

https://dspace.org/

To investigate the role of the 3R’s (review, rating and recommendation systems) in shaping overall online customer experience

Louw, Claudette

2024

University of the Witwatersrand, Johannesburg

https://hdl.handle.net/10539/43928

Louw, Claudette. (2024). To investigate the role of the 3R’s (review, rating and recommendation systems) in shaping overall online customer experience [Master’s dissertation, University of the Witwatersrand, Johannesburg].WireDSpace.https://hdl.handle.net/10539/43928

Downloaded from a DSpace repository. https://dspace.org/

To investigate the role of the 3R's (review, rating and recommendation systems) in shaping overall online customer experience.

Claudette Louw

334600

Student email: 334600@students.wits.ac.za

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

Johannesburg, 2024

Research Supervisor: Adheesh Budree

ABSTRACT

This study aimed to explore the role of review, rating, and recommendation systems (3Rs) in shaping the overall online customer shopping experience within the South African Business-to-Consumer (B2C) online shopping landscape. The theoretical framework of the study was based on the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) framework and the Valence Framework, grounded in the context of the dynamic and evolving nature of e-commerce. The study aimed to understand the multifaceted dimensions of online customer experience, including social presence, habit formation, and performance expectancy.

Data collection involved using a quantitative research method to survey individuals who considered themselves to regularly use online shopping channels in South Africa. An online questionnaire was distributed using a convenience sampling approach, which resulted in a sample size of 268 online shoppers. The key findings of the study indicated that review, rating, and recommendation systems do play a pivotal role in enhancing the online customer shopping experience. Specifically, these systems were identified as contributing factors in cultivating social presence, molding habit formation, and positively impacting performance expectancy. Holistically, these systems either as independent or combined capabilities, influence the online shopping experience of customers.

This study highlighted that review, rating, and recommendation systems present opportunities for businesses to strategically enhance the online customer shopping experience. Businesses that concede to the influence of user-generated content on social presence, habit formation, and performance expectancy, can customize their strategies to meet the evolving expectations of online shoppers. The findings presented in the study could enable businesses, researchers, and policymakers to navigate the complexities of e-commerce and

social commerce, ultimately enhancing the overall online customer shopping experience.

KEYWORDS

Online shopping, online reviews, online product rating, online product recommendations, business to consumer (B2C), social presence, performance expectancy, habit formation, e-commerce.

DECLARATION

I, Claudette Annilisa Louw, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in the field of Digital Business at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Name: Claudette Annilisa Louw Signature: CLouw

Signed at: Aspen Hills Nature Reserve, Johannesburg, Gauteng

ACKNOWLEDGEMENTS

I would like to extend my gratitude to my research supervisor Adheesh Budree for his insight, guidance, encouragement, and support throughout the research process.

I extend my thanks to my employers at Nedbank South Africa, Stanlib and Hyphen Technology for their support throughout this journey.

I am thankful for the syndicate groups I was assigned to during this process. Each person's experience and perspective enriched the learning process and stimulated the most memorable conversations.

To my sister Trevonica Naidu, an MBA graduate who was awarded the prestigious researcher of the year award during her year of study, thank you for setting the bar high in terms of personal and academic performance and for your constant motivation throughout my academic and life journey. The examples you set throughout my life helped me aim higher and do better.

To my great big family who willingly participated and supported the research study and who freely shared their experiences and insights, thank you for finding the time in your busy lives to be part of the process.

To Last Mamvura, one of the most brilliant statisticians I have ever worked with, thank you for teaching me how to interpret and understand data. I could never have completed this paper without you.

Finally, my deepest and most sincere thanks to my husband Wynand Louw, a double master's graduate, for his willingness and eagerness to be part of this process, for the constructive and collaborative discussions and for his valuable insights which significantly enriched the content of this paper. Thank you for your constant encouragement and understanding, for being my greatest supporter in all the goals I set for myself and for always helping me find "the calm in the chaos".

