**Gordon Institute
of Business Science**
University of Pretoria

The extent of COVID-19's influence on the customer experience of online food ordering applications in South Africa

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ABSTRACT

Online food ordering applications (OFOA) have changed customer-interaction within the food services industry. The emergence of COVID-19 has influenced the state of business-to-customer relations challenging how businesses attain success as customer expectations morph rapidly and markets take on a new dynamic. This study empirically assessed the influence of COVID-19 on the OFOA customer journey. In conducting such an analysis, businesses can harness practical approaches to enhancing customer experience in line with how customers allocate importance to each phase in their customer journey. A quantitative research approach was employed by drawing on descriptive statistics and multivariate analysis (structural equation modelling) to determine how COVID-19 affected OFOA users. The study yielded interesting results, such as that COVID-19 affected how customers experience OFOA in the pre-purchase and purchase stages of the customer journey. Additionally, COVID-19 has positively affected overall customer satisfaction of OFOA, and the decision customers make on OFOA. The results revealed that the customer journey could not be isolated as a construct where customer experience is measured concerning the satisfaction of OFOAs use. Further themes were presented in describing the influence of COVID-19 on OFOA. The study has significant business implications as it can assist those in the food service industry to align their OFOA experience to customer expectation.

DECLARATION

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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LIST OF ACRONYMS

Abbreviation	Meaning
AVE	Average variance extracted
CMB	Common method bias
GIBS	Gordon Institute of Business Science
HTMT	Heterotrait-monotrait ratio
ITC	Information Communication Technology
KMO	Kaiser-Meyer-Olkin
NFI	Normed Fit Index
OFOAs	Online Food Ordering Applications
PC	Personal computer
PLS	Partial least square
RMSEA	Root mean square error of approximation
SEM	Structural equation model
SRMR	Standardised root mean square residual

UX	User experience

CHAPTER 1: INTRODUCTION TO THE RESEARCH PROBLEM

1.1 Introduction

The purpose of this section is dedicated to presenting the definitions of the main theoretical constructs and the associated relationships thereof that this study encompasses. This chapter focuses on how SARS-CoV-2 novel coronavirus (COVID-19) affected the use of online food ordering applications (OFOAs) and how it affected the customer experience of the businesses that use these applications as a sales platform. This was reviewed with the customer journey as a theoretical lens, outlining the outlook and approach to understanding the customer experience. This chapter presents the background and purpose of the research problem while representing the context and framing the research topic accordingly.

1.2 Research purpose

Attracting and retaining customers remains a core function of multiple departments in a business organisation. One avenue to support business success is the introduction and use of mobile applications. Recent studies have established that using digital technology, such as mobile applications, has made such an influence on customer behaviour that introducing these platforms into business may have a significant increase in sales volumes (Bag et al., 2021; Hamouda, 2021).

In early 2020, the world experienced a black swan event that threw the business and the social world into disarray. This was caused by COVID-19. The COVID-19 pandemic triggered a wide range of protective phases undertaken by governments globally, including the South African Government, which included lockdown measures, travel restrictions, prohibiting of large-scale events (Haider et al., 2020) and even the prohibition of direct contact among individuals, introducing social distancing (Muangmee et al., 2021), to name a few.

Businesses had to adapt quickly to these changes to remain relevant and generate sufficient revenue. This yielded a surge in the contactless online food delivery business, which solved the change in consumer needs, which saw safety and convenience come first before other needs. During 2020, there was also an increase

in total mobile users globally to 5.1 billion users (Muangmee et al., 2021) and in South Africa, a total of 47 million mobile internet users were recorded (Statista, 2022a).

For online mobile food businesses to remain a going concern, their focus needs to turn rapidly to the customer experience and journey and realise how to best accommodate the abundance of customers now pursuing to pay almost any fee for the convenience and safety that comes with ordering in (Muangmee et al., 2021). The same businesses were also not immune to the shocks of these externalities and the relevance and importance of such a study is undoubtedly clear. This study therefore examines how the COVID-19 pandemic, per the South African contextual backdrop, has influenced and shaped the customer experience of OFOAs, with customer journey as the theoretical grounding.

1.3   Research problem

The estimated number of mobile applications downloaded from application stores, such as Google Play Store, will be a staggering 258 million in 2022, with business applications being the second most popular category after games (Bursać, 2018) and approximately 6% growth in mobile application downloads in South Africa in 2022 (Statista, 2022b). This significant increase indicates the rising importance of mobile phone applications for business success and the influence of COVID-19 on customers' mobile application usage (Ali et al., 2020; Chotigo & Kadono, 2021; Diebner et al., 2020; Muangmee et al., 2021). As mobile application usage continues in this trajectory, how consumers interact with the business offering - through the multiple channels and the myriad of customer touchpoints within these channels - the customer journey resembles a labyrinth as opposed to a cyclical process (Følstad & Kvale, 2018; Tueanrat et al., 2021).

A business's ability to accommodate the changing customer needs of an online food ordering application user then becomes of urgent interest as customers lean towards this technology for the service of food delivery during the pandemic and possibly for a long time into the future. The research problem is to determine the effects on consumer experience, driving the decisions they make about their use of OFOAs during the pandemic, and how best businesses can manipulate this to their benefit.

The research problem is that the growing use of OFOA because of COVID-19 has significantly changed customer purchase decisions and experience (Kannan & Kulkarni, 2022), therefore, challenging how the restaurant business and online food ordering application owners operate (Farah et al., 2022). The context of this research is that of a South African individual that makes use of OFOAs on their mobile phones across all demographics and socioeconomic backgrounds, driven by diverse motives of customer satisfaction and iterative customer experience, known as customer journey (Lemon & Verhoef, 2016; Rosenbaum et al., 2017), because of the regions response to the COVID-19 pandemic.

There has been an increased prevalence in research about the influence and effects of this pandemic on emerging markets (Farah et al., 2022; Zanetta et al., 2021); however, the relevance of researching the influence of COVID-19 on the customer experience of OFOA users is still growing and remains relevant. Recent research, such as the "Factors influencing customers' continuance usage intention to use foods delivery apps" (Ramos, 2022) and "The impact of COVID-19 on customer journeys: implications for interactive marketing" (Kannan & Kulkarni, 2022) exists; however a divergence remains in the literature discussing the influence of COVID-19 on OFOAs in South Africa, employing the customer journey as a theoretical lens. This research, therefore, contributes to academia by extending the existing body of knowledge on the customer experience of OFOAs by exploring the influence of COVID-19 on the customer experience of online food ordering application users through empirical testing and evidence.

As the environmental, political, and economic landscapes continuously evolve globally, attributable to technology and COVID-19, the permanency and irrevocability of the influence have become increasingly stark. This effect on businesses involved in the online food and delivery services sector is significant (Farah et al., 2022; Zanetta et al., 2021); therefore, this research remains relevant for the future of businesses as it can be a basis for developing strategies to acquire and retain more business with customers, increasing customer loyalty and competitive advantage.

1.4   Motivation for the study

This research is motivated by the need to provide businesses with devices to enable

them to understand the customer's changing requirements amid the global COVID-19 pandemic. The study is also particularly relevant in a post-COVID business environment where the business-as-usual construct has been questioned. Developing devices and applying customer journey theoretical studies is important to understanding the changing dynamics and how to best prepare for it. Provided the technological disruptions brought on by the pandemic, there is an urgent call for businesses to remain agile and adaptive to externalities, such as the COVID-19 pandemic.

The objective of this post-positivist research is to investigate how COVID-19 influences the customer experience and journey of OFOA users. The research explored the lived experiences of South African OFOA users above the age of 18 years and identified their change in needs since the pandemic struck, and several government regulations were implemented. This research assessed the extent to which the customer journey for OFOA users has changed and taken on a dissimilar trajectory and how it is possible for businesses in the OFOA industry to not only cater to these altered norms but also benefit from them.

The study, therefore, attempted to answer one overarching research question: *What was the influence of COVID-19 on the customer experience and, therefore, the customer journey of online food ordering application users in South Africa?* The hypotheses developed later in the study, attempt to respond to the research question.

1.4.1 Business needs

This research yielded a contribution to the world of business through implementing analytical devices to investigate what the best business practices are that can be employed by OFOAs to cater to a newly mapped customer journey and to remain resilient in a fast-changing business environment. Businesses can use the study outcomes to develop business policies and procedures and adapt their practices to align them to customer experience needs. The research also contributes to that businesses must understand how best to thrive during these unprecedented times.

Tueanrat, Papagiannidis and Alamanos (2021) and Kannan and Kulkarni (2021)

identify elements of customer experience and customer journey constantly evolving; therefore, businesses attempting to outlive their competitors in these ever-changing times need to investigate and understand how decisions are repeatedly made by their customers. This iterative loop of consumer decision-making influencing consumer behaviour is also known as the customer journey. If this is understood well enough, it can significantly influence a business's operating model and how they maximise resources to generate more revenue.

The urgency of the study was, therefore, derived from the volatile global economic state worsened because of the COVID-19 pandemic, affecting businesses unprecedentedly (Bag et al., 2021). There is, therefore, merit in investigating the phenomenon—the customer journey in the context of the recent global COVID-19 pandemic where there is a high cost of living and rising interest rates.

1.4.2 Theoretical need

This research determined the extent of the influence that the pandemic has had on businesses in the food industry and their engagement with their customers, through the theoretical framework of customer journey and customer experience. This research and its constructs, therefore, analyse consumer behaviour as this theoretical contribution adds to the existing body of knowledge in the spheres of marketing, psychology, business management, technology, and other related fields.

Past and current literature have investigated various aspects of the customer journey through various lenses. Among the authors of such literature are Lemon and Verhoef (2016), Følstad and Kvale (2018), Tueanrat, Papagiannidis and Alamanos (2021) and Kannan and Kulkarni (2021). These authors have considered varying perspectives on customer journey and, to contrast these studies; this research clarified this by introducing two distinct dimensions. First, the consideration of the customer journey in a South Africa context amid a COVID-19 backdrop. This resembles the work by Kannan and Kulkarni (2021), who investigated customer journeys during the pandemic in the United States of America.

Second, it approached the analysis of the customer journey by emphasising factors intricately linked to OFOA usage owing to COVID-19, the influence on customer

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experience, and satisfaction of OFOAs, provided the pandemic. An improved understanding of the influence of COVID-19 on OFOA in a South African context would advance the research on customer experience concerning its conceptualisation and how to predict customer behaviour during these ever-changing times of unpredictability and volatility.

1.5   Organisation of this study

Chapter 1 briefly provided the topic's background, summarises the research purpose, and introduced the research problem. This chapter stated the motivation for the study, considering academic and theoretical needs.

Chapter 2 reviews the contextual perspective of the research problem and positions the academic literature within which the study constructs are grounded. It presents past literature on customer experience, OFOAs, the influence of COVID-19 on customer experience, and the influence of COVID-19 on the customer experience of OFOA users. These constructs are later reviewed through the theoretical lens of the customer journey (Lemon & Verhoef, 2016).

Chapter 3 introduces the research question and theoretical framework. The chapter concludes by presenting the hypothesis derived from literature and the conceptual model proposed for this study, which visually illustrates the hypothesis.

Chapter 4 contends with the relevance of the research methodology while providing detailed insight into the design of the research conducted to discuss the research question and empirically test the study's hypotheses. This chapter deliberates all methodological choices and provides the rationale for each choice made. The conclusion includes a discussion of the controls and limitations of the study.

Chapter 5 encompasses the presentation of the results of the data analysis process conducted and the statistical techniques and tests performed to discuss the research question and to test the hypotheses. This chapter concludes by summarising the results established during this study.

Chapter 6 interprets and discusses the results while presenting a summary of the theoretical information in the preceding chapters.

Chapter 7 presents the conclusion of the study by discussing the key findings and their relevance to the various stakeholders and future recommendations.

CHAPTER 2: LITERATURE REVIEW

2.1   Introduction

This previous chapter framed the context of the study, discussed the motivation of this study and details the importance of understanding the influence of COVID-19 on OFOA and the customer experience thereof. The rapid changes in consumer behaviour and their evolving expectations regarding the service offering within the food industry were positioned against the backdrop of the customer journey and various points of interaction with customers throughout this journey.

This chapter explores the literature and theories on customer experience, discussing the theory upon which this study is grounded, such as the customer journey map by Lemon and Verhoef (2016), further described in Section 3.2. The chapter presents literature defining and describing online food ordering applications, the influence of COVID-19 on customer experience, and finally, discusses the COVID-19 pandemic's implication on OFOA customer experience according to the research problem outlined in Section 1.3. This chapter reviews the applicable framework, supporting the contextual model of this research through the theoretical lens of the customer journey.

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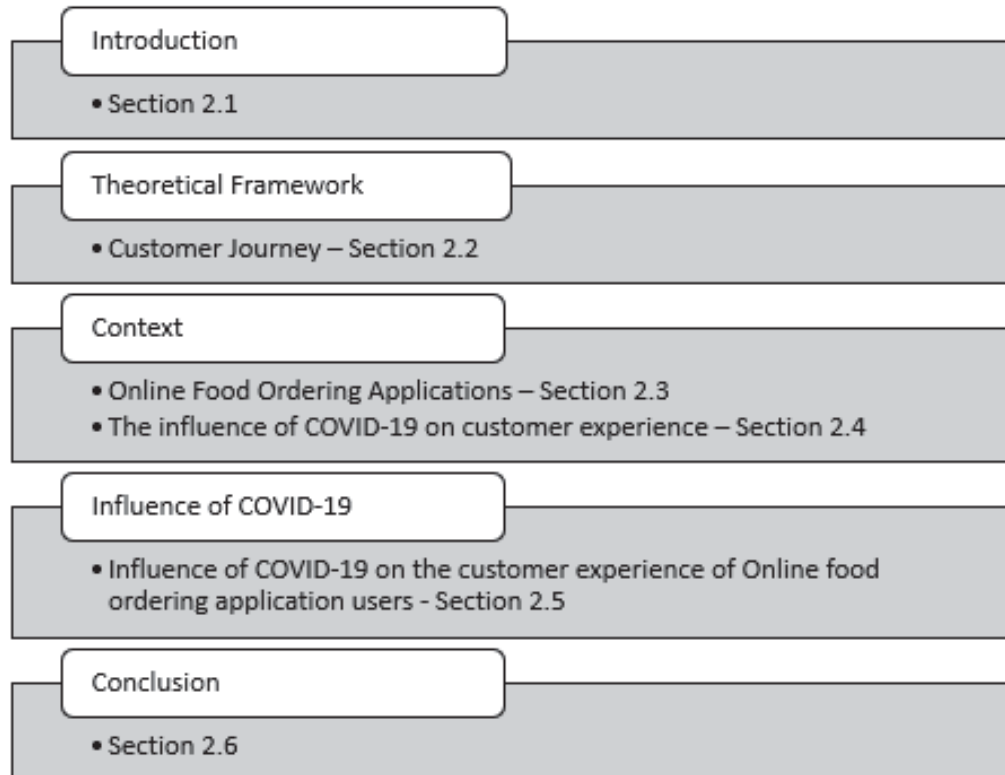
Figure 1: Literature review layout

2.2   Customer journey

The customer journey, which is defined as a sequence or process that customers follow to experience a business's offering (Tueanrat, Papagiannidis, & Alamanos, 2021), has grown more complex over the years, as today's customers constantly interact with businesses through various media platforms and channels (Lemon & Verhoef, 2016a). The consumer experience was characterised by customers' behaviour, which preferred interacting with products at a physical store by seeing, smelling, and even touching products they found there (Lindberg & Vermeer, 2019). Traditionally, the interaction between customers and businesses has been physical, where customer experience was more of a social nature (Hamilton et al., 2021). Immediate satisfaction when a customer picks up a product is a key milestone in the customer experience. However, this interaction has grown in complexity, having been digitalised in response to the scaling up of e-commerce.

Lemon and Verhoef (2016) define the customer experience as a "multidimensional construct focusing on a customer's cognitive, emotional, behavioural, sensorial, and social responses to a firm's offerings during the customer's entire purchase journey". Extensive research has been conducted to understand the theory behind the customer experience of Lindberg and Vermeer (2019); however, literature reflects a fusion of perspectives and not a particular customer journey school of thought yet exists (Følstad & Kvale, 2018; Rosenbaum et al., 2017; Varnali, 2019). Lindberg and Vermeer (2019) conclude that most literature on customer experience agrees with Lemon and Verhoef's (2016) definition. The customer experience is depicted as a linear process (Lemon & Verhoef, 2016a; Lindberg & Vermeer, 2019). The recurring themes are the importance of understanding the function of the consumer in the experience's construction itself, and when deconstructed, at the core of the customer experience lies the customer's emotional, physical, cognitive, affective, and social responses to a business's offering (Santos & Gonçalves, 2021; Varnali, 2019).

When observing the history of the customer journey, it first explored buyer behaviour in three parts, such as pre-purchase, purchase, and post-purchase. Similarly, Lemon and Verhoef (2016) observe the customer journey as an *iterative process* of customer experience and study the concept of a customer journey in the same three phases (Figure 2) with several interdependent touchpoints which feed back into the network of iterative interactions. The pre-purchase phase is the start or recognition of a need, goal, or impulse and transitions to the consideration of gratifying the need/goal/ impulse with a purchase (Lemon and Verhoef, 2016).

This phase is further characterised by further information search, evaluation of alternatives, and efforts to increase awareness before purchasing (Lindberg & Vermeer, 2019). The second phase includes all customer interactions with the product and its environment during the purchasing event. It is characterised by choice-making, ordering, and payment. Lemon and Verhoef (2016) indicate that this stage is compressed and has received much attention, especially from the marketing of interest. Myriad touch points, information and choice overload, purchase confidence, and decision satisfaction influence customers to stop searching and either complete or defer purchase.

The post-purchase phase is the final stage in the customer experience, where the customer interacts with the brand and its environment following an actual purchase. It is characterised by behaviours, such as usage and consumption, post-purchase engagement, and service requests. Some remarked that, at this stage, a trigger might occur that leads to customer loyalty begin the entire process again with the customer re-entering the pre-purchase phase and considering alternatives (Lemon & Verhoef, 2016).

Similarly, the customer journey has been described as a *holistic customer experience* encountered by a customer when interacting with a product or service that actively engages their cognitive, emotional, social, spiritual, and sensory responses to each distinct point of contact with a business, known as touchpoints (Bag et al., 2021). Edelman (2010) breaks down these touch points into the *iterative consumer decision journey,* where a consumer evaluates a product or service, buys, and, after that, enjoys, advocates, and bonds with the product or service. Lindberg and Vermeer (2019) also add that "a sequence of touchpoints forms a customer journey".

Touch points are defined as points of contact, specifically verbal and nonverbal incidents, during which the customer perceives a firm or brand (Leva & Ziliani, 2018). Lindberg and Vermeer (2019) added that touch points were points of interaction that stretch across stages rather than being confined to specific ones. This means they occur in a single instance and at a single point, and then it takes an entire sequence of them to allow a customer to take a journey that creates a customer experience (Lindberg & Vermeer, 2019).

Touch points are moments of contact between the customer and the company that individually and collectively influence customer experience (Lemon & Verhoef, 2016; Leva & Ziliani, 2018; Lindberg & Vermeer, 2019). The touchpoints are broken down into brand-owned touchpoints (managed and designed by the organisation), partner-owned touchpoints (interactions during the customer experience co-designed and controlled by the organisation and its partners), customer-owned touchpoints (customer actions not influenced by the organisation nor its partners) and social/external touchpoints (the function of externalities in influencing the process,

such as with COVID-19) (Lemon & Verhoef, 2016).

Brand-owned touch points include all brand-owned media, such as advertising, websites, and loyalty programmes. Packing, service, price, convenience, and product attributes are brand-controlled elements that make up brand-owned touchpoints. Partner-owned touch points involve partner marketing agencies, multichannel distribution partners, multi-vendor loyalty programme partners, and communication channel partners. Customer-owned touch points are most critical at the pre-purchase and post-purchase stages, where the customer is influenced by their own needs or desires and when consumption and usage are prominent (Lemon & Verhoef, 2016).

Social or external touch points include the influence of other customers, peer-influenced and prevailing environmental conditions. Social media and review sites, such as TripAdvisor, are examples of social/external touch points. Touch points characterise an effective customer journey to exhibit thematic cohesion, consistency, and context-sensitivity (Kuehnl et al., 2019). Lindberg and Vermeer (2019) established that customer experience is stored in the customer's memory to be used for repeat purchases and loyalty decisions. This, according to Lemon and Verhoef (2016), occurred at the post-purchase stage, where experiences triggered the re-entering back into the pre-purchase phase. Touchpoints are points of interaction that the wider world around us provides to make our cognitive task of deciding easier (Lindberg & Vermeer, 2019).

The swift development of information communication technology (ITC) and customer experiences are becoming more social (Alalwan, 2020). Firms have less control in directly influencing the customer experience and, therefore, shaping the customer journey. There is greater dependency on multiple business functions, such as marketing, information technology, and supply chain, to aid in creating a positive customer experience (Lemon & Verhoef, 2016). New-age customer journeys now entail a plethora of touchpoints across several channels and media, making it challenging to recognise customer behaviour and support it (Lemon & Verhoef, 2016; Varnali, 2019).

Along with these touchpoints in the customer journey, businesses derive the

customer's cognitive and affective responses and sustain competitive advantage (Varnali, 2019). (Lindberg & Vermeer, 2019) established that the digital world has unveiled new types of touch points and perpetuated using the traditional ones. They added digital touchpoints to make it easier to search for information, evaluate it, express recommendations and influence other consumers through feedback (Lindberg & Vermeer, 2019).

