composite_Risk | Composite_Hedonic_Motivation | Composite_Price_Value | Composite_Effort_Expectancy | Composite_Variety_Seeking | Composite_Facilitating_Conditions | Composite_Social_Influence | Composite_Performance_Expectancy |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Composite_Behavioural_Intention | Pearson Correlation | 1 | .420** | -.293** | .438** | .350** | .457** | 0,129 | .160* | .507** | .638** |
| | Sig. (2-tailed) | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,084 | 0,032 | 0,000 | 0,000 |
| | N | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 |
| Composite_Performance_Expectancy | Pearson Correlation | .638** | .337** | -.266** | .338** | .236** | .301** | .199** | 0,110 | .345** | 1 |
| | Sig. (2-tailed) | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,000 | 0,007 | 0,143 | 0,000 | |
| | N | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 |
| Composite_Effort_Expectancy | Pearson Correlation | .457** | .241** | -.151* | .293** | .254** | 1 | .215** | .472** | .371** | .301** |
| | Sig. (2-tailed) | 0,000 | 0,001 | 0,044 | 0,000 | 0,001 | | 0,004 | 0,000 | 0,000 | 0,000 |
| | N | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 |
| Composite_Social_Influence | Pearson Correlation | .507** | .319** | -.230** | .403** | .361** | .371** | 0,059 | .163* | 1 | .345** |
| | Sig. (2-tailed) | 0,000 | 0,000 | 0,002 | 0,000 | 0,000 | 0,000 | 0,435 | 0,029 | | 0,000 |
| | N | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 |
| Composite_Facilitating_Conditions | Pearson Correlation | .160* | .210** | -0,078 | 0,100 | 0,097 | .472** | .170* | 1 | .163* | 0,110 |
| | Sig. (2-tailed) | 0,032 | 0,005 | 0,296 | 0,181 | 0,194 | 0,000 | 0,022 | | 0,029 | 0,143 |
| | N | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 |
| Composite_Hedonic_Motivation | Pearson Correlation | .438** | .401** | -.194** | 1 | .391** | .293** | .154* | 0,100 | .403** | .338** |
| | Sig. (2-tailed) | 0,000 | 0,000 | 0,009 | | 0,000 | 0,000 | 0,039 | 0,181 | 0,000 | 0,000 |
| | N | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 |
| Composite_Price_Value | Pearson Correlation | .350** | .428** | -.321** | .391** | 1 | .254** | .184* | 0,097 | .361** | .236** |
| | Sig. (2-tailed) | 0,000 | 0,000 | 0,000 | 0,000 | | 0,001 | 0,013 | 0,194 | 0,000 | 0,001 |
| | N | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 |
| Composite_Risk | Pearson Correlation | -.293** | -.407** | 1 | -.194** | -.321** | -.151* | -0,086 | -0,078 | -.230** | -.266** |
| | Sig. (2-tailed) | 0,000 | 0,000 | | 0,009 | 0,000 | 0,044 | 0,251 | 0,296 | 0,002 | 0,000 |
| | N | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 |
| Composite_Trust | Pearson Correlation | .420** | 1 | -.407** | .401** | .428** | .241** | .225** | .210** | .319** | .337** |
| | Sig. (2-tailed) | 0,000 | | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,005 | 0,000 | 0,000 |
| | N | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 |
| Composite_Variety_Seeking | Pearson Correlation | 0,129 | .225** | -0,086 | .154* | .184* | .215** | 1 | .170* | 0,059 | .199** |
| | Sig. (2-tailed) | 0,084 | 0,002 | 0,251 | 0,039 | 0,013 | 0,004 | | 0,022 | 0,435 | 0,007 |
| | N | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 |