TABLE OF CONTENTS

ABSTRACT ..... **ii**

KEYWORDS ..... **iv**

DECLARATION ..... **v**

ACKNOWLEDGEMENTS ..... **vi**

LIST OF TABLES ..... **xi**

LIST OF FIGURES ..... **xiii**

LIST OF ACRONYMS ..... **xiv**

CHAPTER 1. INTRODUCTION **1**

1.1 STATEMENT OF PURPOSE 1
1.2 BACKGROUND OF THE STUDY 1
1.2.1 E-COMMERCE BUSINESS MODELS EXPLAINED 2
1.2.2 THE SOUTH AFRICAN E-COMMERCE CONTEXT SPECIFIC TO B2C 3
1.3 RESEARCH PROBLEM 5
1.4 RESEARCH OBJECTIVES 6
1.5 RESEARCH QUESTIONS 6
1.5.1 RESEARCH SUB-QUESTIONS 7
1.6 RATIONALE 7
1.7 DELIMITATIONS OF THE STUDY 8
1.8 DEFINITION OF TERMS 8
1.9 ASSUMPTIONS 9
1.10 CHAPTER OUTLINE 10

CHAPTER 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK 11

2.1 INTRODUCTION 11
2.2 DEFINITION OF TOPIC AND BACKGROUND DISCUSSION 11
2.2.1 ONLINE REVIEWS 12

2.2.2 Online ratings 13
2.2.3 Online recommendations 13
2.2.4 Online customer experience 14
2.3 The role of online reviews, ratings, and recommendations in creating social presence 14
2.3.1 The relationship between online reviews, ratings, recommendations, and social presence 14
2.3.2 Social presence and online shopping experience 16
2.3.3 Hypothesis 1 18
2.4 The role of review, rating and recommendation in improving perceived performance of the online shopping site 18
2.4.1 Review, rating and recommendation systems and habit formation. 18
2.4.2 Performance expectancy and online shopping experience 20
2.4.3 Hypothesis 2 21
2.5 The role of review, rating and recommendation systems in online habit formation 21
2.5.1 Review, rating and recommendation systems and habit formation 21
2.5.2 Habit formation and online shopping experience 23
2.5.3 Hypothesis 3 24
2.6 ANALYTICAL FRAMEWORK 24
2.6.1 Theoretical Framework 25
2.6.2 Conceptual Framework 30
2.7 Conclusion of Literature Review 32

CHAPTER 3. RESEARCH METHODOLOGY 33

3.1 Research approach 33
3.2 Research design 34
3.3 Data collection methods 35
3.4 Population and sample 37
3.4.1 Population 37
3.4.2 Sample and sampling method 38
3.5 The research instrument 39
3.6 Procedure for data collection 40
3.7 Data analysis strategies and interpretation 41
3.8 Possible limitations and challenges of the study 42
3.9 Quality Assurance 43
3.9.1 External validity 43
3.9.2 Internal validity 43
3.9.3 Reliability 44
3.10 Ethical considerations 44
3.11 Chapter conclusion 45

CHAPTER 4. RESEARCH RESULTS 46

4.1 INTRODUCTION 46
4.2 SAMPLE CHARACTERISTICS AND DEMOGRAPHIC INFORMATION 46
4.2.1 RESPONDENTS' AGE CATEGORY 47
4.2.2 GENDER 48
4.2.3 LEVEL OF EDUCATION 49
4.2.4 AREA OF RESIDENCE 49
4.2.5 FREQUENCY OF ONLINE SHOPPING 50
4.3 DESCRIPTIVE STATISTICS 51
4.3.1 ONLINE PRODUCT REVIEWS (OR) 52
4.3.2 ONLINE PRODUCT RATINGS (ORN) 52
4.3.3 ONLINE PRODUCT RECOMMENDATIONS (ORC) 53
4.3.4 SOCIAL PRESENCE (SP) 54
4.3.5 PERFORMANCE EXPECTANCY (PE) 55
4.3.6 HABIT FORMATION (HF) 56
4.3.7 ONLINE SHOPPING EXPERIENCE (OSE) 57
4.4 ASSESSMENT OF NORMALITY 58
4.5 EXPLORATORY FACTOR ANALYSIS (EFA) 59
4.5.1 RELIABILITY AND VALIDITY ANALYSIS 63
4.6 RESULTS OF MODEL TESTING 66
4.6.1 CFA MODEL TESTING 67
4.6.2 GOODNESS OF FIT INDICES 68
4.6.3 FINAL STRUCTURAL MODEL TESTING 70
4.7 RESULTS PERTAINING TO HYPOTHESES 72
4.8 CHAPTER CONCLUSION 74