A literature search indicated limited research on how digital touchpoints for OFOAs were affected by the COVID-19 pandemic in South Africa. This study aimed to uncover which touchpoints within the customer journey of customers who adopted OFOAs were significantly affected by COVID-19; therefore, business owners can carefully curate such customer journeys to sustain this competitive advantage.

2.3   Online food ordering applications

Online food ordering involves ordering food from a website or smartphone application for delivery or pickup. The food is prepared by a restaurant or home kitchen as ready-to-eat or fresh products, such as vegetables, fruits, and frozen foods. A mobile ordering application is software designed to run on a mobile device and provide users with similar food ordering services to those established on a personal computer (PC) (Prabhu & Dongre, 2018). The first online food order, by Pizza Hut, was made in 1994 in America and has grown exponentially because of technological advancement and the convenience of customers.

Online food ordering substitutes conventional methods of ordering food physically at a dine-in restaurant and through a phone call among urban dwellers (Liu & Lin, 2020). In South Africa, it is estimated that there will be 22,2 million online food ordering users by 2027 (Statista, 2022a). Online food ordering enabled people to search, compare prices, and conveniently access food services (Farah et al., 2022; Liu & Lin, 2020).

Mobile food ordering applications have caused a significant change in food ordering and delivery in developed and developing countries (Farah et al., 2022; Liu & Lin, 2020). The development of online food order applications began in the late 2000s and has increased in popularity with the increased access and affordability of

smartphone devices (Brewer & Sebby, 2021). Smartphones, mobile Internet, and navigational services made it possible for customers to shop anytime and anywhere (Chai & Yat, 2019; Tandon et al., 2021). Leading companies and businesses have adopted applications as part of innovative online business strategies to increase sales and mitigate declining sales in traditional channels (Farah et al., 2022).

The OFOAs function as mediators between restaurants, catering enterprises and customers. OFOAs are the aggregator of menus, prices, and reviews, influencing the customer journey as the customers decide on which restaurant to place an online order with (Farah et al., 2022; Chai & Yat, 2019). Some OFOAs provide promotional offers and search results based on user order history, presenting an option for customers to provide feedback on consumed products (Chai & Yat, 2019).

OFOAs function as last-mile delivery players. by the restaurants or catering enterprises and or on behalf of partner restaurants offer the delivery service through third-party delivery networks and fleets. These include Uber Eats and Mr D, which provide an efficient and low-cost approach to food delivery (Kumar & Shah, 2021; Ramos, 2022). Third-party delivery services observed the need for restaurants to safeguard the brand's reputation, especially in late delivery or mishandling of customers' food (Liu & Lin, 2020).

The customised service provided by OFOAs leads to greater customer satisfaction (Prabhu & Dongre, 2018). Liu and Lin (2020) identified the advantages of OFOAs attributed to the exponential uptake among customers. They contended that customers received the entire menu at their fingertips, including items they may not have known existed, from anywhere at any time, without waiting in line or being put on hold. The convenience and swift ordering has the added benefit of delivery to the customer's doorstep or pick up of the food order on the go (Liu & Lin, 2020; Tandon et al., 2021).

This saves customers time who may not have time to cook (Farah et al., 2022; Prasetyo et al., 2021). Also, customers can make better food choices guided by other customers' ratings. The OFOAs also allow for the comparison of prices and influence decision-making on which cost-effective restaurant to order from (Zanetta et al., 2021). The applications have easy and safe payment methods with credit or debit

cards or cash. These are factors that led to increased popularity (Prasetyo et al., 2021; Vinaik et al., 2019).

Profiling of users of OFOAs has revealed that they are most inclined to be young, technologically savvy customers with busy lifestyles or work schedules, urban dwellers for whom food delivery presents a viable response to a fast-paced lifestyle (Prasetyo et al., 2021). (Zion & Hollmann, 2019) reported that in the United States, within an unspecified 90-day point in 2019, they established that using OFOAs was highest (63%) among young people aged between 18 and 19, followed by those between the age of 30-44, where 51% had used.

Only 14% of adults older than 60 used an OFOA during the time under investigation by Zion and Hollmann (2019). The study also established that users were more inclined to be low-income earners. Whereas in South Africa, Pophiwa et al. (2021) reported that young adults used the OFOAs more than the elderly; however, he remarked an increase in use among the middle-income elderly because of the COVID-19 pandemic. Middle-income earners were the most users in the South African study. There is limited literature on users of OFOAs and factors influencing use in South Africa, and this study recommends filling this research gap.

According to Zhao and Bacao (2020), OFOAs helped businesses survive the COVID-19 pandemic as online-to-offline (O2O) technology was widely adopted. The pandemic made it essential for the remaining businesses to transition to the rapidly growing digital platforms (Tandon et al., 2021). The uptake of OFOAs has undoubtedly transformed the way consumers interact with, and experience food suppliers (Kapoor & Vij, 2018; Shah, Yan & Qayyum, 2021; Dirsehan & Cankat, 2021), and this convenient way of ordering food for delivery has reinvented the customer's journey (Kumar & Shah, 2021). The OFOAs have transformed the interaction between consumers and suppliers, and consumer purchase decisions are now less linear and hierarchical, more complex, and increasingly shaped by society (Lemon & Verhoef, 2016).

Since OFOAs are the interface between restaurants and consumers, business owners must ask themselves what motivates consumers to continue using such platforms. The discourse of OFOAs is growing and is characterised by limited

empirical literature, especially in Africa. Much of the knowledge in literature is from developed countries. A need exists for further studies to generate knowledge of OFOAs in developing countries, particularly South Africa. This intent was studied and expanded on through applying the customer journey theory, known as the process any customer engages in across all stages and touchpoints with a brand or an organisation that comprises the customer experience (Lemon & Verhoef, 2016a).

2.4   The influence of COVID-19 on customer experience

Consensus exists in the literature that the COVID-19 pandemic has dramatically influenced customers' experience in all spheres of the commercial industry (Ali et al., 2020; Bag et al., 2021; Diebner et al., 2020; Haider et al., 2020; Kannan & Kulkarni, 2022; Zanetta et al., 2021). Kannan and Kulkarni (2021) postulated that the COVID-19 pandemic and related hard-lock downs and closures of businesses changed how consumers shop and consume products. COVID-19 altered the inability to collect safely but the perpetual desire for connection and entertainment. According to Kannan and Kulkarni (2021), this change is permanent. The authors used the utility theory to display how COVID-19 affected the customer experience on OFOAs and all online channels. They contended that customers' online shopping would become permanent, with some customers never returning to offline shopping, especially with eating at home.

COVID-19 pandemic has forced businesses to revise their approach to assessing customer journeys and satisfaction metrics (Kannan & Kulkarni, 2022; Ramos, 2022), shifting from what it is customers want to urgently identifying what customers need (Diebner et al., 2020). The outbreak of COVID-19 has had detrimental effects on the restaurant industry because, as customers changed lifestyles, they were forced to migrate to the digital platform from physical dine-in. Ali et al. (2020) estimated that sit-down traffic at restaurants globally reduced by 83% in 2020 compared to 2019.

The authors termed the COVID-19 epidemic a significant situational influence (Ali et al., 2020), contributing to the customer journey moving from existence within physical channels to contactless operations as a preferred method of engaging with business. Due to the pandemic, home delivery services have moved from convenience to

necessity (Diebner et al., 2020); therefore, the migration to digital owing to the pandemic should be observed by food business enterprises as an opportunity to adopt a customer-centric mindset which focusses on the user experience of OFOA, to boost savings and satisfaction.

Bag et al. (2021) explored the function of digital technologies or artificial intelligence on customer behaviour in India, which, like the rest of the world, had customer experience digitalised by COVID-19. The study's scope extended to other digital platforms used for online ordering and did not approach OFOAs specifically; however, the findings add value to the study under review, which has limited literature for discussion. It was established that customers had more access to information during the pre-purchase stage through social/external, brand-owned touchpoints. This included increased access to online engagement between businesses and customers through reviews, social media, and online advertising campaigns.

Social media was a significant touch point, triggering the three customer experience phases as described by Lemon and Verhoef (2016). It was used to gain product information and retain and persuade existing customers to repurchase, as customers were encouraged to post comments about their level of satisfaction with services rendered. Positive comments had a positive effect on the cognitive process of other users, which influenced their pre-purchase decision (Bag et al., 2021)

Understanding how customers receive and interact with a business's offering is crucial to its success. The customer journey has grown in significant importance within both the academic and business management landscape (Tueanrat et al., 2021). Understanding the customer journey and how COVID-19 affected it during the pandemic has the potential to unlock essential critical customer perspectives and how these have evolved because of the pandemic. It, therefore, becomes imperative to answer the question of how COVID-19 has influenced the customer experience, specifically the influence on the customer journey of OFOAs users.

The digitalisation of the food industry and the fast-paced living rhythm of urban dwellers reshaped the customer journey and behaviour of OFOAs (Farah et al., 2022). The traditional customer journey that Lemon and Verhoef (2016) described

as linear has been disrupted and is contended to be complex, webbed, and non-linear (Farah et al., 2022). The study is important because it is one of the few studies where the scope aligns with this research.

The OFOAs act as a constant ever-available touchpoint as part of online platforms, encouraging customers with brand messages and promotional material to initiate the pre-purchase stage of awareness and decision-making. The OFOAs have empowered customers through their journey by enabling easy comparisons of competitor offers. The authors added to their knowledge by modifying the model of Lemon and Verhoef (2016) developed a non-linear online food ordering consumer journey with three stages, such as awareness and consideration, purchase and retention, and advocacy (Figure 2).
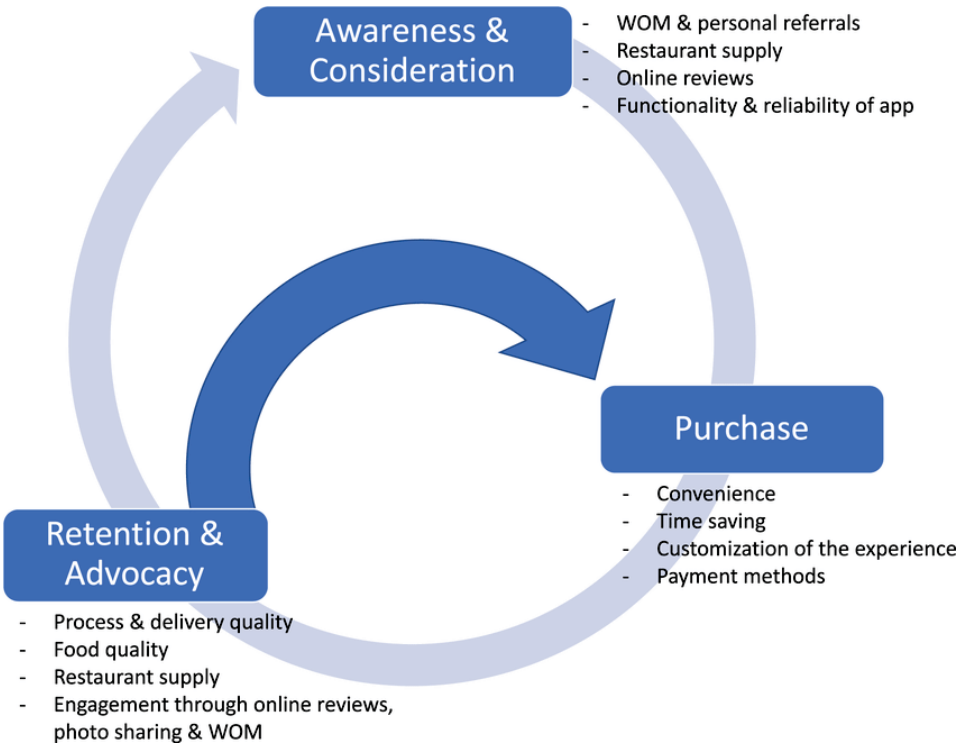
Figure 2: The online food ordering customer journey

Source: Farah, Ramadan and Kanso (2022)

The qualitative study by Farah et al. (2022) established that the awareness and consideration stage in the customer journey meant that in a few minutes and clicks, the customer could search through a wide range of restaurants, and check for reviews, ratings, and hygiene grades. The move to change the customer experience from traditional to digitalised (OFOAs) was mainly through word-of-mouth referrals. Once the customers have established the best option, they will smoothly move to buy the product and completing the purchase stage. The delivery and quality of food influenced the retention and advocacy stage of the customer journey. The stage was characterised by the extent of satisfaction, reviews, and triggers for a repurchase.

2.5 Influence of COVID-19 on the customer experience of online food ordering application users

Kumar and Shah (2021) established that the COVID-19 crisis resulted in consumers being excited to use OFOAs from the comfort of their homes while maintaining social distance and without conceding on safety. The pleasure arousal dominance demonstrated that aesthetics aroused emotions of enjoyment, arousal, and dominance in the customers' journey during a moment of crisis, resulting in increased usage of OFOAs. The texts appearance on the landing page, suitable colour combination, legibility, and clean wording was associated with positive emotions at the pre-purchase stage and determined loyalty at the post-purchase stage (Kumar & Shah, 2021). It was concluded that using the OFOAs during hard lockdown when several critical services ceased operating resulted in a greater sense of customer control and pleasure; therefore, COVID-19 influenced the three stages of customer experience (Lemon & Verhoef, 2016b).

Like Kumar and Shah (2021); Brewer and Sebby (2021) established how customer-owned touch points to the stressful conditions of the COVID-19 pandemic changed consumer behaviour and consumption patterns. During quarantine, people consumed more than before COVID-19 and were inactive, lonely, and stressed (Brewer & Sebby 2021). The stressful conditions influenced the perpetuation of the cyclical customer experience, as customers were less inclined to resist the urge to consume more food to make themselves feel better emotionally. The perceived risk of COVID-19 was significantly associated with increased use of OFOAs and the

desire for food (Brewer & Sebby 2021).

The authors concluded that the passion for food to make one feel better, service convenience, and visually appealing online menus positively influenced the three stages of the customer journey. Zanetta et al. (2021) also established that the perceived risk of COVID-19 influenced the customer experience, especially at the pre-purchase stage in the study conducted in Brazil. This was a similar finding to (Troise et al., 2020). Risk perception is an individual's assessment and understanding of the possible adverse outcomes that may arise from their decisions (Zanetta et al., 2021). Before COVID-19, customers were mainly concerned with the risk of the product not meeting their expectations, loss of product in delivery, loss of time, financial loss, and compromising data security and privacy. The COVID-19 period increased the fear of contamination risk through food, packaging, and contact with the delivery personnel at the time of delivery.

The framework used by Kumar and Shah (2021) emphasised mainly emotional factors such as arousal pleasure, and dominance as the studies moderators. Brewer and Sebby (2021) used both cognition (perceived convenience of online food ordering) and emotion (consumers' desire for food) to represent the internal states of the consumers. One of the study's major limitations was that a mock restaurant website and online menu were the basis of the study; however, the findings contribute meaningfully to the discourse on the influence of COVID-19 on customer experience with OFOAs.

Tran (2021) used the theory of planned behaviour to explore OFOAs during the COVID-19 pandemic. Similar to findings by (Brewer & Sebby, 2021; Kumar & Shah, 2021), Tran (2021) established that digitalisation in customer experience increased in Vietnam. The quantitative study established that social isolation, food delivery hygiene, and perceived food safety influenced customers' willingness to buy food through food delivery applications in the pre-purchase stage and influenced loyalty in the post-purchase stage.

The technology readiness model explored consumer behaviour among OFOA users during the COVID-19 pandemic in Pakistan (Ali et al., 2020). The pandemic is described as a situational influence that increased using OFOAs. The study

recommends that OFOAs service providers monitor their applications to routinely determine elements to improve or erode consumers' readiness to use them. Ali et al. (2020) echo (Brewer & Sebby, 2021; Kumar & Shah, 2021) in recommending using appealing visual graphics, creative logos, aesthetically appealing presentations, online videos, attractive displays of innovative products, and entertaining websites, to improve the customer journey.

Yang et al. (2022) focused on how youth food ordering patterns were affected by the pandemic in China. In line with the literature, the study established that the food ordering patterns were significantly affected during the COVID-19 lockdown and observed differences between gender and educational levels. The study used a retrospective study design that could be prone to recall bias and convenience sampling, which limits the generalisation of the results to the Chinese youth.

Poon & Tung (2022) echoed Kannan & Kulkarni (2022) that COVID-19 brought permanent changes in the customer experience, especially among first-time users of OFOAs; however, the study sought to understand the intentions to use one food delivery, not particularly of interest in this research; however, the study covered some touchpoints critical to consider in this study. It indicated how social touch points, such as COVID-19, influenced decision-making and how perceived risk can be a touch point during the pre-purchase stage, influencing the decision to buy or not to buy. First-time consumers were comfortable making purchasing decisions only when they felt comfortable with their products and services. The service providers' money back warranty and authenticity also acted as touch points influencing buying.

The available South African literature generalises the influence of the COVID-19 pandemic on the general customer experience. No literature explores the topic under study in South Africa. Limited literature specifically explores the influence of COVID-19 on the customer experience of OFOAs. However, some studies explored factors affecting the intention to use OFOAs. Prasetyo et al. (2021) established that hedonic motivation, price, information quality, and promotion were significantly associated with customer satisfaction and that there was no statistically significant relation with perceived ease of using the OFOAs.

Troise et al. (2020) established that subjective norms have more of an effect on

behavioural intentions than that which personal attitude has, and that the perception of risks related to COVID-19 have various effects. Therefore, the current research covers a significant gap in literature; however, available South African literature demonstrates that, as established in the studies in Vietnam, China, and other western countries, the COVID-19 pandemic increased the pace of digitalisation of customer experience, with 72% of the respondents to a survey by Salesforce (2021) reporting having used dedicated mobile applications and having had a high expectation of customer experience thereof. Pophiwa et al. (2021), despite a small sample, also postulated a general increase in e-commerce, especially among elderly consumers and the middle class.

Most studies employed a quantitative methodology to explore the influence of COVID-19 on customer experience with OFOAs (Brewer & Sebby, 2021; Chotigo & Kadono, 2021; Kannan & Kulkarni, 2022; Kumar & Shah, 2021; Tran, 2021; Yang et al., 2022). Though sufficient, a mixed-methods research design would have yielded more in-depth and rich insight into customers' perceptions, attitudes, and experiences using OFOAs. It is, therefore, recommended that more studies exploring the influence of COVID-19 on customer experience in using OFOAs be conducted using a mixed-methods research design.

2.6   Conclusion

Customer experience comprises the actions and behaviours of a customer, from searching to the initial intention to buy a product and the act of buying, consuming and disposing of the product (Farah et al., 2022). It includes the triggering of buying the products again after consumption. This is a linear model developed widely, adopted by scholars (Lemon & Verhoef, 2016). Farah adapted the model and developed a customer experience model specific to OFOAs, which he defined as non-linear, complex, and webbed.

The unprecedented COVID-19 pandemic saw an increase in the digitalising of customer experience as more customers were forced to use OFOAs. The hard lockdown caused the transition from physical to social channels, promoting positive customer experiences to digital experiences. This was for businesses that had not yet embarked on using online platforms. Using various frameworks such as the

Theory of Planned Behaviour (Tran, 2021) or Stimulus-Organism-Response model (Brewer & Sebby, 2021) which was used to forecast customer purchase intentions in an online food ordering context, literature demonstrated that the COVID-19 pandemic affected and influenced the customer experience of OFOAs (Chotigo & Kadono, 2021; Kannan & Kulkarni, 2022; Kumar & Shah, 2021; Yang et al., 2022). Customers have enhanced decision-making powers relating to cost-effectiveness with the ability to easily compare prices, time efficiency, convenience, satisfaction, and experience on offer.

CHAPTER 3: HYPOTHESES

3.1   Introduction

This study aimed to present OFOA and business owners with an increased understanding of the end users' technical and psychological perceptions. This was conducted using the customer journey and experience process model adapted from the seminal work by Lemon and Verhoef (2016).