### Table 46: Multiple Regression Analysis - UTAUT2 Coefficients

| Coefficients[a] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | -0,326 | 0,680 | | -0,479 | 0,632 | | |
| | Composite_Performance_Expectancy | 0,495 | 0,062 | 0,451 | 8,042 | 0,000 | 0,808 | 1,238 |
| | Composite_Effort_Expectancy | 0,277 | 0,082 | 0,212 | 3,378 | 0,001 | 0,647 | 1,545 |
| | Composite_Social_Influence | 0,197 | 0,057 | 0,206 | 3,451 | 0,001 | 0,712 | 1,404 |
| | Composite_Facilitating_Conditions | -0,078 | 0,107 | -0,042 | -0,729 | 0,467 | 0,775 | 1,290 |
| | Composite_Hedonic_Motivation | 0,107 | 0,054 | 0,116 | 1,961 | 0,051 | 0,728 | 1,374 |
| | Composite_Price_Value | 0,060 | 0,047 | 0,073 | 1,292 | 0,198 | 0,789 | 1,268 |

Tolerance values are close to 1 and VIF values are well below 5. Assumptions related to absence of collinearity are supported.

## Statistics of Behavioural Intention for UTAUT2 Coefficients

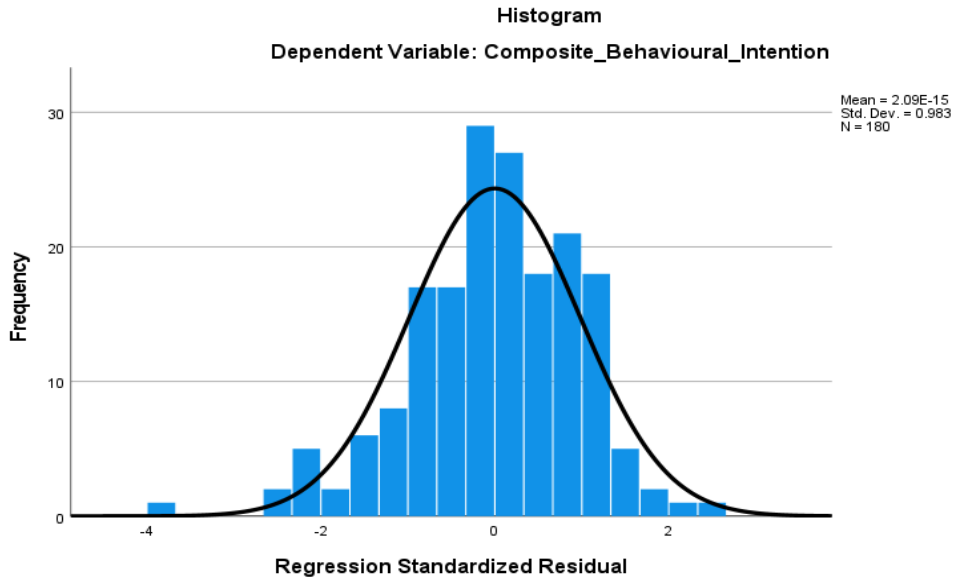



**Figure 26: UTAUT2 Coefficients Histogram**

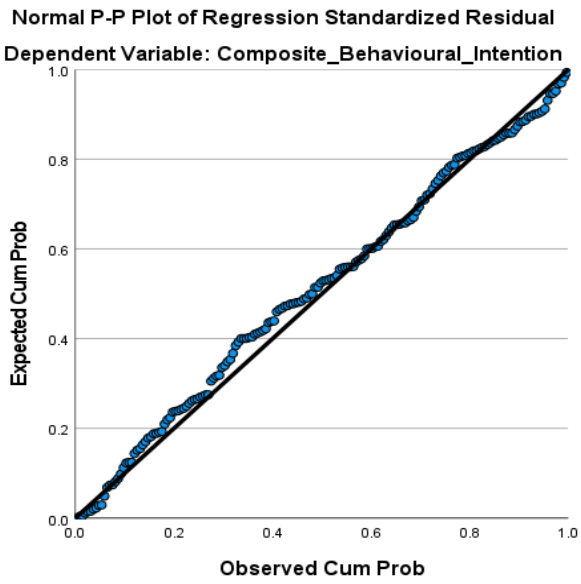



**Figure 26: Normality of the Residual Distribution of Behavioural Intention for UTAUT2 Coefficients**

The residuals appear to be normally distributed.