CHAPTER 5. DISCUSSION OF THE RESULTS 76

5.1 INTRODUCTION 76
5.2 DISCUSSION PERTAINING TO HYPOTHESIS 1 77
5.3 DISCUSSION PERTAINING TO HYPOTHESIS 2 (H2) 79
5.4 DISCUSSION PERTAINING TO HYPOTHESIS 3. 81
5.5 CHAPTER CONCLUSION 83

CHAPTER 6. CONCLUSIONS AND RECOMMENDATIONS 85

6.1 INTRODUCTION 85
6.2 CONCLUSIONS REGARDING THE ROLE OF REVIEW, RATING, AND RECOMMENDATION SYSTEMS IN CREATING ONLINE SOCIAL PRESENCE 85
6.3 CONCLUSIONS ON THE ROLE OF REVIEW, RATING, AND RECOMMENDATION SYSTEMS IN INFLUENCING PERFORMANCE EXPECTANCY OF ONLINE SHOPPING SITES 87

6.4 CONCLUSIONS REGARDING THE ROLE OF REVIEW, RATING, AND RECOMMENDATION SYSTEMS IN ONLINE HABIT FORMATION. 88
6.5 CONCLUSIONS ON THE ROLES OF THE 3RS IN ENHANCING OVERALL ONLINE SHOPPING EXPERIENCE. 89
6.6 RECOMMENDATIONS 90
6.7 SUGGESTIONS FOR FURTHER RESEARCH 92

REFERENCES 94

APPENDIX A: RESPONDENT INFORMATION SHEET 104
APPENDIX B: ACTUAL INSTRUMENT 106
APPENDIX C: STATISTICAL TABLES 110
APPENDIX D: ETHICS APPROVAL 124

LIST OF TABLES

Table 1: Research instrument 40

Table 2: Descriptive statistics: OR 52

Table 3: Descriptive statistics: ORN 53

Table 4: Descriptive statistics: ORC 54

Table 5: Social presence (SP) 55

Table 6: Descriptive statistics (PE) 56

Table 7: Descriptive statistics: HA 57

Table 8: Descriptive statistics (OSE) 58

Table 9: Normality Assessment 59

Table 10: KMO and Bartlett's Test 60

Table 11: Total Variance Explained 61

Table 12: Rotated component matrix 62

Table 13: Reliability and validity assessment 64

Table 14: Discriminant validity 65

Table 15: Model fit indices 69

Table 16: Summarised Model results 72

Table 17: Summary of hypotheses 83

LIST OF FIGURES

Figure 1: E-commerce business models 2

Figure 2: The UTAUT2 29

Figure 3: Conceptual Framework 31

Figure 4: Age group 48

Figure 5: Gender 48

Figure 6: Level of education 49

Figure 7: Area of residence 50

Figure 8: Frequency of online shopping 51

Figure 9: CFA measurement model 68

Figure 10: Hypothesised Model 71

LIST OF ACRONYMS

3RS	Review, Rating and Recommendation
B2B	Business – to- Business
B2C	Business -to- Consumers
B2G	Business-to-Government (B2G)
C2B	Consumer-to-Business (C2B)
C2C	Consumer-to-Consumer (C2C)
C2G	Consumer-to-Government (C2G)
CFA	Confirmatory Factor Analysis
EFA	Exploratory Factor Analysis
PCA	Principal Components Analysis
SEM	Structural Equation Modelling
UGC	User Generated Content
UTAUT2	Unified Theory of Acceptance and Use of Technology