3.2   Theoretical framework

Through understanding the phases of the customer experience and assessing the needs of the customer during COVID-19 pandemic, an updated customer journey map can realise strategies and see effective policies implemented. This is conducted by understanding the phases of the customer experience and assessing the needs of the customer because of the COVID-19 pandemic; this relates to not only the OFOA owners, but the business using such platforms to extend their services to an online audience. The goal of any business owner at this time of the pandemic is to garner the sustained support of consumers and study what will trigger the repurchase loop in this model is critical to achieving this goal, making this research relevant to business and a noteworthy contribution to the body of knowledge.
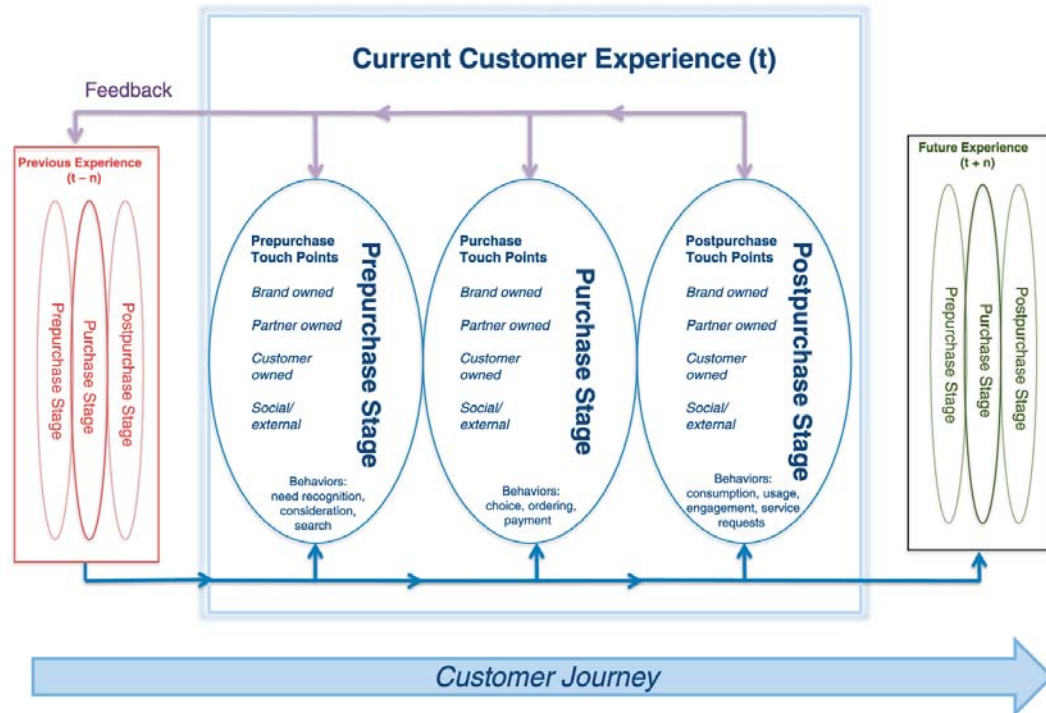
Figure 3: The process model adapted from Lemon and Verhoef (2016) depicting the customer journey and experience

Source: Lemon and Verhoef (2016)

3.3   Hypotheses

The process model supports the theory to apply to the research problem by critically reviewing the aspects of the customer experience and answering the research question. This was placed in the customer journey of OFOA users; the findings will contribute to the body of existing literature and industry knowledge. The objective of this study is, therefore, to determine the extent of the influence on the customer experience (customer journey) of OFOA users because of COVID-19 through testing the below hypotheses:

- Hypothesis 1: COVID-19 affected OFOA customer journey pre-purchase stage
- Hypothesis 2: COVID-19 affected OFOA customer journey purchase stage
- Hypothesis 3: COVID-19 affected OFOA customer journey post-purchase stage
- Hypothesis 4: COVID-19 affected OFOA customer experience

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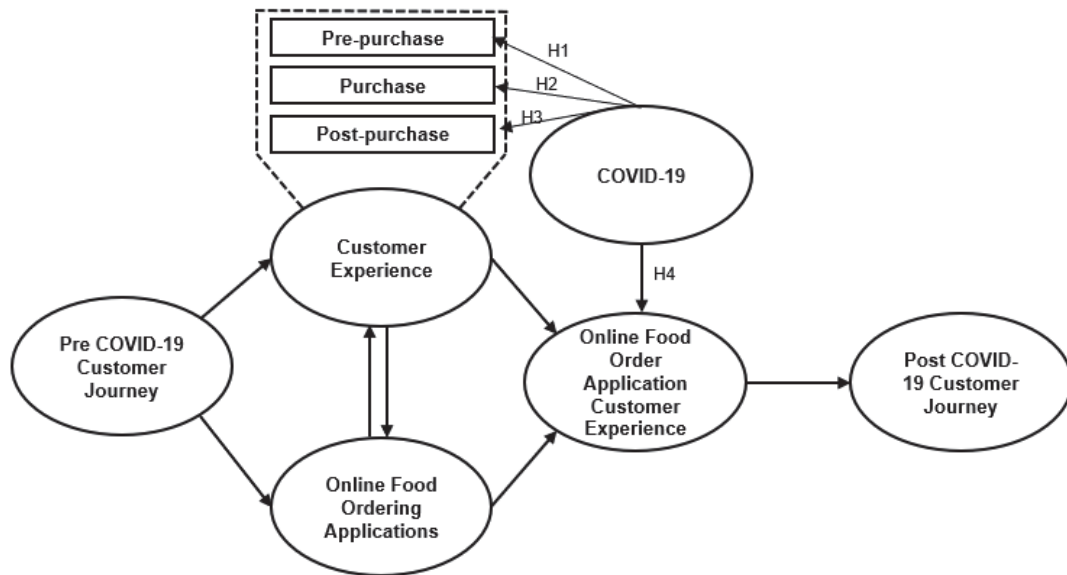
Figure 4: A proposed conceptual model

Source: Author's own (2022)

3.4   Conclusion

Three hypotheses were identified to analyse the influence of COVID-19 on customer experience and, therefore, the journey of OFOA users in South Africa. A conceptual framework was developed using prevailing literature, and the process, model adapted from Lemon and Verhoef (2016) depicting customer journey and experience. The subsequent chapter discusses the methodology selected for this research.

CHAPTER 4: RESEARCH METHODOLOGY

4.1   Introduction

This chapter outlines the research design to answer the hypotheses postulated in this study adequately. A quantitative approach was employed in this study to determine the influence that COVID-19 has had on the customer journey of OFOA users in South Africa. A quantitative approach was the most appropriate methodology for this research as it provided rich data insights that informed the future business strategies of OFOA business owners and stakeholders, such as the restaurant businesses using these platforms as a primary or secondary marketing and sales mechanism. This research was grounded in the literature hypothesised in the literature review in Chapter 2. The research is in a post-positivist paradigm, with the approach to theory development being deductive, stemming from the literature review conducted (Saunders & Lewis, 2017). In conclusion, quality controls, limitations and ethical considerations are presented.

4.2   Research philosophy

Research philosophy is a set of assumptions about how knowledge can be theorised, and it refers to how knowledge applies to a certain research topic (Saunders & Lewis, 2017). Five philosophies exist, including postmodernism, interpretivism, criticism, positivism, and pragmatism (Saunders & Lewis, 2017). This research was in post-positivism—both an epistemological and an ontological position. The branch of ontology and epistemology are philosophical studies interested in knowledge and the nature of human existence, respectively. The research processes this study followed included data collection, data cleaning, data analysis, data validation and reliability and an analysis of the limitations.

4.3   Research design

Research design is described as a detailed plan, outlining the methods, processes, and approaches pursued in collecting and analysing research data (Zikmund, 2010). A cross-sectional methodological approach was deployed in this research, using a self-administered, closed, online questionnaire. The reason for this research

methodology was that analytical surveys determine a more accurate understanding of the behaviours and perceptions of customers than any other data collection tool (Ramos, 2022). Questionnaire participants were customers experiencing the customer journey aspects from pre-purchase, purchase, and finally, post-purchase OFOAs in the time before and during the pandemic.

The research was cross-sectional because data were collected through a questionnaire at a single point using an online survey platform called Google Forms. This structured questionnaire (Appendix A) was developed by the researcher, adapting questions and themes from studies that were discussed in chapter 2 of this study. Primary data were drawn from residents in South Africa over 18 through online self-administered, anonymous questionnaires. This research drew its insight from descriptive statistics coded and categorised into relevant themes based on the literature review. Descriptive statistics along with structural equation modelling were conducted and used to assess the trends of association among the outcome variables.

The data collection time frame was eight weeks, and it ultimately took slightly over six weeks, with each questionnaire being conducted at a single point, assessing certain parameters or features of the participant at that provided point. Saunders and Lewis (2017) define cross-sectional research as information collected at a single point, more commonly from various demographic groups. The benefits of quantitative cross-sectional analysis are that variables can be analysed, for little to no cost, in a little time and owing to the limited time available to conduct this study under the Master of Administration (MBA) requirements and guidelines; a once-off survey was the most efficient way to collect the data quantity required for this study timeously.

4.3.1 Methodological choice

This study followed a mono-method, quantitative approach. This was achieved through a single data collection method, including structured, online, and self-administered questionnaires. This method enables the researcher to delve deeper into the research problem through insights collected from the questionnaire participants (Saunders & Lewis, 2017). The data collected from these questionnaires

were then analysed using quantitative structural equation modelling tools.

4.3.2   Purpose of research design

Saunders and Lewis (2017) describe an exploratory study as one which attempts to investigate the existence of a causal relationship among certain variables. A descriptive study is defined by Zikmund et al., (2010) as research that attempts to describe the features of a population and the inherent characteristics of a particular group, such as consumers. Provided that the study attempts to identify and describe the effects of the pandemic on the customer journey of South African OFOA users, the study can be classified as descriptive and explanatory, therefore, known as a descripto-explanatory study.

4.3.3   Research strategy

The strategy employed to analyse the research question is of vital importance, ensuring that the objectives of the research are always in sight and achieved (Saunders & Lewis, 2017). Drawing from the customer experience theory and journey, the proposed model was empirically tested using descriptive statistics and structural equation modelling. A survey is an adequately suitable method of data collection, particularly when drawing data from several participants (Saunders & Lewis, 2017). Further drawing on Saunders and Lewis (2017), the sampling linked to this strategy enabled the generation of findings, representative of an entire population. The research study proposed hypotheses which were analysed empirically through statistical methods. This proved that the quantitative methodology of survey questionnaires was the most suitable method for sourcing this study's data.

4.4   Population

Allen (2017) defines population as the object or event about which the researcher seeks knowledge. Critical for establishing a population is that the researcher is clearly steered towards establishing responses to the research question (James, 2018). South African residents of 18 years and above made up the research population. All respondents that were under the age of 18 were excluded. The study's

findings were generalised to the South African population. The population for this research was all users of OFOA who used the platform to order food products pre- and post-COVID-19.

4.5   Unit of analysis

According to Dolma (2010) unit of analysis analyses the entity being analysed in scientific research. Customer perception at an individual level was the focus of the analysis. The unit of analysis was guided by the research question and was affected by the hypothesis, variables, sampling method, and population (DeCarlo, 2018). The unit of analysis in this research was, therefore, at the level of each participant invited to participate in the online questionnaire used to collect data. Participants were those who used an OFOA either before, during, or after the pandemic and were 18 years or older. These were identified as best presenting information about their customer experience with the OFOAs in South Africa.

4.6   Sampling method and size

Because of the increasingly large number of South African users implementing mobile and online applications, accessing the entire population would be complex, impractical, and unfeasible, provided the timeframe and financial constraints of this research. The study, therefore, employed a non-probability sampling method, in particular convenience sampling, and a combination of purposive techniques accompanied by snowball sampling to ensure an adequate data set was collected for analysis (Saunders & Lewis 2017).

Saunders and Lewis (2017) defined purposive sampling as a non-probability sampling method where the judgement was used in selecting participants who met the sampling criteria to select the sample population. It is a method of selecting research subjects based on their knowledge and experience of the phenomenon under study (Robinson, 2014; Palinkas et al., 2015). It was determined that the sample's age needed to be over 18 years old, and the participants needed to have accessed an OFOA to contribute richly to the topic.

With snowball sampling, subsequent members of the population were identified and

volunteered by the earlier sample members (Saunders & Lewis, 2017) to obtain an appropriate and diversified sample. This meant that in this study, some of the population stood the chance of possibly being chosen, while others did not. Participants were requested to forward the questionnaire to other potential respondents. This may have been a limitation because the survey was purposively distributed to the researcher's network through their social and electronic media platforms.

Participants who used OFOA at least once during the COVID-19 pandemic provided 185 responses. This was a sufficient sample size to achieve the desired data outcomes for this study. These 185 participants each completed a self-administered, structured questionnaire online through a link shared by the researcher, which routed them to the Google Form created for this purpose. Respondents were all 18 years and above and residents of the Republic of South Africa. Anyone who did not meet the criteria relating to the above-stated was automatically eliminated from the research sample.

The sample was accessed through social media platforms, such as LinkedIn, WhatsApp, and Telegram, where links to the Google Forms platform were sent directly to individuals and groups. The template form was linked to the questionnaire with a request advising the participant on the purpose of the questionnaire and directing that they present consent for their response to be used in the study. The participant was advised that the survey could be completed in 10 minutes and that their responses were anonymous. The study aimed to provide a generalised observation of demographics across the country; however, a limitation was that most participants were based in Gauteng.

4.7   Measurement instrument

A questionnaire is an instrument of data collection made up of questions to collect information from research participants (Abawi, 2017). A questionnaire has the advantage of increased speed in data collection, is low-cost, and is more objective in data collection (Roopa & Rani, 2012). Saunders and Lewis (2017) remark that a questionnaire enables the opportunity for the same questions to be directed to several participants. Owing to the descripto-explanatory nature of this research,

there was a need for various respondents to answer the same questions as the study analyses their perception of the effect that COVID-19 has on their customer experience of OFOA. In some cases, online questionnaires can be manipulated by respondents who do not present their honest information in sections such as those regarding demographics.

Some people may commit survey fraud to receive incentives; this study offered no incentives to respondents. A self-administered, closed, online questionnaire was used to draw data from adult residents in South Africa 18 years and above, and rating scale questions were predominantly used for the questions directed in this survey as the study collected opinion data from respondents. In particular, a Likert-type scale questionnaire was selected to measure the respondents' answers, and the choice of the instrument was a five-point Likert-type scale to rate each variable (Table 1).

Table 1: Five-point Likert-type scale

Descriptor	Scale
1	Strongly disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly agree

Kline (2011) suggests that the Likert-type scales between five and ten points are mostly ideal for enabling survey participants the opportunity to distinguish between the scale values easily. This specific questionnaire was designed using a five-point Likert-type scale, ranging from "strongly disagree" to "strongly agree". Fewer scales were the preferred option as they increased the completion rate, the higher-point scales owing to less time, less effort, and less possibility for error.

The questionnaire was designed using Google Forms, allowing an individual to maintain a standard template and easily manage the data after collection. This was downloaded onto an Excel sheet once the questionnaire was concluded.

The questionnaire contained a preamble on the first page which advised the respondents of the academic questionnaire and advising them of the anonymity and confidentiality where their responses would be handled. The respondents were also advised that they could quit the survey at any point, and a provision for explicit consent to participate was also included on this landing page. As the survey was meant for people 18 years or older, a control question was included, which required respondents to confirm their age, and if they were below 18 years of age, the survey would automatically close.

Where the respondents advised they were of age, the questionnaire was moved through to section 1, which included four demographic questions; thereafter, the questionnaire would move to section 2, which covered the themes regarding customer journey in a total of 6 questions; section 3, which examined OFOA was composed of 10 questions; and the last section which was based on questions about COVID-19 influence and had a total of 10 questions.

The data collected from the participants using this questionnaire can be analysed and used to test the hypotheses and theories of this study empirically, much like previous studies that investigated OFOA customer experience or customer intentions of OFOA usage (Ray, Dhir, Bala, & Kaur (2019). The survey questionnaire was a preferred tool for data collection and the measuring instrument was compiled by the researcher and as such not previously validated.

4.8   Pre-test

Emphasis was on the quality of the data collected in this study and several rigours applied to the data collection process. A pre-test questionnaire was conducted with six respondents who were fellow academic peers of the researcher. This was conducted to ascertain the relevance and clarity of the questionnaire and provided that the questionnaire was to be conducted online and self-administered by the respondents (Saunders & Lewis, 2017).

The pre-test allowed for necessary amendments to the questionnaire, based on the feedback received from the six participants. The participants provided written and verbal feedback through emails or a mobile phone call. They confirmed that the

survey did not take more time to complete than stipulated in the questionnaire. The feedback also included details on grammatical errors, which were ultimately corrected and one concern with numbering, and it was also flagged that a question meant to only allow for a single response had the option for multiple responses. As this pilot was conducted with peers in academia, the researcher was certain that the feedback received was honest and applicable.

After the final corrections and minor changes to the answering option, the final approval from the ethics committee was received, and the data collection process could process.

4.9   Data collection

Data collection was conducted in South Africa through a quantitative, mono-method self-administered online survey created and disseminated via Google Forms. The questionnaire was a useful and effective tool for data collection from various sources where the same sequence and structure of questions was used and constructed on Google Forms owing to its user-friendly interface and cost-effectiveness. The data were then collected through a Google Form hypertext link embedded into a message template sent to respondents through online media platforms, including WhatsApp, Instagram, Telegram, and LinkedIn, to the researcher's direct contact list and network. Respondents were redirected with a link to the Google Forms landing page of the questionnaire, which had the informed consent letter detailing the purpose of the study, the time it would take to complete the survey, and a statement indicating that the survey is anonymous and voluntary.

The actual data collection process started on 4 August 2022, and the questionnaire was officially closed on 19 September 2022; 185 qualified participants responded to the questionnaire by the end of the six-week period where the questionnaire was open. Potential obstacles to the data collection process were delayed or incomplete responses; however, this was managed by sending several questionnaires out to potential respondents and ensuring all questions were compulsory to answer with no open-ended questions in the instrument. No incomplete responses in the entire data set were received, as all questions were compulsory to answer. The data collected during this process are stored for 10 years on the cloud platform known as Google

Drive in a folder only accessible to the researcher and then demolished electronically.

4.10   Data analysis approach

The collected empirical data was exported from Microsoft Excel to IBM Statistical Package for Social Science (SPSS) Version 28 for descriptive statistics and correlation matrix and to Smart PLS Version 4 for the structural equation modelling partial least square (SEM-PLS) for confirmatory validity, reliability, and relationship analysis. Initially, the data were assessed for missing values using a threshold of 5% to remove responses with high levels of missing values, as this can create a bias in the analysis (Alruhaymi & Kim, 2021). After which, the data were screened for extreme outliers using z-scores with values outside the threshold of ±3.29, regarded as extreme outliers (Ghasemi et al., 2012). The last screening test was Harman single factor test using the principal factoring axis, was conducted to determine the common method bias with a value less than 50%, indicating there was no common method bias (CMB), whereas a value higher than 50% indicating CMB (Podsakoff et al., 2003).

The next analysis was that of the profile of the respondents and descriptive statistics of the study's constructs. Saunders and Lewis (2017) define descriptive statistics as statistics that summarise the distribution of data values, and they can compare variations in data series. This helps gain a meaningful understanding of data distribution. Descriptive statistics allow data to be presented organised by giving the relationship between the variable and the sample. For the profile of the respondents, frequency and percentage frequency was used, whereas, for descriptive statistics of the respondents, the mean was used to determine the central tendency, whereas standard deviation was used to determine the spread. The correlation matrix of the construct was analysed to determine the statistical significance, $p<.05$ and $p<.01$, and the direction and strength of the correlations (Cohen, 1988).

4.11   Normality

Skewness and kurtosis of each item in each construct according to the recommended guidelines of -2 to 2 determined if the data were normally distributed.

The normality of the summated scales was then analysed and confirmed with the Shapiro-Wilk, W test used to determine the statistical significance of deviation from a normal distribution. The results of the normality with the size of the sample of 185 respondents, as well as the statistical objective of the study being that which is predictive, indicated that the PLS-SEM was the most suitable model of analysis, as opposed to structural equation modelling covariance (CB-SEM) (Hair et al., 2017). In addition to this, the user-friendly interface of PLS-SEM software, and extensive options for graphical analysis add to PLS-SEMs attractiveness as a tool (Hair et al., 2017).

Through visualisation and model validation, structural equation modelling, or SEM, is typically employed to accomplish the goal of concurrently explaining several statistical correlations. SEM is a method that combines factor analysis with multiple regression analyses simultaneously (Sarstedt et al., 2021). The goal of SEM is to gain an understanding of the relationship among latent constructs (factors) often expressed by several metrics. To determine the statistical significance of the relationship of the constructs, the bootstrap method was used to obtain the path coefficient, with t-statistics of higher than ±1.96 and $p < .005$ confirming the significance of the relationship.

4.12   Quality controls – reliability and validity

The research ensured that the data collected were valid, reliable, and could be transferred to other studies. Part of the measures employed to ensure validity and reliability is Taherdoost's validity test. This test includes face validity, enabling a subjective judgement on the operationalisation of the survey questionnaire. This means the questionnaire needs to outline precisely how concepts would be measured through indicators, such as social function (e.g., breadwinner, father, etc.) (DeCarlo, 2018).

The researcher can, therefore, subjectively assess whether the questionnaire is relevant, reasonable and unambiguous (Oluwatayo, 2012). The face validity tests were conducted during the construction of the survey questionnaire, with the pre-test. Six questionnaires were sent to potential respondents to confirm their alignment with the study's objectives, their ease of understanding and assessment of

grammatical errors, with the recommendations in the final questionnaire. The face validity tests were conducted during the construction of the survey questionnaire, with the pre-test. Six questionnaires were sent to potential respondents to confirm their alignment with the study's objectives, their ease of understanding and assessment of grammatical errors, with the recommendations in the final questionnaire. The objective of the survey questionnaire is to collect relevant information reliably on the phenomenon under study. Taherdoost (2016) remarks that accuracy and consistency are crucial in the research methodology.

Provided this study and the questionnaire data, comprising multiple variables, the need to reduce the observed variables into smaller groups became apparent in the data analysis. Factor analysis was then performed through statistical techniques. The statistical techniques appropriate for this purpose were exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), as further described below in this section. Provided the lack of a good fit for the EFA mode, the research progressed to CFA, seeing as the research adopted certain scale items from previous literature and the factorability of the items into the research constructs needed to be confirmed.

The empirical data collected were analysed for construction validity, with EFA. In this phase, the principal component analysis was conducted using VariMax rotation to obtain factor loadings (λ), where Kaiser-Meyer-Olkin (KMO) was used for sample adequacy, and Bartlett's test was instated to sphericity determine the suitability of the test, and the acceptability with communalities (Shrestha, 2021). The extracted constructs were analysed for reliability using Cronbach's alpha of 0.6, considered an acceptable lower limit level of reliability (Pallant, 2001). Cronbach's alpha is expressed as a number between 0 and 1, where values between 0.6 and 0.7 are acceptable at lower limits (Tavakol & Dennick, 2011). Reliability focuses on the ability of the research instrument to measure consistency. Internal consistency focuses on the extent to which items in a test measure the same concept. The acceptable constructs were then analysed in PLS-SEM. This was the CFA step using PLS-SEM.