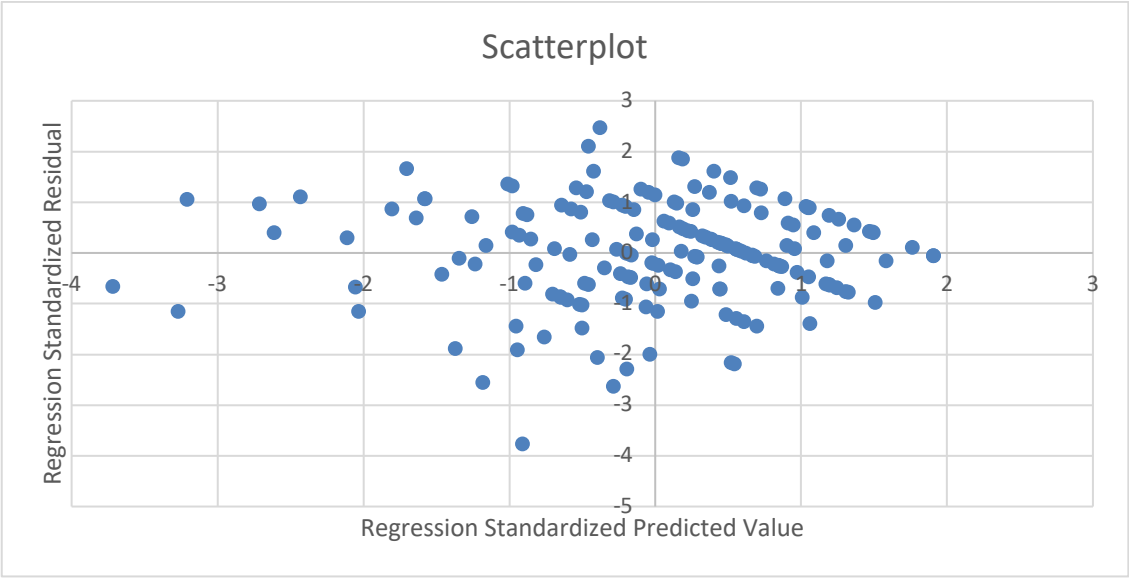



**Figure 27: Heteroskedasticity Results of Behavioural Intention for UTAUT2 Coefficients**

Pattern appears not to follow any specific shape except perhaps at high values on intention, but otherwise no discernible pattern to suggest any major violations of the heteroskedasticity assumption.

**Table 47: Multiple Regression Analysis – Trust and Risk Coefficients**

| Coefficients[a] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | 3,810 | 0,612 | | 6,222 | 0,000 | | |
| | Composite_Trust | 0,438 | 0,090 | 0,360 | 4,870 | 0,000 | 0,834 | 1,199 |
| | Composite_Risk | -0,124 | 0,063 | -0,146 | -1,982 | 0,049 | 0,834 | 1,199 |

Tolerance values are close to 1 and VIF values are well below 5. Assumptions related to absence of collinearity are supported.