The convergence validity was analysed with average variance extracted (AVE) with AVE at 0.5 or higher, indicating convergence validity (Pahlevan, Naghavi & Sharif,

2022). The construct reliability was tested using composite reliability (CR) (rho_c), composite reliability (rho_a) and Cronbach's alpha with an acceptable minimum of α ≥0.7, indicative of the reliability of the scales in measuring the constructs intended to be measured. The discriminatory validity was then analysed using cross-loading and heterotrait-monotrait ratio (HTMT). Cross-loading determines if there is a distinction between the level of loading of an item or variable to a particular construct with HTMT using a threshold of 0.85 to confirm the discriminatory validity of the constructs (Kline, 2011). Below are equations which show how composite reliability (CR), convergent validity (AVE) and discriminant validity (HTMT) were calculated (Hair et al., 2017).

$$Composite\ Reliability\ (CR) = \frac{\Sigma(\gamma)^2}{\Sigma(\gamma)^2 + \Sigma(1 - \gamma)}$$

$$Average\ Variable\ Extracted\ (AVE) = \frac{\Sigma(\gamma^2)}{Number\ of\ items}$$

$$Discriminant\ validity = \sqrt{AVE}$$

4.13   Ethics

Ethical conduct and other considerations are paramount to the successful undertaking of a research project. Ethical clearance was obtained under the Gordon Institute of Business Science (GIBS) Ethical Committee requirements before data collection (Appendix B) for ethical clearance approval confirmation. One measure implemented was to include a consent statement at the beginning of the questionnaire to present to the participant the confidence that their responses would be kept anonymous. It would be handled with the utmost confidentiality as the participation was voluntary with the option to withdraw from the questionnaire with no penalties imposed. The ethical application included the research methodology, design, data collection method, and the proposed data collection instrument. To maintain academic integrity throughout this research, the researcher has refrained from plagiarism and acknowledged all concepts, thoughts, and ideas from other authors using the appropriate and recommended referencing techniques (Kumar, 2018).

4.14   Limitations of the study

Considering the intention of the study and its contribution to academia and the business world, the context of the study is that of South Africa could pose a limitation regarding its applicability in other geographical markets or when other researchers attempt to cite this study. Another limitation would be that the survey instrument was available online only, causing selection bias or even a possibility of sampling bias owing to the number of respondents (Doyle et al., 2016). The possibility that the instrument may not have captured the constructs of the study well enough may also pose a limitation. The purposive sampling techniques and non-probability were a limitation to this study as participants may not be an accurate representation of the entire target population, therefore, causing a purposive bias.

4.15   Conclusion

This chapter aims to detail the methodology that this research used to assess the validity of the relationships among variables postulated regarding the influence of COVID-19 on OFOA user customer journeys. The descriptive-explanatory nature of this study provides reasonable insight into identifying these existing relationships and their extent. This was supported by the quantitative data collected through the self-administration of online questionnaires by respondents who voluntarily participated. The next chapters explore the data collected and analysed through this questionnaire.

CHAPTER 5: RESULTS OF THE STUDY

5.1   Introduction

The research investigated the extent of the influence of COVID-19 on the customer experience of OFOAs in South Africa. The empirical data comprised 185 responses collected from a cross-sectional descriptive quantitative survey (Saunders & Lewis, 2017). The data were used to test the four hypotheses developed in Chapter 3.

This chapter presents the results of the data analysis, starting with an approach to screen and clean the data, followed by the respondents' profile and using an online food application. This is followed by the descriptive statistics of the variables and then the measurement model to determine the validity and reliability of the constructs. COVID-19 influence, online food ordering and customer journey. The next section tests the hypothesis using a structural equation modelling partial least squares (PLS-SEM) to determine the relationships and test the hypotheses. The chapter summarises the results and then discusses them further in Chapter 6.

5.2   Screening and cleaning of empirical data

The data were initially assessed for missing values, and there were no issues established with the completeness of the data (Alruhaymi & Kim, 2021). This was followed by assessing the extreme outliers using z-scores according to the guidelines of ±3.29 (Ghasemi et al., 2012). None of the variables had extreme outliers, with the three highest z-scores from variables 'my overall online food ordering applications customer journey/experience has been negatively affected by COVID-19' (z = 2.469); COVID-19 has reduced the quality of service I experience while using OFOAs (z = 2.018); COVID-19 affected the pre-purchase touchpoint in my customer journey negatively (z = 1.694).

The Harman single factor test with the principal factoring axis was conducted to determine the common method bias (CMB) which determines the measure of variance in each of the responses gathered; these variables indicated a single factor which accounts for most of the covariance among measures. The total variance was 15.44%, considerably lower than the recommended threshold of 50%, and this

indicates there is no CMB in this empirical data (Podsakoff et al., 2003).

5.3   Sample description

5.3.1   Biographical information

All respondents in this research were 18 years or older. Figure 5 represents the ages of the sample, with the highest number of participants being part of the age group 25 to 34 years, comprising 56.22%, followed by the age group 35 to 54, which was 36.22% and equally for the age group 18 to 25 years and older than 55 years—both with 3.78% of the total respondents.
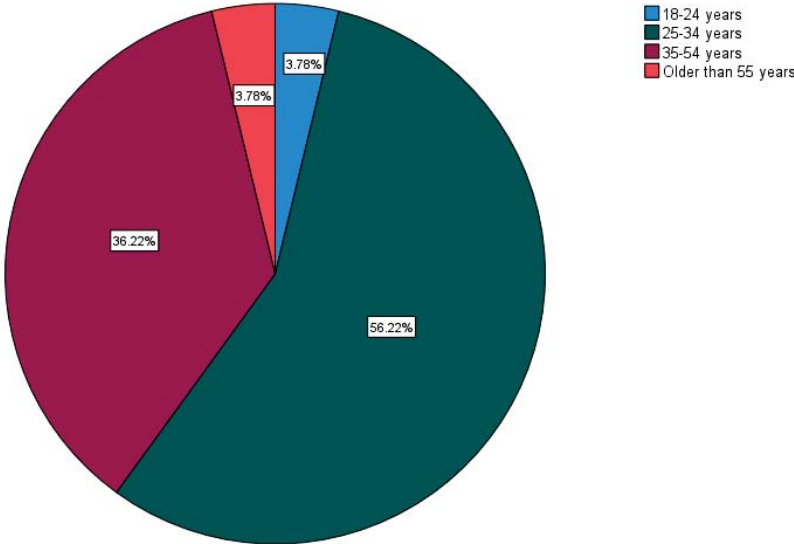
Figure 5: Age distribution of sample

Figure 6 below depicts how most respondents were females, constituting 68.65%, whereas the males were 31.35%.
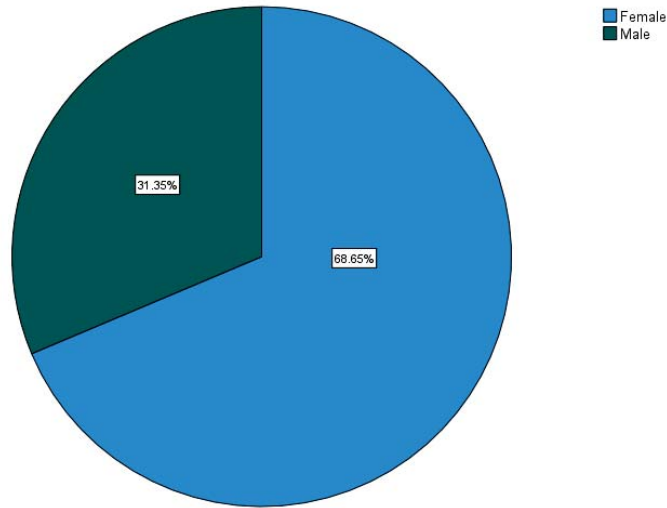
Figure 6: Gender distribution of the sample

These respondents were biased towards the highly educated group, and Figure 6 demonstrates how the sample was split with 95.68% all having a tertiary qualification, with 2.78% in possession of a secondary education, whereas 1.62% specified another category. Within these respondents, there was a fair distribution of the number of members in the household. A quarter of the respondents indicated there were two members of the household (25.41%), whereas 21.62% were three in the household. Respondents with four and five members in the households were 17.30% and 16.76%, respectively, whereas there were households with only one member 15.14% (Table 2).

Table 2: Summary of biographic information of the respondents

Variables		Frequency (n)	% Frequency
	18 – 25 years	7	3.78
Age group	25 – 34 years	104	56.22
	35 – 54 years	67	36.22
	Older than 55 years	7	3.78
	Female	127	68.65

Variables		Frequency (n)	% Frequency
Gender	Male	58	31.35
	Secondary	5	2.78
Highest level of education	Tertiary	177	95.68
	Other	3	1.62
Number of members in the household	1	28	15.14
	2	47	25.41
	3	40	21.62
	4	32	17.30
	5	31	16.76
	6 or more	7	3.78

5.3.2   Use of online food ordering applications

The usage of the online food ordering applications by the respondents was assessed by understanding the frequency of use of OFOA, a device used to access online food ordering applications and usage of OFOA levels since the start of the COVID-19 pandemic (Table 3). The results in Table 3: Usage of online food ordering applicationsshow that 36.22% of the respondents used OFOA at least once a week, whereas 29.73% and 23.23% used it at least once a month and at least two to three times a week, respectively. Only 7.03% used the OFOA once a year, and 3.78% used the OFOA every day. The devices mostly used to access the OFOA were Apple mobile devices (60.00%), followed by Samsung mobile devices (25.41%). This emphasised that mobile devices were the devices of choice to access the OFOA. In understanding whether there was an increase in using OFOA since the start of the COVID-19 pandemic, three-quarters (75.68%) of the respondents acknowledged that they had increased the usage of the OFOA, whereas 15.14% indicated that it remained the same, while 9.19% were not sure if there was a change in the level of usage.

Table 3: Usage of online food ordering applications

Variable		Frequency (n)	% Frequency
Frequency of use OFOAs	At least once a day	7	3.78
	At least two to three times a week	43	23.24
	At least once a week	67	36.22
	At least once a month	55	29.73
	At least once a year	13	7.03
Device used to access OFOAs	Apple mobile device	111	60.00
	Samsung mobile device	47	25.41
	Other	20	10.81
	Personal computer/laptop	4	2.16
	Work on a computer or laptop	3	1.62
Usage of OFOAs levels since the start of the COVID-19 pandemic	Yes	140	75.68
	Maybe (not sure)	17	9.19
	No	28	15.14

5.4 Descriptive statistics and normality distribution of the data

Table 4 presents the descriptive statistics, with the statements and their code focusing on the mean for central tendency, the standard deviation for dispersion and skewness, kurtosis, and Shapiro-Wilk for the normality distribution of the data. The means are based on the outcome of the statement analysis, which employed a 5-point Likert scale, with 1 indicating strongly disagree while 5 strongly agree. The statement the respondents mostly agreed on had a mean, M > 4.0. The highest statement the agreed with was 'I consider the purchase experience a critical part of my total customer journey/experience' (P exp) with mean, M = 4.395 (SD = 0.873) followed by the statement 'I consider the post-purchase experience a critical part of my total customer journey/experience' (Pop exp) with M = 4.378 (SD = 0.901). The third highest statement was, 'I consider the pre-purchase experience a critical part of my total customer journey/experience'. (Prep exp), M = 4.141 (SD = 1.049). All these statements that the respondents mostly agreed with related to their total customer journey or experience.

Table 4: Descriptive statistics

Ref	Variables	Item	Mean	Std. Dev.	Skew.	Kurt.	W	p-value
1	I consider the pre-purchase experience a critical part of my total customer journey/experience.	prep_exp	4.141	1.049	-1.303	4.234	0.921	0.000
2	I consider the purchase experience a critical part of my total customer journey/experience.	p_exp	4.395	0.873	-1.592	5.349	0.865	0.000
3	I consider the post-purchase experience a critical part of my total customer journey/experience.	pop_exp	4.378	0.901	-1.352	4.029	0.913	0.000
4	I consider the pre-purchase experience more important than the purchase and post-purchase experience of my customer journey.	prep_imp	3.411	1.209	-0.235	2.037	0.993	0.562
5	I consider the purchase experience more important than the pre-purchase and post-purchase experience of my customer journey.	p_imp	3.681	1.138	-0.552	2.477	0.982	0.017
6	I consider the post-purchase experience more important than the pre-purchase and purchase experience of my customer journey.	pop_imp	3.724	1.24	-0.615	2.306	0.98	0.010
7	I typically use more than one OFOA.	ofoa_num	3.222	1.474	-0.212	1.644	0.99	0.239
8	I am satisfied with my OFOA customer journey/experience.	ofoa_satis	3.681	0.921	-0.415	2.744	0.978	0.005
9	The OFOA I use influences my pre-purchase experience significantly.	ofoa_prep	3.897	1.05	-0.866	3.215	0.959	0.000
10	The OFOA I use influences my purchase experience significantly.	ofoa_p	4.049	1.028	-1.15	4.031	0.934	0.000
11	The OFOA I use influences my post-purchase experience significantly.	ofoa_pop	3.762	1.15	-0.6	2.505	0.979	0.007
12	The OFOAs' customer experience influenced the decisions I made pre-COVID-19.	ofoa_overall	3.422	1.266	-0.346	2.059	0.992	0.395
13	OFOAs significantly influence the decisions I make throughout my customer journey today.	ofoa_decision	3.762	1.141	-0.582	2.454	0.979	0.007
14	COVID-19 has changed my expectations of OFOAs.	cov_expect	3.908	1.164	-0.794	2.634	0.966	0.000

Ref	Variables	Item	Mean	Std. Dev.	Skew.	Kurt.	W	p-value
15	COVID-19 has increased my usage of OFOAs.	cov_ofoa_inc	4.076	1.240	-1.173	3.139	0.933	0.000
16	COVID-19 has reduced the quality of service I experience while using OFOAs.	cov_ofoa_dec	2.557	1.211	0.365	2.166	0.987	0.096
17	My OFOAs customer journey/experience has been negatively affected by COVID-19.	ofoa_cov	2.249	1.115	0.798	2.936	0.965	0.000
18	My impression of the OFOAs has improved since the beginning of the COVID-19 pandemic.	ofoa_imp_cov	3.843	1.023	-0.539	2.428	0.97	0.001
19	My impression of the OFOA partners and restaurant businesses who make use of the platform has improved because of the COVID-19 pandemic.	ofoa_bus	3.865	0.988	-0.541	2.428	0.979	0.006
20	COVID-19 affected the pre-purchase touchpoint in my customer journey negatively.	cov_prep_tp	2.87	1.257	0.262	2.025	0.99	0.244
21	COVID-19 affected the purchase touchpoint in my customer journey negatively.	cov_p_tp	2.908	1.271	0.205	1.958	0.991	0.338
22	COVID-19 affected the post-purchase touchpoint in my customer journey negatively.	cov_pop_tp	2.935	1.232	0.194	2.055	0.994	0.614
23	Before COVID-19, I was not aware of the influence of OFOAs on my decisions throughout the customer journey.	cov_ofoa_aware	3.141	1.286	-0.171	1.960	0.995	0.802

The other two statements with a mean higher than 4.0 were 'COVID-19 has increased my usage of online food ordering applications' (cov_ofoa_inc), M = 4.076 (SD = 1.240) and 'The online food ordering application I use influences my purchase experience significantly' (ofoa_p), M = 4.049, SD = 1.028. These statements consider the usage of OFOA, acknowledging the increase in usage of online ordering applications and indicating that OFOA significantly influences the purchase experience.

In contrast, there are statements with a mean of less than 3.0, which is low. These respondents disagreed with the statement that their "Overall online food ordering applications customer journey/experience has been negatively affected by COVID-

19" (ofoa_cov), where M = 2.249 (SD = 1.115). Respondents also disagreed that COVID-19 has reduced the quality of service they experienced while using OFOAs, (cov_ofoa_dec) where M = 2.557 (SD = 1.211). The other variables that respondents disagreed with were that COVID-19 had affected the pre-purchase touchpoint in the respondents' customer journey negatively (cov_prep_tp), M = 2.87 (SD = 1.257); COVID-19 had impacted the purchase touchpoint in their customer journey negatively (cov_p_tp), (M = 2.908, SD = 1.271) and COVID-19 impacted the post-purchase touchpoint in their customer journey negatively (cov_pop_tp), (M = 2.935, SD = 1.232).

A test for normality was examined by observing the skewness and Kurtosis of the items in each construct to elucidate the spread of the data and its distribution. This was based on the guidelines that recommend values between -2 and 2 (George & Mallery, 2010), the variables had a mixture of normally distributed and non-normally distributed data as the skewness ranged from -1.592 to 0.798, whereas the Kurtosis ranged from 1.644 to 5.349. The final factors for analysis were established through the CFA and EFA processes outlined in the prior sections of this research. Further tests for normality were conducted; these results were confirmed with Shapiro-Wilk, W statistical analysis, used to examine how close a sample data fit a normal distribution and where the result indicated that 15 out of the 23 variables were non-normally distributed with $p < 0.05$, whereas the other eight were normally distributed. The variables normally distributed included prep_imp, ofoa_num, ofoa_overall, cov_ofoa_dec, cov_prep_tp, cov_p_tp, cov_pop_tp and cov_ofoa_aware.

5.5 Multivariate analysis - validity and reliability

5.5.1 Customer journey

The factor analysis results will not be useful for data analysis if the standardised factor loadings are not greater than 0.5 and the extracted average variance to confirm convergent validity also greater than 0.5 (Hair et al., 2017). If the sample size is between 100 and 200, according to this study, the communalities of the retained items are acceptable if the average value is between 0.5 and 0.6 (Shrestha, 2021). When the value of communality is high, the extracted factors adequately explain the item's variance (Tavakol & Wetzel, 2020). Testing these variables for reliability, all had a Cronbach alpha, $\alpha < 0.40$. And owing to the construct not meeting the 0.60 criterion set by Hair et al. (2017), who advised a criterion of 0.60 to 0.70 as the lower limit for acceptable reliability, the customer journey phases as a construct did not yield a finding were not used further in the analysis.

5.5.2 COVID-19 influence

Ten variables in the questionnaire (ref 14 – 23 in Table 4) assessed the influence of COVID-19 on the customers. An EFA was conducted on these variables using principal components with Varimax rotation. EFA is a multivariate statistical analysis that has emerged as an essential instrument when developing and validating measurements (Watkins, 2018) which in this case was necessary as the survey questionnaire had not been compiled using already validated questionnaires, albeit guided by academic articles which researched very similar topics. The results of the KMO = 0.743 and Bartlett's test for sphericity, $\chi2$ = 606.1 df = 45 p <.001, confirmed the suitability of the EFA for the data. The analysis resulted in the extraction of three variables, COVIMP1, COVIMP2 and COVIMP3, with a cumulative extracted variance of 66.34%, COVIMP1 was the COVID influence on the customer journey touch points and had four items, cov_p_tp, cov_prep_tp, cov_pop_tp and cov_ofoa_aware with loading factors ranging from 0.468 to 0.873. All these loading factors were higher than the threshold of 0.3, which denotes a moderate correlation between the item and the factor (Shrestha, 2021). This factor had a percentage variance extracted of 25.20%, with an Eigen value of 2.889.

This Eigen value was greater than 1 and thus significant. The factor was reliable, with a Cronbach alpha coefficient α = 0.792, as it was higher than the minimum threshold, α = 0.60 (Pallant, 2001). COVIMP2, had four items, cov_ofoa_inc, cov_expect, ofoa_imp_cov, ofoa_bus, with a variance extracted of 24.85 and an Eigen value of 2.580. The factor was reliable, with α = 0.778. COVIMP3 had two items, vov_ofoa_dec, ofoa_overall_cov with loading factors, 0.822 and 0.855, respectively. The factor was reliable, with α = 0.704.