## Statistics of Behavioural Intention for Trust and Risk Coefficients

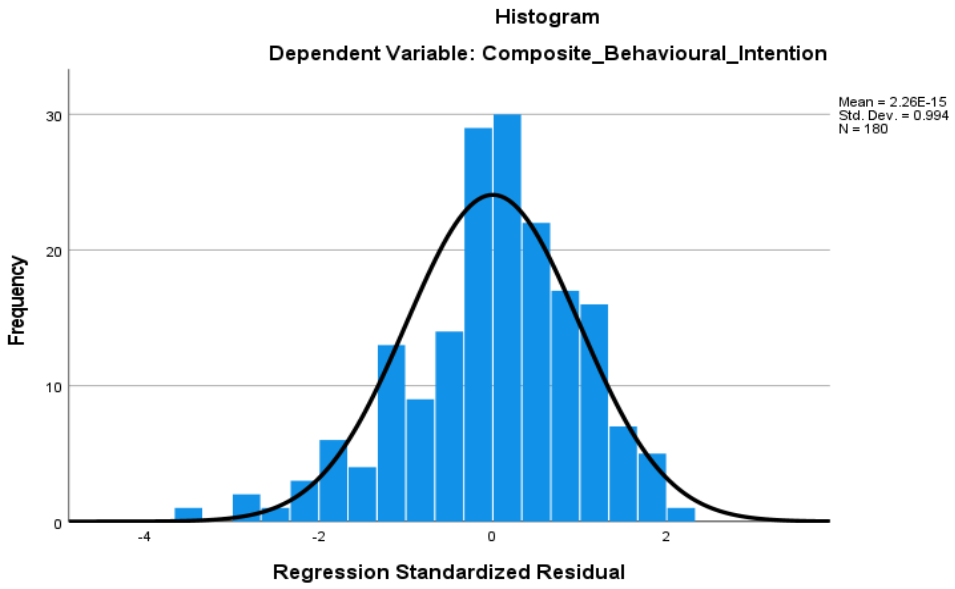



**Figure 28: Trust and Risk Coefficients Histogram**

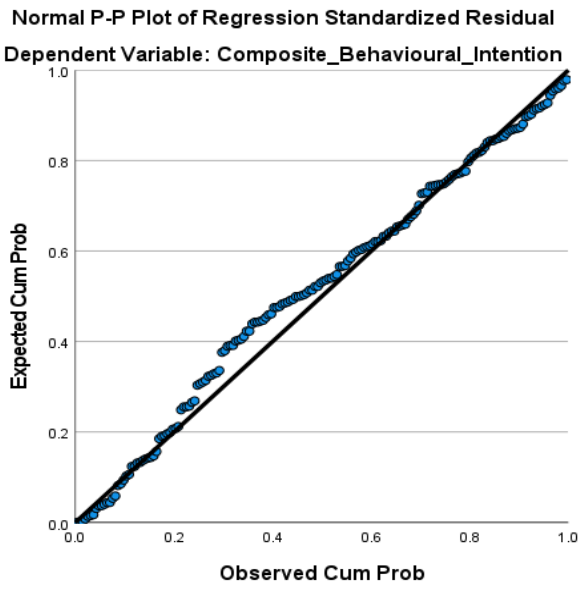



**Figure 29: Normality of the Residual Distribution of Behavioural Intention for Trust and Risk Coefficients**

The residuals appear to be normally distributed.