Table 5: Exploratory factor analysis and reliability test

Constructs	Number of items	Factor loading	% Variance extracted	Eigen values	Cronbach alpha
COVIMP1	cov_p_tp, cov_prep_tp, cov_pop_tp, cov_ofoa_aware	0.468 – 0.873	25.20	2.889	0.792
COVIMP2	cov_ofoa_inc, cov_expect, ofoa_imp_cov, ofoa_bus	0.715 – 0.810	24.85	2.580	0.778
COVIMP3	cov_ofoa_dec, ofoa_overall_cov	0.822 – 0.855	16.29	1.165	0.704

KMO = 0.743 χ^2 = 606.1 *df* = 45 *p* <.001

Cumulative = 66.34%

The study's sample size, which was less than 200 respondents and non-normal distribution, did not meet the assumptions of structural equation modelling covariance (CB-SEM). The CFA and structural model for relationship assessment were thus conducted using the structural equation modelling partial least square (PLS-SEM) method as this method is preferred over CB-SEM in research contexts where prediction is the statistical objective and PLS-SEM is suited for estimating nonlinear effects among constructs (Hair et al., 2017). The resultant measurement model for COVID-19 influence is presented in
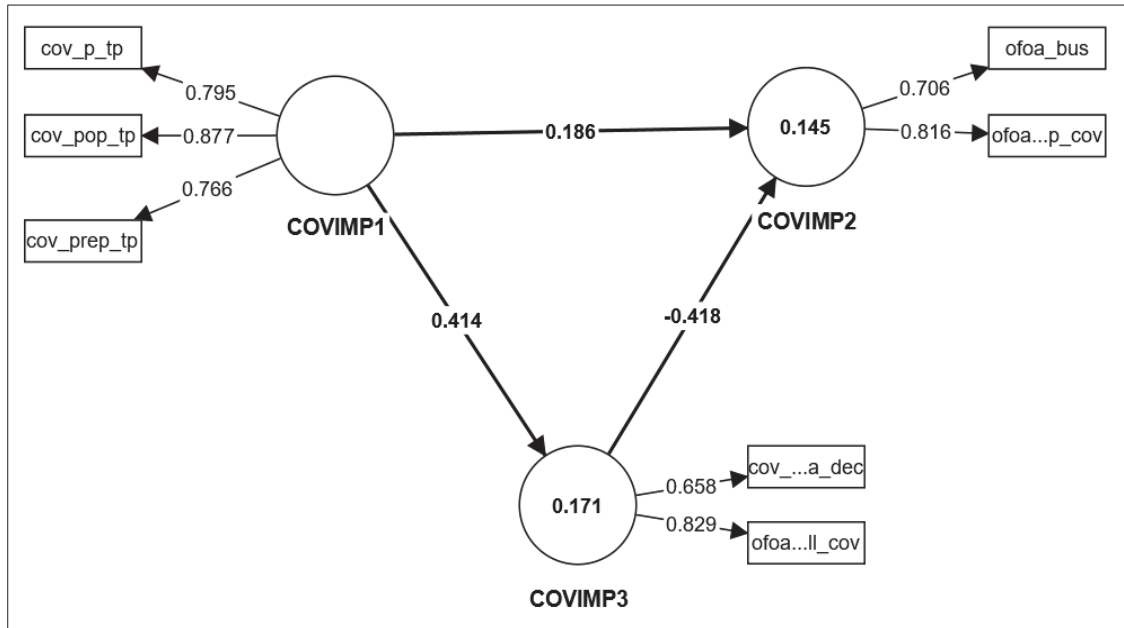
Figure 7. All the factor loading results were higher than 0.60, with the lowest being cov_ofoa_dec, which came to 0.658, and the highest being 0.877 for cov_pop_tp as such meeting the requirements of successful factor loading indicating relation. This model fits well with the standardised root mean square residual (SRMR), where SRMR = 0.020 and Normed Fit Index (NFI), which represents an incremental fit measure, was 0.976. Both resulted in a desirable value for a good fit in accordance with Henseler et al. (2014) who proposed a good fit for SRMR ≤ 0.080, while NFI ≥ 0.90.
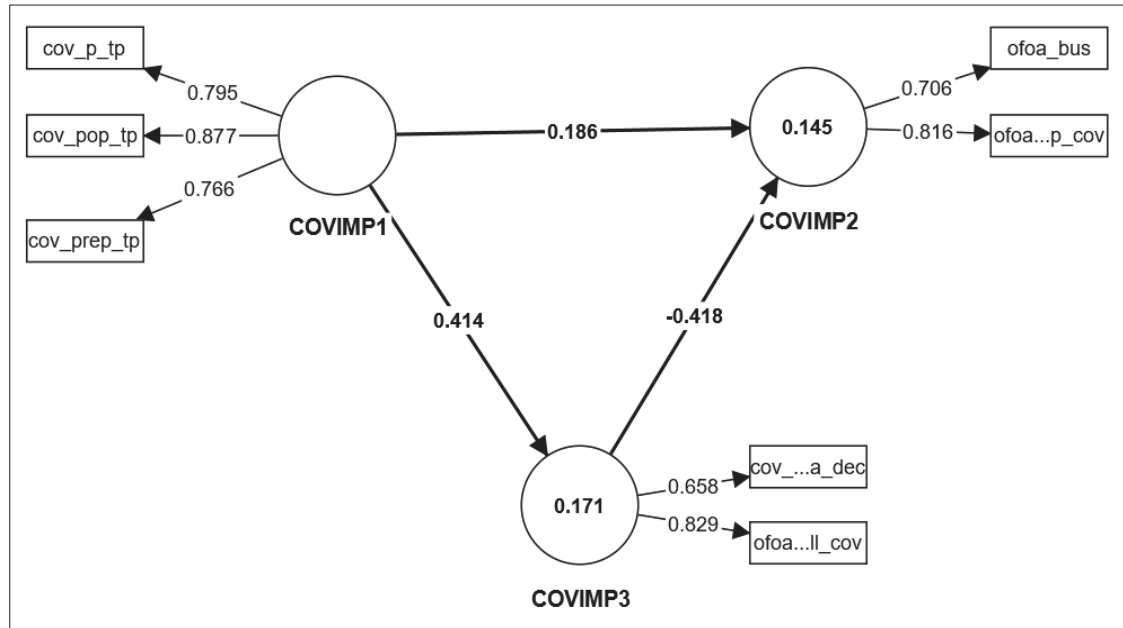
Figure 7: Measurement model for COVIMP

SRMR = 0.020 NFI = 0.976

The convergence validity of the model was analysed using the AVE. All of tested values pertaining to COVID-19 influence met the validity requirement based on their AVE which were higher than the threshold of 0.5, confirming the convergence validity (Pahlevan, Naghavi & Sharif, 2022). For COVIMP1 the AVE = 0.662, while for COVIMP2, AVE = 0.582 and COVIMP3, AVE = 0.560 (Table 6).

The COVIMP constructs were all reliable with composite reliability (rho_c) the range 0.715 – 0.854, composite reliability, (rho_a) with values 0.731 – 0.858 and Cronbach's alpha, α = 0.706 – 0.854. These values were all higher than 0.70. These constructs which have been regrouped as COVIMP1, COVIMP2 and COVIMP3 using the variables within the original dataset, have satisfactory levels of validity and as such, are accepted.

Table 6: Convergence validity and reliability of COVIMP constructs

Constructs	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)

COVIMP1	0.854	0.858	0.854	0.662
COVIMP2	0.731	0.741	0.735	0.582
COVIMP3	0.706	0.731	0.715	0.560

The discriminant validity was analysed using cross-loading and heterotrait-monotrait ratio (HTMT), where HTMT is a measure of similarity among latent variables. Where HTMT is smaller than 0.85, discriminatory validity can be established. An HTMT can be decreased by removing items correlating with other items of the same construct or removing items with the highest correlations with items of other constructs. In

Table 7, the cross-loading demonstrates discriminatory validity with the items highly loaded within the preferred variables compared to other constructs or factors.

The components cov_p_tp, cov_pop_tp and cov_prep_tp are highly loaded in COVIMP1, while ofoa_bus and ofoa_imp_cov on COVIMP2 and ofoa_overall_cov and cov_ofoa_dec on COVIMP3. The discriminatory validity was confirmed by heterotrait-monotrait ratio, with all having values of less than the recommended 0.85 (H_{85}) by Kline (2011). It means that it is discriminatory validity; therefore, they are related, but they are their own construct; therefore, they can be used together.

Table 7: Cross-loading and heterotrait-monotrait ratio (HTMT) for COVIMP constructs

Discriminant validity test		COVIMP1	COVIMP2	COVIMP3
Cross-loading	cov_p_tp	0.795	0.043	0.328
	cov_pop_tp	0.877	-0.015	0.363
	cov_prep_tp	0.766	0.005	0.317
	ofoa_bus	-0.002	0.706	-0.241
	ofoa_imp_cov	0.020	0.816	-0.278
	ofoa_overall_cov	0.344	-0.280	0.829
	cov_ofoa_dec	0.270	-0.227	0.658
Heterotrait-monotrait ratio (HTMT) – Matrix	COVIMP1			
	COVIMP2	0.033		
	COVIMP3	0.416	0.344	

5.5.3 Online food ordering applications

The exploratory factor analysis of the seven-item OFOA construct is presented in Table 8. The Kaiser-Meyer-Olkin for adequacy of the sample, KMO = 0.726 and Bartlett's test for sphericity, χ^2 = 228.8 *df* = 45 *p* <.001, confirmed the suitability of the factor analysis and as such that a good fit was prevalent.

Table 8: Exploratory factor analysis and reliability test

Constructs	Number of items	Factor loading	% Variance extracted	Eigen values	Cronbach alpha
OFOA1	ofoa_prep, ofoa_p, ofoa_satis	0.384 – 0.866	36.72	2.570	0.756
OFOA2	ofoa_overall, ofoa_decision, ofoa_pop, **ofoa_num**	0.479 – 0.806	15.92	1.114	0.645

KMO = 0.726 χ^2 = 228.8 *df* = 45 *p* <.001

Cumulative = 52.64%

Item in bold excluded in reliability

Two factors were extracted with the cumulative percentage variance = 52.64%, which were OFOA1 and OFOA2. OFOA1 is *the OFOA influence of pre-purchase and purchase touchpoints of the customer journey* and had three items, ofoa_prep, ofoa_p, ofoa_satis with % Variance extracted of 36.72% and Eigen values = 2.570. This factor was reliable, with the Cronbach alpha, α = 0.756. OFOA2 is *OFOA influence on customer journey/experience* and had four items, ofoa_overall, ofoa_decision, ofoa_pop, ofoa_num with % Variance extracted = 15.92% and Eigen value = 1.114. The reliability analysis was lower than 0.6, but it improved to α = 0.645 after excluding ofoa_num.

The measurement model of the OFOA construct was a four-item model, with ofoa_prep, ofoa_p, for OFOA1 and ofoa_decision, ofoa_pop for OFOA2. This model was a good fit with SRMR = 0.017, and NFI = 0.985. All the factor loadings were higher at 0.853 for ofoa_decision, 0.850 for ofoa_pop, 0.896 for ofoa_prep and 0.897

for ofoa_p (Figure 8).
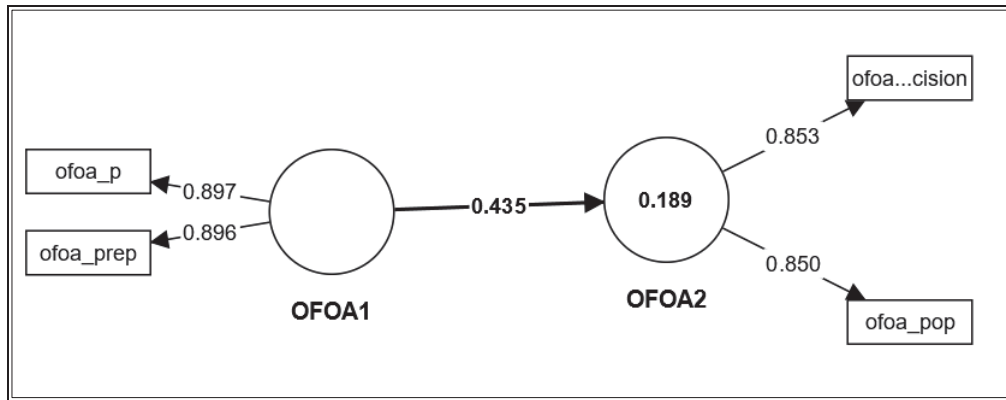
Figure 8: Measurement model for OFOA

SRMR = 0.017 and NFI = 0.985

The results of the average variance extracted confirm the convergence validity with AVE = 0.804 for OFOA1 and AVE = 0.725 for OFOA2. Composite reliability (rho_c) was 0.891 for OFOA1 and 0.840 for OFOA2, proving acceptable for both.

Table 9: Convergence validity and reliability of COVIMP constructs

Constructs	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
OFOA1	0.757	0.757	0.891	0.804
OFOA2	0.620	0.620	0.840	0.725

The discriminant validity was confirmed by the cross-loading and heterotrait-monotrait ratio. Table 10 reflects that ofoa_p and ofoa_prep are highly loaded in OFOA1, while ofoa_pop and ofoa_decision are highly loaded in OFOA2. The HTMT value for OFOA was 0.636, lower than the threshold of 0.85 proposed by Kline (2011); therefore, validity can be established among these reflective constructs. The hypothesised factor model is, therefore, represented with distinctly various factors and their items.

Table 10: Cross-loading and heterotrait-monotrait ratio (HTMT) for online food ordering application

Discriminant validity test		OFOA1	OFOA2
Cross-loading	ofoa_p	0.897	0.391
	ofoa_prep	0.896	0.389
	ofoa_pop	0.369	0.850
	ofoa_decision	0.372	0.853
Heterotrait-monotrait ratio	OFOA1		0.636
	OFOA2		

5.6   Correlation matrix

The correlation analysis was conducted using Pearson correlation, guided by Cohen (1988), who classified the value of the correlation coefficient into small if r = 0.10 to 0.29, medium if r = 0.30 to 0.49 and high if r ≥ 0.50. Table 11 demonstrates that COVIMP2 has a strong statistically significant positive correlation with OFOA1, r = 0.506, p<.01, COVIMP2 also had a medium strength statistically significant positive correlation with OFOA2, r = 0.420, p <.01. COVIMP1 had a small statistically significant positive correlation with OFOA2, r = 0.158, p <.05. OFOA1 had a medium statistically significant positive correlation with OFOA2, r = 0.384, p <.01, while COVIMP1 and COVIMP3 were also statistically significantly correlated (r = 0.311, p <.01).

Table 11: Correlation matrix

	OFOA1	OFOA2	COVIMP1	COVIMP2	COVIMP3
OFOA1	-				
OFOA2	.384**	-			
COVIMP1	.049	.158*	-		
COVIMP2	.506**	.420**	.138	-	
COVIMP3	-.79	.097	.311**	-.153	-

** Correlation is significant at the 0.01 level (2-tailed) meaning there is an existence of a relationship

* Correlation is significant at the 0.05 level (2-tailed)

With correlation matrix, where there is no statistically significant relationship, it is not

possible to have a final stance on whether the hypotheses were supported or not. In this case however the researcher proceeded to do further relationship testing by carrying out structural modelling and the results of this are discussed further in Chapter 6.

5.7   Structural models and hypotheses testing

To assess the hypotheses of the emerging themes established through this study, the SEM was computed to determine the relationship between these other constructs of interest, such as assessing the COVID-19 influence (COVIMP) on OFOAs. A predictive relevance test of the constructs of the study was assessed with a Q^2 test in the endogenous variable, where $Q^2 > 0$ indicates good predictive relevance (Hair et al., 2017). This test measures if a model has predictive relevance where any Q^2 values above zero, indicating that the values of the research's constructs are well reconstructed and confirms that the model has predictive relevance. The results established that the predictive relevance was confirmed with $Q^2 = 0.095$ for OFOA1 and $Q^2 = 0.072$ for OFOA2 (Table 12).

Table 12: Predictive relevance summary of endogenous constructs

	Q²predict	RMSE	MAE
OFOA 1	0.095	0.966	0.741
OFOA 2	0.072	0.971	0.767

Further to establishing the above, the relationships among the constructs were tested by calculating the t-statistics and then calculating the corresponding p-values. This t-statistics is used to calculate the p-value and help determine whether to support or reject a null hypothesis by indicating how closely the data matches the distribution of the estimated value of the null hypotheses to its standard error and a p-value of 0.001 indicates that if the null hypothesis tested were true, there would be a 1 in 1,000 chance of observing results at least as extreme.

The results of the relationship testing stated that COVIMP2 had a statistically significant relationship with OFOA1 (COVIMP2 -> OFOA1) where the t-statistics = 4.701 and where p-values <.001 (Table 13). COVIMP2 also had a statistically significant relationship with OFOA2 (COVIMP2 -> OFOA2) with the t-statistics = 4.096 with p <.001. All the other paths, COVIMP1 -> OFOA1, COVIMP1 -> OFOA2, COVIMP3 -> OFOA1 and COVIMP3 -> OFOA2 were not statistically significant, with p-values higher than 5% (p >.05) (Table 13). Because of the statistically significant relationship between COVIMP2 and OFOA1 and COVIMP2 and OFOA2, these hypotheses of emerging themes are supported and shall be discussed in greater depth in the discussions section of this study.

Table 13: Path coefficients of the constructs

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T-statistics (|O/STDEV|)	P-values
COVIMP1 -> OFOA 1	0.038	0.045	0.084	0.451	0.652
COVIMP1 -> OFOA 2	0.080	0.093	0.106	0.755	0.450
COVIMP2 -> OFOA 1	**0.372**	**0.374**	**0.079**	**4.701**	**0.000**
COVIMP2 -> OFOA 2	**0.332**	**0.335**	**0.081**	**4.096**	**0.000**
COVIMP3 -> OFOA 1	0.092	0.091	0.086	1.075	0.282
COVIMP3 -> OFOA 2	0.154	0.143	0.112	1.376	0.169

The structural model confirms the substantial paths being COVIMP2 -> OFOA1 and COVIMP2 -> OFOA2 (Figure 9).
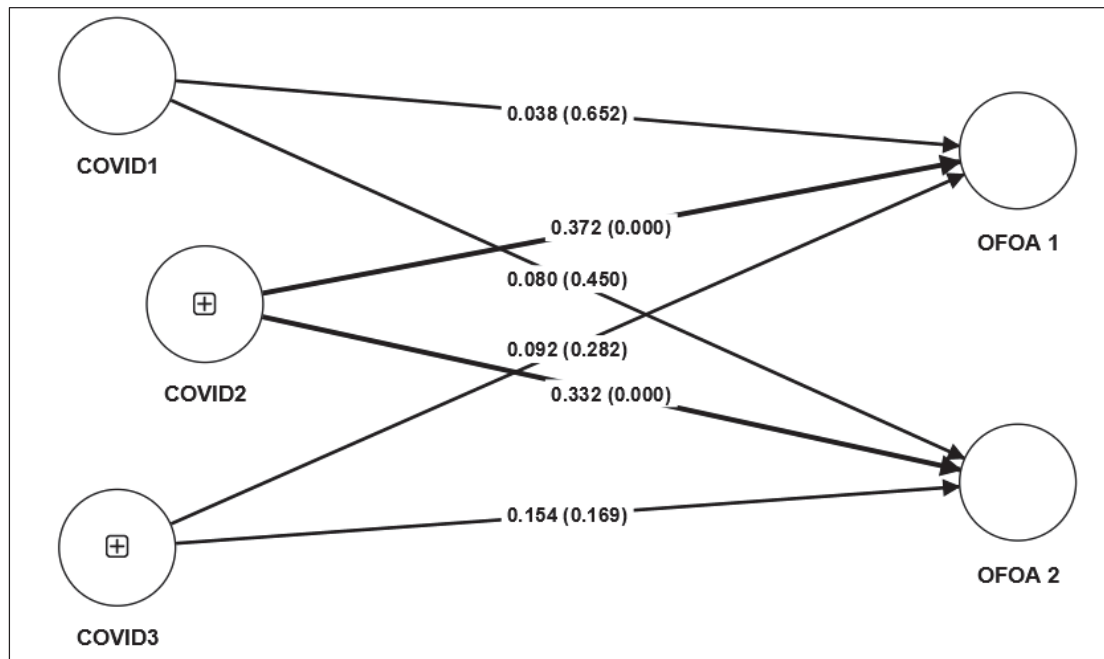

Figure 9: Structural model with coefficients and p-values

OFOA1 – R^2 = 0.236 (R^2 adj = 0.224); OFOA2 – R^2 = 0.225 (R^2 adj. = 0.212)

OFOA1 – F^2 = 0.301; OFOA2 – F^2 = 0.248

The R square (R^2), which quantifies the predictive accuracy of a model, and this is useful in assessing the quality of the PLS model (Hair et al., 2017), for OFOA1, explained by COVIMP2, was 0.236, while the R^2 for OFOA2, explained by COVIMP2, was 0.225. These were weak R^2 based on the rough rule of thumb threshold of 0.25 for weak R^2 by Hair et al. (2017). Cohens's F^2, which is the change in R^2 when the exogenous (dependent) variable is removed from the model, is also known as the effect size. F^2 is used to calculate the effect size within a multiple regression model where the independent variable of interest and the dependant variable are both continuous. The F^2 for both paths had a medium effect size (≥ 0.15) based on Cohen (1988) with $F^2 = 0.301$ for OFOA1 path and $F^2 = 0.248$ for OFOA2 path. Therefore, the relationship between these variables is neither large nor small as the mean difference is medium meaning the importance of the difference is neither great nor is it unimportant and the strength of association between the constructs is significant.

5.8   Emerging themes

Because of the resultant not significant nature of COVID-19s influence on all of the customer journey phases as stated in H1, H2 and H3, alternative relationships were tested for significance to gain more insight from the data. Albeit the lens through which the research was conducted could not be fully development (pre-purchase, purchase, and post-purchase constructs) there is still a case to be made for the studies contribution to literature on the overall customer experience, customer journey and COVID-19 influence. The outcomes of these emerging hypotheses are outlined in Table 14 below, and the emerging insights can be considered contributions to the divergences in the literature regarding the influence of COVID-19 on OFOA. Where there was no statistical significance, the null hypothesis was accepted, and for those that indicated a statistical significance, the null hypothesis was rejected, and the alternative hypothesis was accepted.