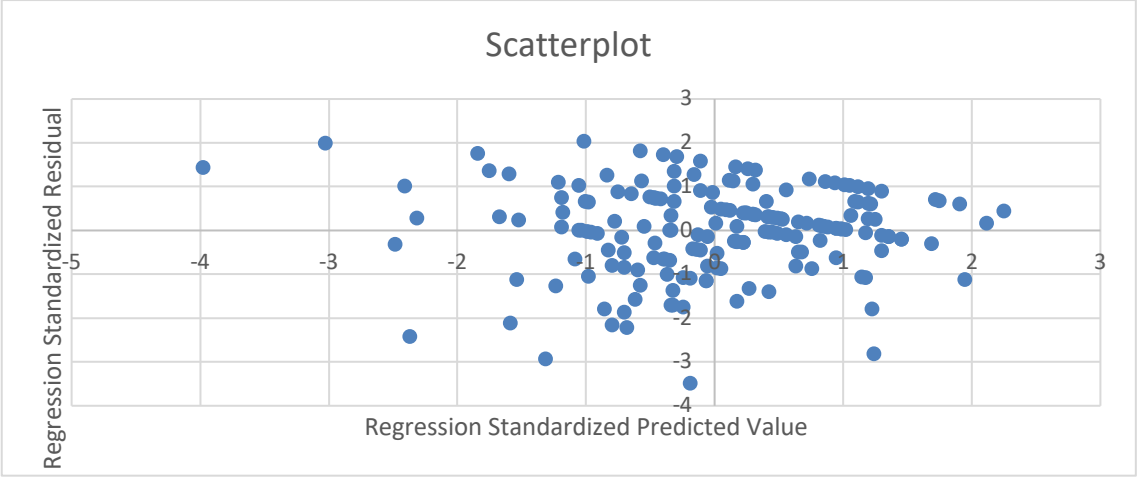



**Figure 30: Heteroskedasticity Results of Behavioural Intention for Trust and Risk Coefficients**

Pattern appears not to follow any specific shape except perhaps at high values on intention, but otherwise no discernible pattern to suggest any major violations of the heteroskedasticity assumption.

**Table 48: Multiple Regression Analysis – Combined Coefficients**

| Coefficients[a] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | -0,744 | 0,619 | | -1,202 | 0,231 | | |
| | Composite_Performance_Expectancy | 0,487 | 0,062 | 0,444 | 7,828 | 0,000 | 0,788 | 1,269 |
| | Composite_Effort_Expectancy | 0,263 | 0,073 | 0,201 | 3,616 | 0,000 | 0,821 | 1,218 |
| | Composite_Social_Influence | 0,217 | 0,055 | 0,228 | 3,964 | 0,000 | 0,768 | 1,302 |
| | Composite_Risk | -0,032 | 0,047 | -0,038 | -0,672 | 0,503 | 0,810 | 1,235 |
| | Composite_Trust | 0,163 | 0,071 | 0,134 | 2,287 | 0,023 | 0,744 | 1,344 |

Tolerance values are close to 1 and VIF values are well below 5. Assumptions related to absence of collinearity are supported.