Table 14: Summary of the hypothesised emerging themes

Hypothesis	Result	Decision
COVIMP1 -> OFOA 1	(T)* = 0.451 P-values = 0.652	Accept the null hypothesis, no statistically significant relationship/inconclusive
COVIMP1 -> OFOA 2	(T) = 0.755	Accept the null hypothesis,

	P-values = 0.450	no statistically significant relationship/inconclusive
COVIMP2 -> OFOA 1	**(T) = 4.701** **P-values = 0.000**	**Accept the alternative hypotheses: statistically significant relationship**
COVIMP2 -> OFOA 2	**(T) = 4.096** **P-values = 0.000**	**Accept the alternative hypotheses: statistically significant relationship**
COVIMP3 -> OFOA 1	(T) = 1.075 P-values = 0.282	Accept the null hypothesis, no statistically significant relationship/inconclusive
COVIMP3 -> OFOA 2	(T) = 1.376 P-values = 0.169	Accept the null hypothesis, no statistically significant relationship/inconclusive

(T) bigger than 1.96 is statistically significant

These results are in fact congruent and some conflicting research papers which were covered in the literature review in Chapter 2, which will be further discussed along with the other results, in Chapter 6, along with the limitations of the study which will be positioned in Chapter 7, to help further contextualise these emerging findings of the research study.

5.9   Chapter summary

This chapter presents the findings of primary data collected through an online self-administered questionnaire. Those results included descriptive data and were followed by results of validity and reliability of the instrument used to establish the level of the instrument's applicability and the generalisability of the findings. CFA proved not suitable in certain measures of convergent and discriminant validity and as such EFA was nominated as a more appropriate measurement model. The chapter concludes with a presentation of the results of the structural modelling equation to test the hypothesis to answer the research question.

COVIMP had three variables, which were the exploratory variables of the study. These were COVIMP1, COVIMP2 and COVIMP3. Structural equation modelling with partial least square (PLS-SEM) confirmed there was convergence and discriminant validity of these variables and their reliability. OFOA1 and OFOA2 were the dependent variables, with the measurement model also confirming their validity and reliability. The structural model demonstrates a statistically significant relationship

between COVIMP2 and OFOA1 and COVIMP2 with OFOA2. This means that COVID-19 influence influenced the user perception of the online food ordering application experience with OFOA influence of pre-purchase and purchase touchpoints of the customer journey. Also, COVID-19 influenced the user perception of the online food ordering application experience with the OFOA influence on customer journey/experience. Despite the statistical significance, these paths had weak R^2 but a medium effect size.

CHAPTER 6: DISCUSSION OF THE RESULTS

6.1   Introduction

This chapter presents the research findings and contextualises them concerning the literature reviewed in Chapter 2. The discussion of results is aimed at emphasising commonalities and variances with theoretical and conceptual knowledge established in the literature. The extent to which the model proposed in Chapter 3 was validated. These study findings are discussed and, therefore, describe how the analysis of insights responds to the fundamental question of the study: *What influence did COVID-19 have on the customer journey of online food ordering applications users in South Africa*? A review of the assessed results is contrasted with the literature and theories in the earlier chapters of this study.

This chapter explores important themes from the data collected from 185 respondents and analysed through the data analysis process described in Chapter 5 of this study. The discussions in this chapter, therefore, surpass the call of providing important findings on the influence of COVID-19 on the OFOA customer journey of South African users, but also effectively engage on the aspects of the effect COVID-19 had on OFOA satisfaction, OFOA customer experience, decision-making and the individual customer journey phases, which include pre-purchase, purchase, and post-purchase phase.

Chapters 4 and 5 explored the variables through CFA and thereafter, EFA to validate the variables used in the main SEM. There were over 10 variables from the measurement tool that assessed COVID-19s influence and another six explored OFOA in relation to the customer experience. Through conducting factor analysis established two significant relationships to analyse further. These two constructs were statistically significant in their relationship with other grouped constructs. This section discusses these causes in greater detail and deliberates on the results that stemmed from the analysis of the demographic statistics.

6.2   Research process review

A conceptual model was developed supported by literature that would explain the

relationship between customer experience and the iterative customer journey loop of OFOA users and the degree to which this has been affected by COVID-19. Underpinning this model was the Lemon & Verhoef (2016) Customer Journey map, which succinctly depicts the customer process flows, purchase stages, touchpoints and even a feedback loop that makes consideration of future experiences of that customer. The theoretical groundings for this theory were supported and confirmed by empirical studies reviewed in Chapter 2.

The research design followed a descripto-explanatory design where a valid sample of 185 valid OFOA users in South Africa participated in the research study and the constructs of the study were derived from the literature that was reviewed covering customer experience, online food ordering applications, customer journey, and the impact of COVID-19 on these constructs. The research findings of this research supported the overarching study objective. COVID-19 affected and influenced customer experience and, therefore, the customer journey of online food order application users.

Some of the hypothesised relationships including COVID-19s direct impact on customer journey stages of pre-purchase, purchase and post-purchase stages were not explicitly supported (H1, H2, H3) as stand-alone constructs. It is however important to acknowledge that COVID-19s impact on customer satisfaction, and customer behaviour, along with other emerging insights that are still relevant and key to business research were brought to the fore by this research and will also be discussed further in this chapter.

6.3   Demographic overview

One hundred eighty-five respondents completed the survey and met the sample frame of a minimum age of 18 years old and have used an OFOA at least once. These responses were, therefore, all used in the statistical tests as the completion rate was 100%.

The demographic information collected included the age of the respondents, their gender, the highest level of education and the total of individuals in their household. Based on the tests conducted, the sample size was large enough to conduct

meaningful statistical analysis (Aguinis & Bradley, 2014; Vanvoorhis & Morgan, 2007). Statistical analysis was conducted predominantly using p-value, Cronbach's alpha and SEM. As this survey was distributed to a wide group of individuals, several biases that were remarked in the data analysis are elaborated on below.

The samples' first and most obvious bias was that of the gender of the respondents, where a comparison is made between males and females. The number of male responses totalled 58 out of 185 responses, accounting for 31.35% of the total responses received. This is a significant difference from the 127 female respondents (68.65%), and this can be biased and could be attributed to the researcher being a female and having a female-dominated network of individuals interested in partaking in the survey.

The respondents' age profile was 3.75% of the population in the age group 18 to 24, 56.22% in the 25 to 34 age group, 36.22% from 35 to 54 and 3.78% older than 55 years old. The age profile is according to the employed age of the South African population, where the age group of 25 to 34 represents the second largest population of economically active South Africans (Stats SA, 2022). The sample selected is, therefore, arguably a fair representation of the population of South Africa.

6.4   Use of online food ordering applications

The field data shows that a considerable proportion (nearly a fourth) of the sample used OFOAs weekly before the COVID-19 pandemic. The findings are according to literature from countries, such as China, Brazil, Pakistan and the middle east, demonstrating that the advancement in technology, which includes the increase in smartphone use and Internet coverage, has digitalised food ordering long before the COVID-19 pandemic (Ali et al., 2020; Farah et al., 2022; Chai & Yat, 2019; Liu & Lin, 2020; Tandon et al., 2021). Three-quarters (75.68%) of the respondents acknowledged that their OFOA usage increased, with more than three-quarters of the current study population indicating that they use OFOAs more than before the pandemic.

Ali et al. (2020) called COVID-19 a 'situational influence' that increased the usage of OFOAs, confirmed by the responses of the respondents in the study. The usage of

OFOAs was also reported to have increased significantly during the COVID-19 pandemic in Pakistan, India, Vietnam, and China (Ali et al., 2020; Bag et al., 2021; Tran, 2021). It was also established that the participants felt that COVID-19 did not negatively affect the quality of service received through the applications. Prabhu and Dongre (2018) postulated that the customised service provided by OFOAs led to greater customer satisfaction. This is because the applications were more convenient concerning time and access to a wide range of choices in the comfort of one's own home. Kumar and Shah (2021) added that the COVID-19 crisis resulted in consumers being excited to use OFOAs from the comfort of their homes while maintaining social distance and not compromising on safety. This can also be inferred from the findings of this study because the data states that OFOA usage has increased in South Africa since the start of the pandemic.

6.5   Customer experience

The univariate analysis of the study demonstrates crucial results that add value to the discourse, as supported by the literature above. The responses from the field suggest that as much as the customer experience was significantly affected by COVID-19, the respondents disagreed with the statement that the change in customer experience was adverse. The suggested positive change in the customer experience of OFOAs is because the customised service provided by OFOAs led to greater customer satisfaction (Prabhu & Dongre, 2018).

The convenience of saving time by not cooking and choosing from a variety of restaurants, menus, prices, and payment methods existed, from anywhere at any time, without waiting in line or being put on hold, are some of the identified reasons for increased customer satisfaction from literature (Liu & Lin, 2020; Prabhu & Dongre, 2018; Prasetyo et al., 2021; Tandon et al., 2021). Most respondents agreed that the pre-purchase, purchase, and post-purchase were critical stages of the customer experience. This is consistent with Bag et al. (2021) who explained that these are stages when a customer interacts with a product or service by actively engaging in cognitive, emotional, social, spiritual, and sensory responses to touchpoints.

6.6   OFOA customer journey

When assessing the relationship between COVID-19 and the customer journey with a particular interest in the stages as separate constructs (pre-purchase, purchase, and post-purchase) in OFOAs using multivariate analysis, the results were unsatisfying; however, still useful because they could evaluate the other relationships (H4 and H5). From the literature review (Kumar & Shah, 2021), it has also been demonstrated with statistically significant results that COVID-19 affected the customer journey and the customer experience of those using OFOAs. The below results in Table 15 from variables evaluated for OFOA influence on the customer journey tell of an interesting finding by which respondents acknowledge the power of influence that OFOA has on the *pre-purchase* and *post-purchase* stages of the customer journey but mostly on the *purchase* stage. This finding supports what was postulated by Farah et al. (2022) and can conclude that digitising the food industry and using technological platforms, such as OFOA, has affected the customer journey stages significantly.

Table 15: OFOA variables

OFOA		Mean	p-value
ofoa prep	The Online food ordering application I use influences my pre-purchase experience significantly	3.897	0.000
ofoa p	The Online food ordering application I use influences my purchase experience significantly	4.049	0.000
ofoa pop	The Online food ordering application I use influences my post-purchase experience significantly	3.762	0.007

Through quantitative methodology, as with this study, other scholars contended that the total customer experience of OFOAs was irrecoverably altered by the COVID-19 pandemic (Ali et al., 2020; Brewer & Sebby, 2021; Kumar & Shah, 2021; Troise et al., 2020; Zanetta et al., 2021). These studies, through various frameworks, display that the pandemic resulted in incredibly stressful conditions where the perception of risk of contracting the virus was high (Zanetta et al., 2021). This affected the customer-owned and external touchpoints in the customer journey of customers of OFOAs (Brewer & Sebby, 2021).

Brewer and Sebby (2021) explained that the increased need for pleasure, a sense of control and dominance, created a perpetual cyclical customer journey. Positive emotions were produced by an attractive landing page, colour combination, legibility, and clean words influenced the pre-purchase stage and determined loyalty at the post-purchase stage of the customer journey (Kumar & Shah, 2021). The research findings further confirm the conclusions from Kumar and Shah (2021), revealing that customers are significantly influenced by their food ordering application throughout the customer journey stages.

6.7 Emerging themes

6.7.1 COVIMP2

The study, through exploratory factor analysis of the variables using principal components with varimax rotation, reveals that the best-suited way to measure COVID-19 influence was to Group 4 (see table above) of the 10 variables assessing COVID-19 in the measurement instrument. Based on the aggregation of these variables from the exploratory analysis and subsequent running of structural equation modelling, COVIMP2 was derived and passed the relevant validity and reliability tests with a Cronbach alpha of 0.731 and AVE of 0.582. COVIMP2 comprises the variables cov_ofoa_inc, cov_expect, ofoa_imp_cov, and ofoa_bus. The study findings pointed to that for cov_ofoa_inc, cov_expect, ofoa_imp_cov and ofoa_bus, the average mean was 3.923, meaning that most responses agreed with the specific statements, and it can, therefore, be concluded that COVID-19 has increased OFOA usage; changed the customers' expectations; improved the impression customers have of OFOAs that of the businesses that make use of the

applications.

Table 16: COVIMP2 variables

COVIMP2		Mean	p-value
cov_ofoa_inc	COVID-19 has increased my usage of Online Food Ordering Applications.	4.076	0.000
cov_expect	COVID-19 has changed my expectations from Online Food Ordering Applications.	3.908	0.000
ofoa_imp_cov	My impression of the Online Food Ordering Applications has improved since the beginning of the COVID-19 pandemic.	3.843	0.001
ofoa_bus	My impression of the online food ordering application partners and restaurant businesses who make use of the platform has improved because of the COVID-19 pandemic.	3.865	0.006

The study further postulates that cov_ofoa_inc, affected ofoa_overall and this supports a finding from a similar study by Muangmee et al. (2021), who established that COVID-19 negatively influenced the catering industry owing to the prohibitions on direct contact and social distancing requirement to curb the heightened risk of contamination. In the same way, however, Muangmee et al. (2021) contend that food delivery applications saw an increase in the number of customers making use of the service and even paying a premium for it as these platforms met the customers' safety and convenience requirements.

6.7.2 OFOA1

Through exploratory factor analysis of the seven items under the online food ordering application section in the survey questionnaire, the researcher understood there

were other underlying emerging themes statistically significant. It was established through the aggregation of these variables, exploratory analysis, and subsequent structural equation modelling that some items grouped suitably in constructs that could, therefore, be measured for statistical purposes. OFOA1 being the OFOA influence on pre-purchase and purchase phases and touchpoints thereof in the customer journey, captured three items, ofoa_prep, ofoa_p, ofoa_satis.

OFOA1 passed acceptable reliability with Cronbach alpha, $\alpha = 0.756$. As a collective, this thematic construct speaks to measuring the influence and satisfaction of OFOA on the customer journey. The findings are statically significant, and as with the study by Prabhu and Dongre (2018), supporting the assertation that OFOAs services lead to greater customer satisfaction, therefore, influencing the customer experience.

Table 17: OFOA1 variables

OFOA1		Mean	p-value
ofoa_prep	The online food ordering application I use influences my pre-purchase experience significantly	3.897	0.000
ofoa_p	The online food ordering application I use influences my purchase experience significantly	4.049	0.000
ofoa_satis	I am satisfied with my overall online food ordering application customer journey/experience	3.681	0.005

6.7.3   OFOA2

The variables under construct OFOA2, which is OFOA, influence on overall customer journey/experience, analysed four items from the survey questionnaire as a collective, including ofoa_overall, ofoa_decision, ofoa_pop, ofoa_num with the

reliability analysis, Cronbach alpha, lower than 0.6, but it improved to α = 0.645 after the exclusion of ofoa_num, and, therefore, the remaining items under OFOA2 were according to Table 18 below. Descriptively, this construct speaks to the usage of the OFOAs and decisions by the customer, which, therefore, influence the customer experience.

Table 18: OFOA2 Variables

OFOA2		Mean	p-value
ofoa_overall	The online food ordering applications' overall customer experience influenced the decisions I made pre-COVID-19	3.422	0.395
ofoa_decision	Online Food Ordering Applications significantly influence the decisions I make throughout my customer journey today	3.762	0.007
ofoa_pop	The online food ordering application I use influences my post-purchase experience significantly	3.762	0.007

The summation of the findings in this section are describe in section 6.7.4 below.

6.7.4 The extent of COVID-19s influence on OFOA satisfaction/influence and usage

The interaction of these thematic categories elucidated in this chapter (COVIMP2 -> OFOA1 and COVIMP2 -> OFOA2) and significant relationships relayed an important finding that the researcher established to be an interesting extension to the existing body of literature. The finding validates the notion that COVID-19 has affected the overall customer journey, the stages, and touchpoints, for influencing the decisions being made by customers when engaging with the OFOAs and their overall satisfaction with the OFOAs and, inadvertently, the food industry. The reliability and strength of the relationships among these thematic constructs are outlined in Figure

10.
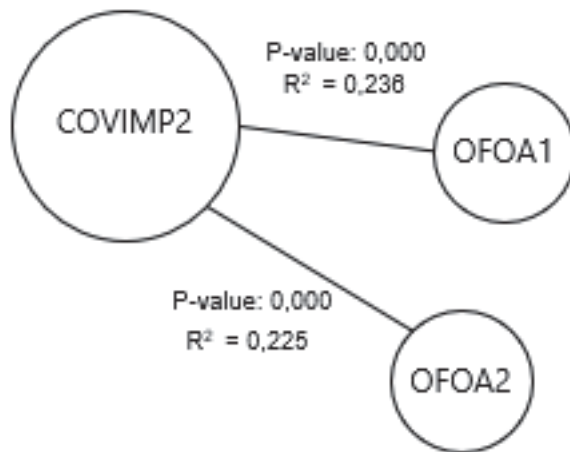
Figure 100: COVIMP relationship with OFOA1 and OFOA2

Source: Authors own

The structural model demonstrates a statistically significant relationship between COVIMP2 with OFOA1 and COVIMP2 with OFOA2. Through these results, it can be determined that COVID-19 influenced the user perception of the online food ordering application experience with OFOA influence of pre-purchase and purchase stages of the customer journey. Also, COVID-19 influenced the user's perception of the online food ordering application experience, with the OFOA impact on the overall customer journey/experience.

The increased usage of OFOA because of COVID-19 has, therefore, been confirmed by this field data and by examining the strengths of the relationships between COVIMP2 and OFOA2 and the above stated postulation; this extension to the literature further deepens the notion according to the assertions above.

6.7.5   Increased OFOA usage because of COVID-19 and the influence on customer experience

The findings conclude that increased OFOA usage influenced the customers' overall

experience concerning satisfaction and decision-making. While the study could not confirm customer journey touchpoints (pre-purchase, purchase, and post-purchase), the results identified other significant statistical relationships emphasising the influence of COVID-19 on customer experience and the decision-making process that drove customers to return to OFOAs and reorder from the listed restaurants there repeatedly. Other crucial themes that emerged include customer behaviour and usage of OFOA, where overall satisfaction was linked to repeated use of the OFOA confirmed by the study by Persigehl and Vermeer (2019), who articulates how customer experience triggers repeat purchases and guides the customers' decisions around repeat usage and loyalty.

6.7.6 Business influence on online food ordering application owners during COVID

The online delivery service sector experienced a growth during the COVID-19 pandemic. The sector relied on the number of customers who sought an alternative solution to convenient and safe food delivery services and the business's ability to collaborate effectively with OFOA owners (Muangmee et al., 2021). Businesses had to adapt quickly to the customers' additional needs and willingness to pay higher delivery fees amid the pandemic. This led to delivery riders accepting lower wages because of limited job opportunities because of COVID-19 (Muangmee et al., 2021). There is a more positive shift in customer impression of OFOA and a significant increase in using OFOA because of COVID-19. This advantaged satisfaction of OFOA and the customer experience, particularly in the pre-purchase and purchase phase of the customer journey.

6.8 Chapter summary

This chapter discusses the study results, based on the data analysed and presented in Chapter 5, responding to the research question and corresponding hypothesis. These findings were reflected in the literature review tabled in Chapter 2, where some relationships were confirmed, and others contradicted. What can be conclusively stated about the customer journey from the findings of this research is that there is a prevalent level of influence that OFOAs have on the pre-purchase and post-purchase stages of the customer journey.

The research findings suggest that customer experience was significantly affected by COVID-19, and not adversely. There were also other relationships confirmed, which included that of COVID-19s influence on OFOA customer experience and, further to that, the extent of COVID-19s influence on OFOA satisfaction/influence and OFOA usage. The increase in OFOA usage because of COVID-19 and the influence on customer experience thereof was subsequently presented as another finding, and the formation of new latent constructs and their relationships which support these findings discoursed.

CHAPTER 7: CONCLUSION

7.1 Introduction

This chapter concludes the research by presenting the principal conclusions. The proposed reformulation of the conceptual model introduced in Chapter 3 because of the research findings is discussed. The chapter introduces new themes emerging from the data exploration exercise. The chapter presents the theoretical and business implications of the research, outline the research limitations, and presents opportunities for future studies.

7.2 Conceptual model reformulation

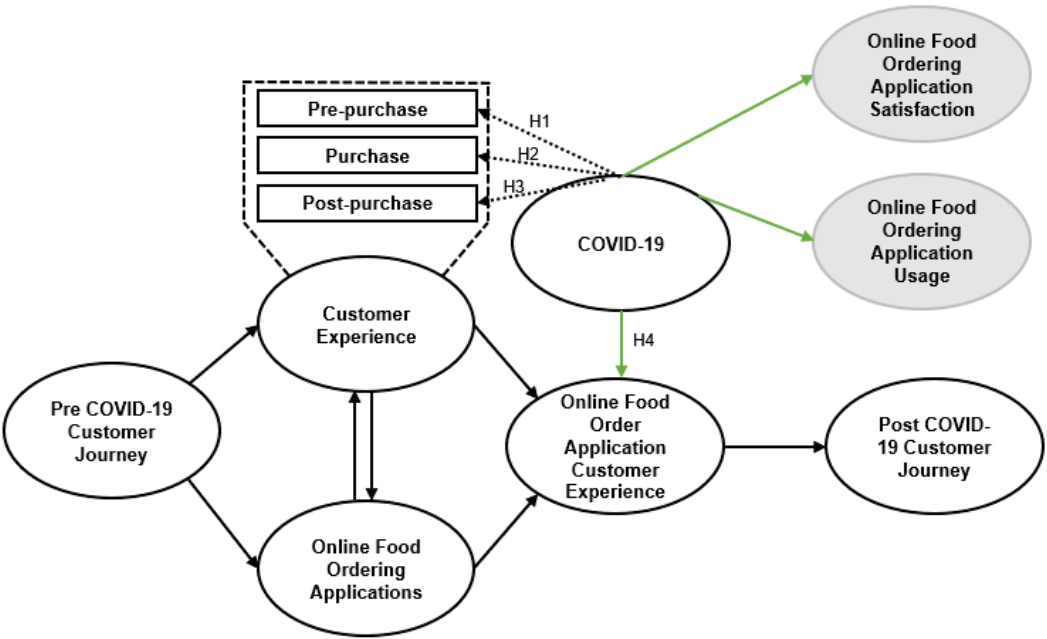
Figure 11: Conceptual model reformulated

Source: Authors own

H1 to H3 were not directly proven through this research study however there were revelations that emerged to support the hypotheses that COVID-19 has an influence on overall OFOA customer experience (H4). Two relationship which were not initially captured by the conceptual model, were introduced in the reformulated model. The

emerging themes which speak to the effect of COVID-19 on OFOA satisfaction and OFOA usage are incorporated into the conceptual model as statistically significant outcomes were found in the empirical analysis of the data that pointed to this. These statistically significant relationships confirm the findings posited by the likes of Tran (2021) and Brewer & Sebby (2021) that OFOA usage has been influence positively by COVID-19 and that customer satisfaction and experience of online food application users has been positively influenced by COVID-19.

7.3 Principle conclusions

The results of the research study support the main research problem which was to investigate what the influence of COVID-19 on the customer experience and, therefore, the customer journey of OFOA users in South Africa was.

There were alternative relationships which emerged and were confirmed through the structural empirical analysis process to be acceptable. These findings were that of COVID-19s influence on customer experience as it relates to (i) OFOA influence on pre-purchase experience, (ii) OFOA influence on purchase experience and (iii) general satisfaction with OFOA. These findings were line with findings by other authors, including Brewer & Sebby (2021). Further to that, the confirmation of COVID-19s influence on OFOA satisfaction/influence and OFOA usage by looking at (i) OFOA customers decision-making and (ii) the post-purchase experience of customers. The increase in OFOA usage because of COVID-19 and the influence on customer experience thereof were subsequently presented as findings, and the formation of new latent constructs and their relationships supporting the main purpose of this study.

7.4 Theoretical implications

The literature on the customer journey is not as extensive as that of customer experience yet, presenting an opportunity to extend the theoretical base of such a topic as there is merit to the conceptual theory which drives it. This research focussed on deriving a greater understanding of the extend of influence experienced by OFOA users because of COVID-19, with the lens of the customer journey theoretical background.

Although the study findings indicate a correlation between COVID-19 and OFOAs increased usage and OFOA satisfaction, an inadequate statistical correlation exists to confirm that COVID-19 directly affects the pre-purchase stage, purchase stage, and post-purchase stage of the customer journey, nor can the extent of the influence be quantified; however, the emerging themes can contribute significantly to the academic body of work, as it can be determined from the results that the pandemic affected how customers experience OFOAs in South Africa. Owing to the shortage of studies alike researching and analysing African markets, this study directly contributes to academia, particularly literature on African markets and their customers.

7.5   Business and management implications

With the pandemic has reduced the growth rate of a multitude of economies globally and the ever-changing norms of supply and demand, the volatile business environment has shifted how a business survives competition and remains relevant. This study demonstrates that, for the food industry to sustain that relevance, adopting technologies, such as OFOA, is paramount, and the evolution of how restaurateurs engage with their customers' needs has taken on a new form. Now managerial concerns include how to ensure customer convenience and keep customers returning when there is such rife competition. The growth experienced by the online delivery service sector during the COVID-19 pandemic relied on the number of customers who sought the alternative solution to convenient and safe food delivery services and the business's ability to collaborate with OFOA owners (Muangmee et al., 2021). Businesses had to adapt to the customers' new needs and willingness rapidly to pay higher delivery fees during a pandemic, which saw some delivery riders accept lower wages because of limited job opportunities because of COVID-19 (Muangmee et al., 2021).

According to the findings, a more positive shift exists in the customer impression of OFOA and a significant increase in using OFOA because of COVID-19 (discussed in Chapter 6). This has advantaged the overall satisfaction of OFOA and customer experience, particularly in the pre-purchase and purchase phase of the customer journey. Management needs to exploit such opportunities strategically to ensure

business stability well into the future during these uncertain times.

Businesses should invest in advanced user experience (UX) design that will appeal to the end user. As positioned by Kumar & Shah (2021) the use of videos, appealing graphics, and aesthetically appealing presentations hugely influence customer journeys and order to optimize the use of OFOA, effective UX design can increase revenue and drive brand loyalty (Halb et al., 2021).

7.6   Limitations of the study and opportunities for future research

While the research aimed to investigate the influence of COVID-19 on the entire customer journey value chain, the findings (Chapter 5) illustrate that COVID-19 has affected specific aspects of the customer journey, such as pre-purchase and post-purchase. This proved to be a limitation, as a general statement cannot be deduced; therefore, more specific comments can be posited based on the data findings. COVID-19 has affected facets of the customer journey, but the study proves a general influence on customer experience, satisfaction, and consumer decision-making. The conceptual model contained aspects difficult to determine attributable to the causality of these variables. A further limitation of this being cross-sectional research; therefore, future researchers could employ a mixed-method approach to this study to enrich the findings and better discuss the research question.

PLS-SEM as a statistical tool may also pose a limitation to the results of the study as it cannot be applied as a measurement technique to structural models which contain circular relations or causal loops between the latent variables (Hair et al., 2017). The ambiguity of the outcomes of the H1, H2 and H3 may be attributed to this very limitation and future researchers may look into structural equation modeling software alternatives like AMOS or R.

The research was conducted in Gauteng, albeit intended to represent the country as a whole. This limited the extent to which the data can be generalised for the greater South African population and beyond, apart from the sample size of 185 participants being moderately sufficient for the cause of the research. To remediate this limitation, future studies should regard expanding the sample base, which can be achieved through prolonging the data collection timeframe or finding alternative platforms to

gather the data; and one can also look at exploring markets in other regions.

The large bias towards the female demographic in this study, as most respondents were women (68.65%), is a limitation of this studies ability to be generalised, as it is not representative of the countries demographic split (Statista, 2022c). The same could be said for the large proportion of the studies participants being qualified with either a degree or having tertiary level education (95.68%) where in reality, the majority of people over 18 years of age are without that level of education and unemployment rate sits at a staggering 33.56% (Stats SA, 2022). The use of purposive sampling method could be the cause of this so there is opportunity for future researchers to make use of alternative sampling methods in order to get more out of the data findings.

This study is cross-sectional at a specific point. Further studies should consider a qualitative, and longer-term explorative studies approach to the research, which considers exploring how customer journeys and experiences evolve with time considering various endogenous and exogenous factors. This type of data gathering could be through interviews, focus groups and observations or a research instrument such as a case study. Future studies can look to expand the sample base and explore markets in other countries in Africa or globally.

7.7 Conclusion

The study richly added to the knowledge base related to the pandemics influence on the way that consumers think and behave. The contribution to OFOA literature is also of significance as this technology gains more and more importance in the business world, the growing relevance of the topic is undeniable. Businesses in the food industry need to urgently adapt to the changing ways that customers view them and invertedly, interact with them, in order to truly capitalise on customer loyalty and sustained success into the future.

REFERENCES

Abawi, K. (2017). Data Collection methods Questionnaire & Interview. In Training in Sexual and Reproductive Health Research, *Geneva Workshop*. URL: https://www. gfmer. ch/SRH-Course-2017/Geneva-Workshop/pdf/Data-collection-methods-Abawi-2017. pdf.

Aguinis, H., & Bradley, K. J. (2014). Best practice recommendations for designing and implementing experimental vignette methodology studies. *Organizational research methods, 17*(4), 351-371.

Alalwan, A. A. (2020). Mobile food ordering apps: An empirical study of the factors affecting customer e-satisfaction and continued intention to reuse. *International Journal of Information Management, 50*, 28-44.

Ali, S., Khalid, N., Javed, H. M. U., & Islam, D. Md. Z. (2020). Consumer Adoption of Online Food Delivery Ordering (OFDO) Services in Pakistan: The Impact of the COVID-19 Pandemic Situation. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(1), 10. https://doi.org/10.3390/joitmc7010010

Allen, M. (Ed.). (2017). *The SAGE encyclopedia of communication research methods*. SAGE publications.

Alruhaymi, A. & Kim, C. (2021) Study on the Missing Data Mechanisms and Imputation Methods. *Open Journal of Statistics*, 11, 477-492. doi: 10.4236/ojs.2021.114030.

Bag, S., Srivastava, G., Bashir, M. M. A., Kumari, S., Giannakis, M., & Chowdhury, A. H. (2021). Journey of customers in this digital era: Understanding the role of artificial intelligence technologies in user engagement and conversion. *Benchmarking*: *An International Journal.* https://doi.org/10.1108/BIJ-07-2021-0415

Brewer, P., & Sebby, A. G. (2021). The effect of online restaurant menus on consumers' purchase intentions during the COVID-19 pandemic. *International Journal of Hospitality Management,* 94, 102777. https://doi.org/10.1016/j.ijhm.2020.102777

Bursać, M. (2018). M-Learning, Myth or reality—Educational applications. *The 9th International Conference on eLearning*, 5.

Chai, L. T., & Yat, D. N. C. (2019). Online food delivery services: Making food delivery the new normal. *Journal of Marketing advances and Practices*, 1(1), 62-77.

Chotigo, J., & Kadono, Y. (2021). Comparative Analysis of Key Factors Encouraging Food Delivery App Adoption Before and During the COVID-19 Pandemic in Thailand. *Sustainability*, 13(8), (4088).https://doi.org/10.3390/su13084088

Cohen, J.W. (1988), Statistical power analysis for the behavioral sciences, Ed. Second, Hillsdale, *Lawrence Erlbaum Associates*, New Jersey

DeCarlo, M. (2018). Scientific inquiry in social work. *Open Social Work Education*.

Diebner, R., Silliman, E., Ungerman, K., & Vancauwenberghe, M. (2020). Adapting customer experience in the time of coronavirus. 7.

Dirsehan, T., & Cankat, E. (2021). Role of mobile food-ordering applications in developing restaurants' brand satisfaction and loyalty in the pandemic period. *Journal of Retailing and Consumer Services*, *62*, 102608.

Dolma, S. (2010). The central role of the unit of analysis concept in research design. *İstanbul Üniversitesi İşletme Fakültesi Dergisi*, *39*(1), 169-174.

Doyle, L., Brady, A. M., & Byrne, G. (2016). An overview of mixed methods research– revisit(ed) *Journal of research in nursing*, 21(8), 623-635.

Edelman, D. C. (2010). Branding in the Digital Age*. Harvard Business Review*, 9.

Farah, M. F., Ramadan, Z., & Kanso, J. (2022). Satisfying the online food crave: The case of online food aggregators. *International Journal of Consumer Studies*, *46*(4), 1413-1427.

Følstad, A., & Kvale, K. (2018). Customer journeys: A systematic literature review. *Journal of Service Theory and Practice*, 28(2), 196–227. https://doi.org/10.1108/JSTP-11-2014-0261

George, D. & Mallery, M. (2010). SPSS for Windows Step by Step: A Simple Guide and Reference, 17.0 update (10a (ed)) *Boston: Pearson.*

Ghasemi, A., & Zahediasl, S. (2012). Normality tests for statistical analysis: a guide for non-statisticians. *International journal of endocrinology and metabolism*, *10*(2), 486.

Haider, N., Osman, A. Y., Gadzekpo, A., Akipede, G. O., Asogun, D., Ansumana, R., Lessells, R. J., Khan, P., Hamid, M. M. A., Yeboah-Manu, D., Mboera, L., Shayo, E. H., Mmbaga, B. T., Urassa, M., Musoke, D., Kapata, N., Ferrand, R. A., Kapata, P.-C., Stigler, F., McCoy, D. (2020). Lockdown measures in response to COVID-19 in nine sub-Saharan African countries. *BMJ Global Health,* 5(10), e003319. https://doi.org/10.1136/bmjgh-2020-003319

Hair, J., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial management & data systems*

Halb, F., & Seebacher, U. G. (2021). User experience and touchpoint management: a touchpoint performance management toolkit for the buyer journey. In *B2B Marketing* (pp. 285-315). Springer, Cham.

Hamilton, R., Ferraro, R., Haws, K. L., & Mukhopadhyay, A. (2021). Traveling with companions: The social customer journey. *Journal of Marketing*, *85*(1), 68-92.

Hamouda, M. (2021). Purchase intention through mobile applications: A customer experience lens. International Journal of Retail & Distribution Management, 49(10), 1464–1480. https://doi.org/10.1108/IJRDM-09-2020-0369

Henseler, J., Dijkstra, T. K., Sarstedt, M., Ringle, C. M., Diamantopoulos, A., Straub, D. W. & Calantone, R. J. (2014). Common beliefs and reality about PLS: Comments on Rönkkö and Evermann (2013). *Organizational research methods*, *17*(2), 182-209.

James, Z. (2018). Business model innovation: antecedents, constraints and outcomes. Doctoral dissertation, *University of Pretoria*.

Kannan, P. K., & Kulkarni, G. (2021). The impact of Covid-19 on customer journeys: implications for interactive marketing. *Journal of Research in Interactive Marketing*. 16(1), 22–36. https://doi.org/10.1108/JRIM-03-2021-0078

Kapoor, A. P., & Vij, M. (2018). Technology at the dinner table: Ordering food online through

mobile apps. *Journal of Retailing and Consumer Services*, *43*, 342-351.

Kline, R. B. (2011). Convergence of structural equation modelling and multilevel modelling.

Kuehnl, C., Jozic, D., & Homburg, C. (2019). Effective customer journey design: consumers' conception, measurement, and consequences. *Journal of the Academy of Marketing Science*, *47*(3), 551-568.

Kumar, R. (2018). Research methodology: A step-by-step guide for beginners. *Sage.*

Kumar, S., & Shah, A. (2021). Revisiting food delivery apps during COVID-19 pandemic? Investigating the role of emotions. *Journal of Retailing and Consumer Services*, 62, 102595. https://doi.org/10.1016/j.jretconser.2021.102595

Lemon, K. N., & Verhoef, P. C. (2016). Understanding Customer Experience Throughout the Customer Journey. *Journal of Marketin*g, 80(6), 69–96. https://doi.org/10.1509/jm.15.0420

Leva, M., & Ziliani, C. (2018). The role of customer experience touchpoints in driving loyalty intensions in services. *The TQM Journal, 30*(5), 444-457.

Lindberg, D. F., & Vermeer, T. (2019). The never-ending story: discovering touch points and customer experiences along the customer journey.

Liu, C. F., & Lin, C. H. (2020). Online food shopping: a conceptual analysis for research propositions. *Frontiers in Psychology*, *11*, 583768.

Mäntymäki, M., Islam, A. N., Turel, O., & Dhir, A. (2022). Coping with pandemics using social network sites: A psychological detachment perspective to COVID-19 stressors. *Technological Forecasting and Social Change*, 179, 121660.

Muangmee, C., Kot, S., Meekaewkunchorn, N., Kassakorn, N., & Khalid, B. (2021). Factors Determining the Behavioral Intention of Using Food Delivery Apps during COVID-19 Pandemics. *Journal of Theoretical and Applied Electronic Commerce Research,* 16(5), 1297–1310. https://doi.org/10.3390/jtaer16050073

Oluwatayo, J. A. (2012). Validity and reliability issues in educational research. *Journal of*

educational and social research*, 2*(2), 391-391.

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and policy in mental health and mental health services research*, 42(5), 533-544.

Pallant, J. (2001). SPSS survival manual - a step by step guide to data analysis using SPSS for windows (version 10), *Buckingham Open University Press.*

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Poon, W. C., & Tung, S. E. H. (2022). The rise of online food delivery culture during the COVID-19 pandemic: an analysis of intention and its associated risk. *European Journal of Management and Business Economics.*

Pophiwa, N., Moroane, K & Kenny, S. (2021). How COVID-19 is affecting consumers in South Africa: Challenges, behaviour shifts and policy responses. *The National Consumer Commission.*

Prabhu, A., & Dongre, R. (2018). Analysis of customer attitude towards electronic food ordering. *KIMI Hospitality Research Journal*, 3(1), 1.

Prasetyo, Y. T., Tanto, H., Mariyanto, M., Hanjaya, C., Young, M. N., Persada, S. F. & Redi, A. A. N. P. (2021). Factors affecting customer satisfaction and loyalty in online food delivery service during the COVID-19 pandemic: Its relation with open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(1), 76.

Ray, A., Dhir, A., Bala, P. K., & Kaur, P. (2019). Why do people use food delivery apps (FDA)? A uses and gratification theory perspective. *Journal of Retailing and Consumer Services*, 51, 221-230.

Ramos, K. (2022). Factors influencing customers' continuance usage intention of food

delivery apps during COVID-19 quarantine in Mexico. *British Food Journal*, 124(3), 833–852. https://doi.org/10.1108/BFJ-01-2021-0020

Robinson, O. C. (2014). Sampling in interview-based qualitative research: A theoretical and practical guide. *Qualitative research in psychology*, *11*(1), 25-41.

Roopa, S., & Rani, M. S. (2012). Questionnaire designing for a survey. *Journal of Indian Orthodontic Society*, *46*(4_suppl1), 273-277.

Rosenbaum, M. S., Otalora, M. L., & Ramírez, G. C. (2017). How to create a realistic customer journey map. *Business Horizons,* 60(1), 143–150. https://doi.org/10.1016/j.bushor.2016.09.010

Sales Force. (2021). Explore a new era of customer expectations in South Africa. *Salesforce EMEA.* Retrieved from Salesforce Website: https://www.salesforce.com/eu/blog/2021/07/customer-expectations-south-africa.html

Santos, S., & Gonçalves, H. M. (2021). The consumer decision journey: A literature review of the foundational models and theories and a future perspective. *Technological Forecasting and Social Change,* 173, 121117. https://doi.org/10.1016/j.techfore.2021.121117

Sarstedt, M., Ringle, C. M., & Hair, J. F. (2021). Partial least squares structural equation modeling. *In Handbook of market resear*ch (pp. 587-632). Cham: Springer International Publishing.

Saunders, M., & Lewis, P. (2017). *Doing research in business and management*. Pearson.

Shah, A. M., Yan, X., & Qayyum, A. (2021). Adoption of mobile food ordering apps for O2O food delivery services during the COVID-19 outbreak. *British Food Journal*.

Shrestha, N. (2021). Factor Analysis as a Tool for Survey Analysis. *American Journal of Applied Mathematics and Statistics,* 9(1), 4-11. https://doi.org/10.12691/ajams-9-1-2

Statisa. (2022a). *Statistics.* Retrieved from Statisa Website:

https://www.statista.com/statistics/558867/number-of-mobile-internet-user-in-south-africa/

Statisa. (2022b). *Statistics.* Retrieved from Statisa Website: https://www.statista.com/statistics/1294689/global-mobile-app-downloads-growth-by-region/

Statisa. (2022c). *Statistics.* Retrieved from Statisa Website: https://www.statista.com/statistics/370516/unemployment-rate-in-south-africa/#:~:text=In%202021%2C%20the%20unemployment%20rate,in%202021%20with%2033.56%20percent.

Stats SA. (2022). *Statistical Release.* Retrieved from Stat SA Website*: https://www.statssa.gov.za/publications/P0211/P02112ndQuarter2022.pdf*

Taherdoost, H. (2016). Validity and reliability of the research instrument; how to test the validation of a questionnaire/survey in a research. *How to test the validation of a questionnaire/survey in a research.*

Tandon, A., Kaur, P., Bhatt, Y., Mäntymäki, M., & Dhir, A. (2021). Why do people purchase from food delivery apps? A consumer value perspective. *Journal of Retailing and Consumer Services, 63*, 102667.

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International journal of medical education, 2*, 53.

Tavakol, M. & Wetzel, A. (2020). Factor Analysis: a means for theory and instrument development in support of construct validity. *International Journal of Medical Education.* 11, 245-247

Tran, V. D. (2021). Using Mobile Food Delivery Applications during the COVID-19 Pandemic: Applying the Theory of Planned Behavior to Examine Continuance Behavior. *Sustainability*, 13(21), 12066. https://doi.org/10.3390/su132112066

Troise, C., O'Driscoll, A., Tani, M., & Prisco, A. (2020). Online food delivery services and behavioural intention – a test of an integrated TAM and TPB framework. *British Food Journal*, 123(2), 664–683. https://doi.org/10.1108/BFJ-05-2020-0418

Tueanrat, Y., Papagiannidis, S., & Alamanos, E. (2021). Going on a journey: A review of the customer journey literature. *Journal of Business Research*, 125, 336–353. https://doi.org/10.1016/j.jbusres.2020.12.028

VanVoorhis, C. W., & Morgan, B. L. (2007). Understanding power and rules of thumb for determining sample sizes. *Tutorials in quantitative methods for psychology*, *3*(2), 43-50.

Varnali, K. (2019). Understanding customer journey from the lenses of complexity theory. *The Service Industries Journal*, 39(11–12), 820–835. https://doi.org/10.1080/02642069.2018.1445725

Vinaik, A., Goel, R., Sahai, S., & Garg, V. (2019). The study of interest of consumers in mobile food ordering apps. *International Journal of Recent Technology and Engineering*, *8*(1), 3424-3429.

Watkins, M. W. (2018). Exploratory Factor Analysis: A Guide to Best Practice. *Journal of Black Psychology*, 44(3), 219–246. https://doi.org/10.1177/0095798418771807

Yang, S., Chen, H., Wu, J., Guo, B., Zhou, J., Yuan, C., & Jia, P. (2022). Impacts of COVID-19 Lockdown on Food Ordering Patterns among Youths in China: The COVID-19 Impact on Lifestyle Change Survey. *Obesity Facts*, *15*(2), 135-149.