## Statistics of Behavioural Intention for Combined Coefficients

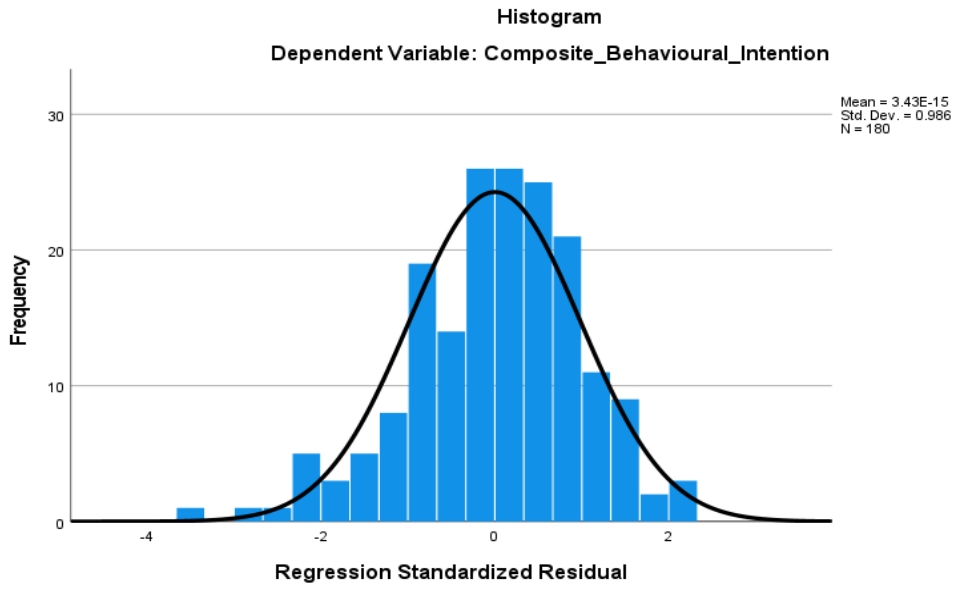



**Figure 31: Combined Coefficients Histogram**

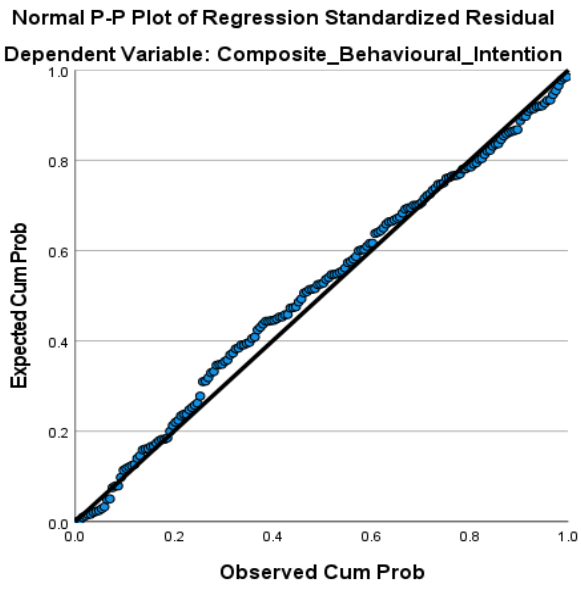



**Figure 32: Normality of the Residual Distribution of Behavioural Intention for Combined Coefficients**

The residuals appear to be normally distributed.

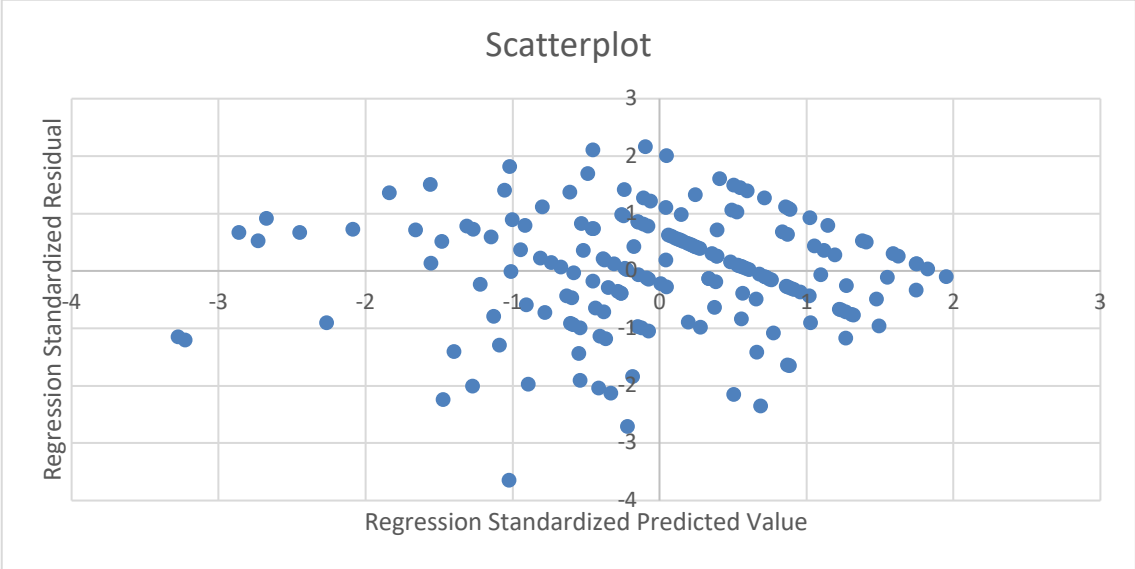



**Figure 33: Heteroskedasticity Results of Behavioural Intention for Combined Coefficients**

Pattern appears not to follow any specific shape except perhaps at high values on intention, but otherwise no discernible pattern to suggest any major violations of the heteroskedasticity assumption.

# APPENDIX F: Summary Plagiarism Report

## Turnitin Originality Report

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