Zanetta, L. D. A., Hakim, M. P., Gastaldi, G. B., Seabra, L. M. A. J., Rolim, P. M., Nascimento, L. G. P., & da Cunha, D. T. (2021). The use of food delivery apps during the COVID-19 pandemic in Brazil: The role of solidarity, perceived risk, and regional aspects. *Food Research International*, *149*, 110671.

Zhao, Y., & Bacao, F. (2020). What factors determining customer continuingly using food delivery apps during 2019 novel coronavirus pandemic period? *International journal of hospitality management*, *91*, 102683.

Zikmund, W. G., Babin, B. J., Carr, J. C. & Griffin, M. (2010). *Business Research Methods (8th Edition).* South-Western, Canada: CENGAGE Learning.

Zion, A., Spangler, J., & Hollmann, T. (2019). Food Delivery Apps: Usage and Demographics—Winners, Losers and Laggards. *Zion and Zion.* https://www.

zionandzion. com/research/food-delivery-apps-usage-and-demographicswinners-losers-and-laggards

APPENDIX A: Survey qu**estionnaire**

Dear Participant,

I am currently a student at the University of Pretoria's Gordon Institute of Business Science and completing my research in partial fulfilment of an MBA. I am conducting research on the influence of COVID-19 on customer journey of mobile food ordering application users in South Africa.

Customer Journey refers to the path of interactions an individual has with a product or service and includes previous experience, the current customer experience and the future experience, all tied with a feedback loop. Each experience is made up of pre-purchase touchpoints, such as consideration, recognition, and the search; purchase touchpoints which include choice and ordering; and lastly, post-purchase touchpoints which include consumption, engagement, service requests and usage.

To that end, I would greatly appreciate if you could participate in the survey by completing the below online questionnaire, which should take no more than 10 minutes of your time. Your participation is voluntary, and you can withdraw without penalty. Your participation is anonymous, and only aggregated data will be reported. By completing the survey, you indicate that you voluntarily participate in this research. If you have any concerns, please contact my supervisor or me.

Our details are provided below.

Researcher name: 11115719

Email: 11115719@mygibs.co.za

Phone: 0735211977

 Researcher Supervisor: Hugh Myres

Email: hmyres@gibs.co.za

Researcher Supervisor: Hugh Myres

Email: hmyres@gibs.co.za

	Qualifying question						
1.	Are you 18 years of age or older?	Yes	No				

	Section 1: Demographics						
2.	Please select your age range (select one)	18 – 25	25 – 35	35 – 55	55 – 75	75 – older	
3.	Which gender do you identify with most?	Male	Female	Other	Prefer not to say		
4.	What is your highest level of education?	Primary School	High School	Tertiary	Other		
5.	How many members in your household?	1	2	3	4	5	Above 6

	Section 2: Customer Journey						
6.	I consider the pre-purchase experience a critical part of my total customer journey/experience	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
7.	I consider the purchase experience a critical part of my total customer journey/experience	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
8.	I consider the post-purchase experience a critical part of my total customer journey/experience	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
9.	I consider the pre-purchase experience more important than the purchase and post-purchase experience of my customer journey	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	

10.	I consider the purchase experience more important than the pre-purchase and post-purchase experience of my customer journey	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
11.	I consider the post-purchase experience more important than the pre-purchase and purchase experience of my customer journey	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Section 3: Online food ordering applications							
12.	How often do you use online food ordering applications?	At least once a day	At least two to three times a week	At least once a week	At least once a month	At least once a year	
13.	On what device do you access online food ordering applications?	Apple mobile device	Samsung mobile device	Other mobile device	Personal computer/laptop	Work computer/ laptop	
14.	I typically use more than one online food ordering application	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
15.	I am satisfied with my online food ordering application customer journey/experience	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
16.	The online food ordering application I use influences my pre-purchase experience significantly	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
17.	The online food ordering application I use influences my purchase experience significantly	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
18.	The online food ordering application I use influences my post-purchase	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	

	experience significantly					
19.	the online food ordering applications' customer experience influenced the decisions I made pre-COVID-19	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
20.	Online food ordering applications significantly influence the decisions I make throughout my customer journey today	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
21.	My usage of online food ordering applications has increased since the start of the COVID-19 pandemic?	Yes	No	Maybe		
Section 4: COVID-19						
22.	COVID-19 has changed my expectations from online food ordering applications	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
23.	COVID-19 has increased my usage of online food ordering applications	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
24.	COVID-19 has reduced the quality of service I experience while using online food ordering applications	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
25.	My online food ordering applications customer journey/experience has been negatively influenced by COVID-19	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
26.	My impression of the online food ordering applications has improved since the beginning of the COVID-19 pandemic	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
27.	My impression of the online food ordering application partners and	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

	restaurant businesses who make use of the platform has improved as a result of the COVID-19 pandemic					
28.	COVID-19 has influenced the pre-purchase touchpoint in my customer journey negatively	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
29.	COVID-19 has influenced the purchase touchpoint in my customer journey negatively	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
30.	COVID-19 has influenced the post-purchase touchpoint in my customer journey negatively	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
31.	Before COVID-19 I was not aware of the influence of online food ordering applications on my decisions throughout the customer journey	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	

APPENDIX B: Ethichal clearance approval
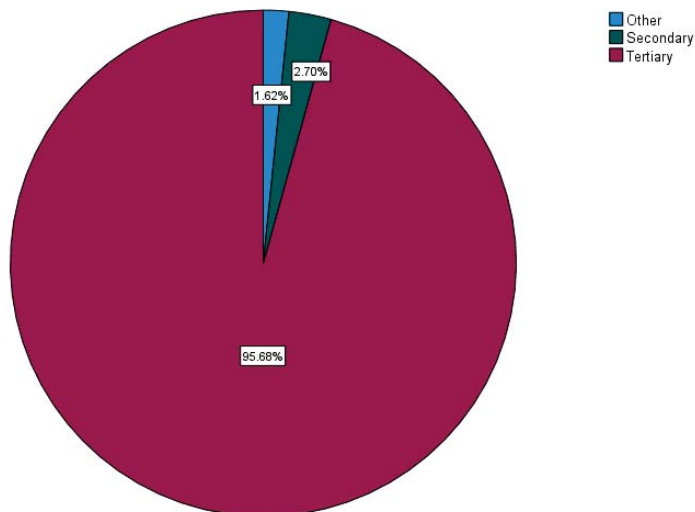

APPENDIX C: Statistics

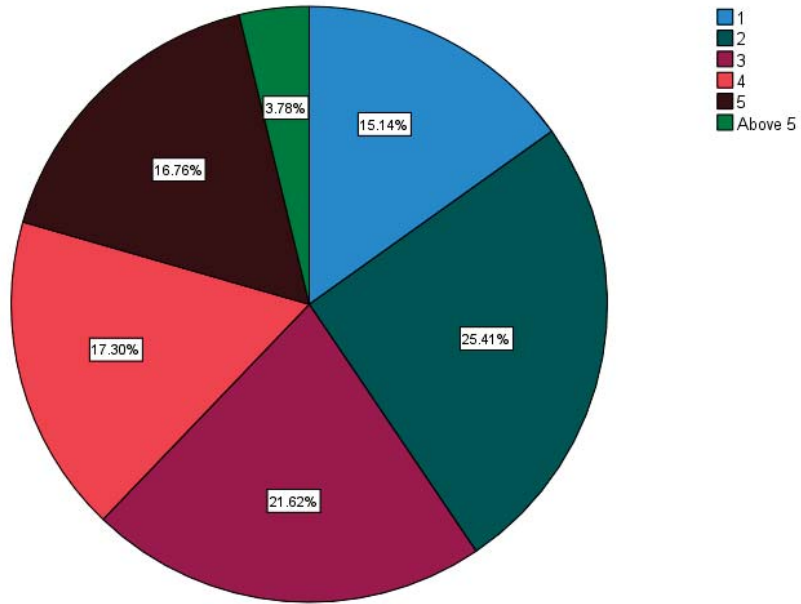**Figure 12: Education level of the sample**

Figure 13: Number of members per household of the sample
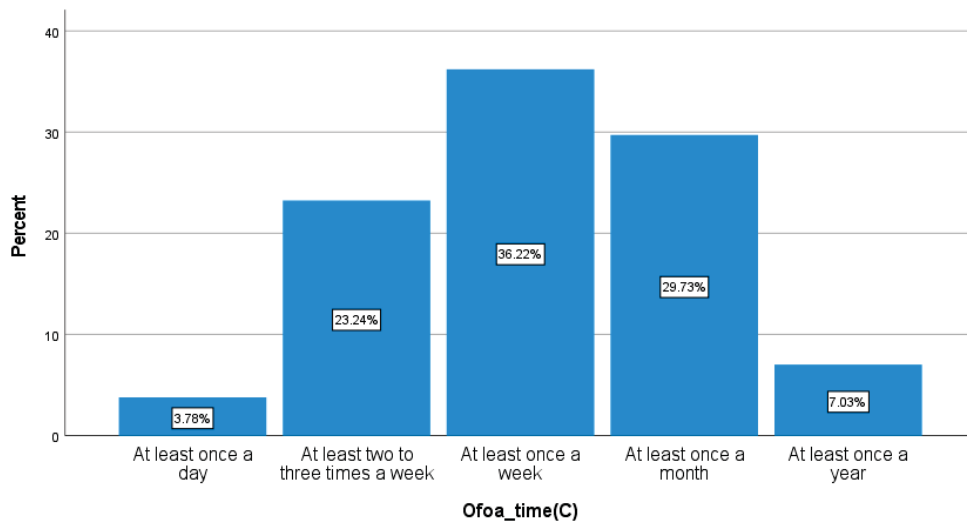

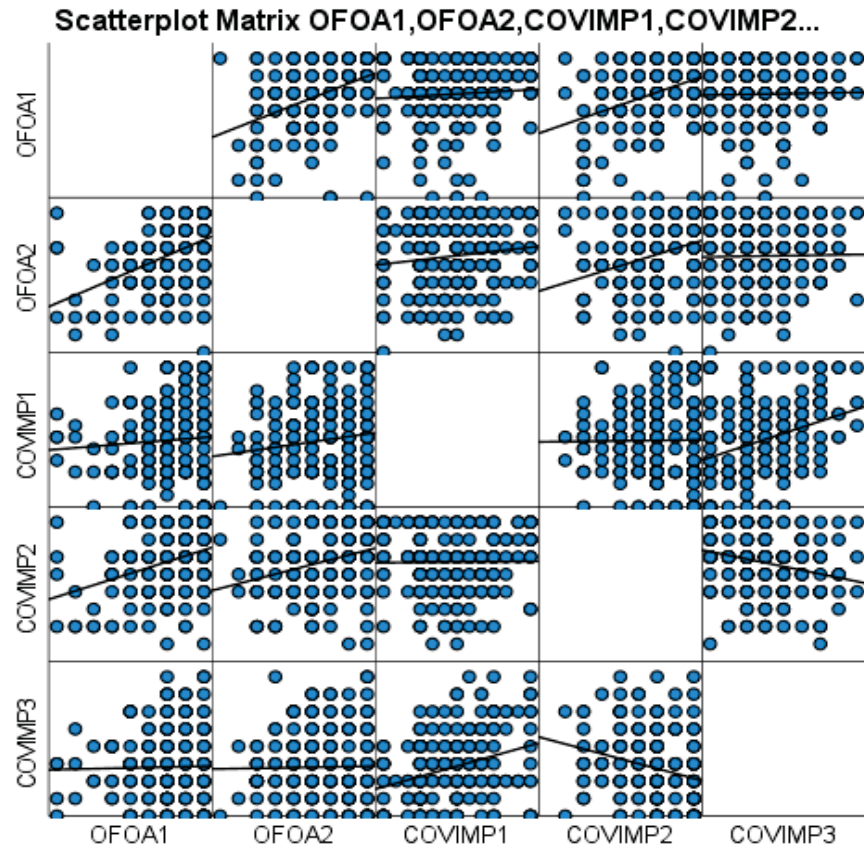**Figure 114: Frequency online food ordering application use of the sample**

Figure 15: Scatterplots for summated scales

Timestamp	Var_num	of_age	age	gender	education	household	Prep_exp	
8/4/2022 1:07:09		1	1	2	2	3	1	2
8/4/2022 22:52:15		2	1	1	2	2	3	3
8/4/2022 22:54:26		3	1	2	1	3	3	5
8/4/2022 22:54:27		4	1	2	1	3	3	5
8/4/2022 23:00:27		5	1	2	1	3	1	5
8/4/2022 23:02:36		6	1	3		3	3	4
8/4/2022 23:07:49		7	1	2	2	3	2	4
8/4/2022 23:08:29		8	1	3		3	1	1
8/4/2022 23:18:39		9	1	2	1	3	4	5
8/5/2022 0:29:50		10	1	2	2	3	3	3
8/5/2022 4:25:27		11	1	2	1	3	3	4
8/5/2022 5:32:13		12	1	1		3		3
8/5/2022 6:02:10		13	1	2	2	3	2	5
8/5/2022 6:40:50		14	1	4	1	3		5
8/5/2022 8:03:50		15	1	2	1	3	1	5
8/5/2022 8:10:19		16	1	2	1	3	1	4
8/5/2022 8:13:03		17	1	1	1	3	4	5
8/5/2022 9:40:09		18	1	3	1	3	3	5
8/5/2022 9:53:59		19	1	3		3	5	5
8/5/2022 11:10:36		20	1	2	1	3	2	5
8/5/2022 11:14:41		21	1	1	2	2	2	4
8/5/2022 11:19:27		22	1	2	1	3	2	4
8/5/2022 12:10:52		23	1	3	2	3	1	5
8/5/2022 13:11:53		24	1	3	1	3	5	5
8/5/2022 13:12:31		25	1	3	1	3	3	3
8/5/2022 15:16:57		26	1	2	1	3		5
8/5/2022 15:19:25		27	1	2	2	3	4	5
8/5/2022 15:23:35		28	1	1	1	3	2	5
8/5/2022 16:27:41		29	1	2	1	3	2	2
8/5/2022 17:51:10		30	1	3	1	3	1	4
8/5/2022 18:04:04		31	1	3	1	3	5	5
8/5/2022 18:32:28		32	1	2	1	3	4	5
8/5/2022 18:41:39		33	1	3	1	3	4	4
8/5/2022 18:57:19		34	1	3	2	3	4	5
8/5/2022 18:57:52		35	1	3	1	3	4	3
8/5/2022 19:08:15		36	1	2	1	3	4	5
8/5/2022 19:09:03		37	1	2	1	3	2	3
8/5/2022 19:11:57		38	1	2	1	3	2	5
8/5/2022 19:15:19		39	1	3		3	2	5

Figure 126: Raw data extract

Coding

Question from Survey	Scaling	Comments
1. Are you 18 years of age or older?	0: No 1: Yes	Column not necessary
2. Please select your age range (select one)	1: 18 – 25 2: 25 – 34 3: 35 – 54 4: 55 – 75	
3. Which gender do you identify with most?	1: Female 2: Male	
4. What is your highest level of education?	1: Primary 2: Secondary 3: Tertiary 0: other	
5. How many members in your household?	6: Above 6	Below six, remains as is
6. I consider the pre-purchase experience a critical part of my total customer journey/experience.	1: Strongly disagree 2: Disagree 3: Neutral 4: Agree 5: Strongly agree	
7. I consider the purchase experience a critical part of my total customer journey/experience.	1: Strongly disagree 2: Disagree 3: Neutral 4: Agree 5: Strongly agree	
8. I consider the post-purchase experience a critical part of my total customer journey/experience.	1: Strongly disagree 2: Disagree 3: Neutral 4: Agree 5: Strongly agree	
9. I consider the pre-purchase experience more important than the purchase and post-purchase experience of my customer journey.	1: Strongly disagree 2: Disagree 3: Neutral 4: Agree 5: Strongly agree	
10. I consider the purchase experience more important than the pre-purchase and post-purchase experience of my customer journey.	1: Strongly disagree 2: Disagree 3: Neutral 4: Agree 5: Strongly agree	
10. I consider the post-purchase experience more	1: Strongly disagree 2: Disagree 3: Neutral 4: Agree	

Variables redefined

Question from Survey	Variable Name	
1. Are you 18 years of age or older?	Ol_num	
2. Please select your age range (select one)	Age	
3. Which gender do you identify with most?	Gender	
4. What is your highest level of education?	Education	
5. How many members in your household?	Household	
6. I consider the pre-purchase experience a critical part of my total customer journey/experience.	Prep_exp	Construct 1: Customer Journey
7. I consider the purchase experience a critical part of my total customer journey/experience.	P_exp	Construct 1: Customer Journey
8. I consider the post-purchase experience a critical part of my total customer journey/experience.	Pop_exp	Construct 1: Customer Journey
9. I consider the pre-purchase experience more important than the purchase and post-purchase experience of my customer journey.	Prep_imp	Construct 1: Customer Journey
10. I consider the purchase experience more important than the pre-purchase and post-purchase experience of my customer journey.	P_imp	Construct 1: Customer Journey
10. I consider the post-purchase experience more important than the pre-purchase and purchase experience of my customer journey.	Pop_imp	Construct 1: Customer Journey
11. How often do you use Online Food Ordering Applications?	Ofoa_time	
12. On what device do you access Online Food Ordering Applications?	Ofoa_device	
13. I typically use more than one Online Food Ordering Application.	Ofoa_num	
14. I am satisfied with my overall Online Food Ordering Application customer journey/experience.	Ofoa_satis	Construct 2: OFOA
15. The Online Food Ordering Application I use influences my pre-purchase experience significantly.	Ofoa_prep	Construct 2: OFOA
16. The Online Food Ordering Application I use influences my purchase experience significantly.	Ofoa_p	Construct 2: OFOA
17. The Online Food Ordering Application I use influences my post-purchase experience significantly.	Ofoa_pop	Construct 2: OFOA
18. The Online Food Ordering Applications' overall customer experience influenced the decisions I made pre COVID-19.	Ofoa_overall	Construct 2: OFOA
19. Online Food Ordering Applications significantly influence the decisions I make throughout my customer journey today.	Ofoa_decision	Construct 2: OFOA
20. My usage of Online Food Ordering Applications has increased since the start of the COVID-19 pandemic?	Ofoa_increase	Construct 2: OFOA
21. COVID-19 has changed my expectations from Online Food Ordering Applications.	Cov_expect	Construct 3: COVID Impact

Figure 17: Codebook extract

	Name	Type	Width	Decimals	Label	Values	Missing
1	Timestamp	Date	20	0	Timestamp	None	None
2	Var_num	Numeric	3	0	Var_num	None	None
3	of_age	Numeric	1	0	of_age	None	None
4	age	Numeric	1	0	age	{1, 18-24 ye...	None
5	gender	Numeric	1	0	gender	{1, Female}...	None
6	education	Numeric	1	0	education	{0, Other}...	None
7	household	Numeric	1	0	household	{6, Above 6}...	None
8	Prep_exp	Numeric	1	0	Prep_exp	None	None
9	P_exp	Numeric	1	0	P_exp	None	None
10	Pop_exp	Numeric	1	0	Pop_exp	None	None
11	Prep_imp	Numeric	1	0	Prep_imp	None	None
12	P_imp	Numeric	1	0	P_imp	None	None
13	Pop_imp	Numeric	1	0	Pop_imp	None	None
14	Ofoa_time_C	Numeric	1	0	Ofoa_time(C)	{1, At least o...	None
15	ofoa_device...	Numeric	1	0	ofoa_device (C)	{1, Apple m...	None
16	ofoa_num	Numeric	1	0	ofoa_num	None	None
17	ofoa_satis	Numeric	1	0	ofoa_satis	None	None
18	ofoa_prep	Numeric	1	0	ofoa_prep	None	None
19	ofoa_p	Numeric	1	0	ofoa_p	None	None
20	ofoa_pop	Numeric	1	0	ofoa_pop	None	None
21	ofoa_overall	Numeric	1	0	ofoa_overall	None	None
22	ofoa_decisi...	Numeric	1	0	ofoa_decision	None	None
23	ofoa_increa...	Numeric	1	0	ofoa_increase (...	{1, Yes}...	None
24	cov_expect	Numeric	1	0	cov_expect	None	None
25	cov_ofoa_inc	Numeric	1	0	cov_ofoa_inc	None	None
26	cov_ofoa_dec	Numeric	1	0	cov_ofoa_dec	None	None
27	ofoa_overall...	Numeric	1	0	ofoa_overall_cov	None	None
28	ofoa_imp_cov	Numeric	1	0	ofoa_imp_cov	None	None
29	ofoa_bus	Numeric	1	0	ofoa_bus	None	None
30	cov_prep_tp	Numeric	1	0	cov_prep_tp	None	None
31	cov_p_tp	Numeric	1	0	cov_p_tp	None	None
32	cov_pop_tp	Numeric	1	0	cov_pop_tp	None	None
33	cov_ofoa_a...	Numeric	1	0	cov_ofoa_aware	None	None
34	z_Prep_exp	Numeric	5	2	Standardized v...	None	None
35	z_P_exp	Numeric	5	2	Standardized v...	None	None
36	z_Pop_exp	Numeric	5	2	Standardized v...	None	None
37	z_Prep_imp	Numeric	5	2	Standardized v...	None	None
38	z_P_imp	Numeric	5	2	Standardized v...	None	None
39	z_Pop_imp	Numeric	5	2	Standardized v...	None	None

Figure 18: Sample of data records- no missing data