CHAPTER 1. INTRODUCTION

1.1 Statement of purpose

Online channels have grown significantly in recent years with e-commerce capabilities transforming traditional shopping methods (Rosário & Raimundo, 2021). Resultantly, large amounts of products and data are now available through these channels which can create information overload in certain markets (Lv & Liu, 2022). This can give rise to an increase in search costs for the consumer as they attempt to make informed decisions without necessarily having the right knowledge or time to do so (Lv & Liu, 2022).

The theory of information cascades therefore suggests that where an individual is uncertain about a product or company's value proposition, the individual is most likely to respond based on the actions of others, believing that others are better informed (Liu et al., 2016; Liu et al., 2019b). User generated content such as reviews, product ratings and recommendations can therefore be useful to aid consumers in their decision making (Liu & Zhang, 2016; Liu et al., 2019).

This quantitative study investigated the role of review, rating and recommendation systems in shaping the online customer experience in South Africa when using Business-to-Customer (B2C) online shopping channels.

1.2 Background of the study

The term electronic commerce or e-commerce involves the buying and selling of tangible goods and services over the internet in multiple markets and segments (Semerádová & Weinlich, 2022). E-commerce is a highly competitive market enabling the sale and purchasing of almost anything through online channels (Rosário & Raimundo, 2021). For small businesses e-commerce has enabled access to a more cost-effective distribution capability as well as improved market

reach (Khan, 2023). For consumers, e-commerce has transformed the shopping experience, enabling easy access to a wide global variety of goods and services thus significantly disrupting the traditional retail industry (Rosário & Raimundo, 2021).

1.2.1 *E-Commerce Business Models Explained*

Different e-commerce business models can be adopted based on the goods and services offered by the organisation (Bloomenthal, 2023).

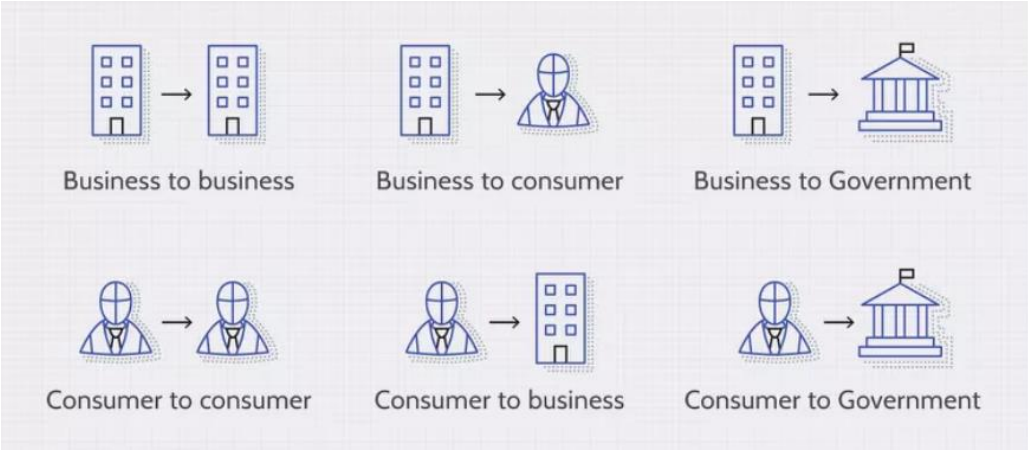


Figure 1: E-commerce business models

Source: Bloomenthal (2023).

- Business -to- Consumers (B2C) organisations sell directly to the end consumer and is the most common e-commerce business model.
- Business – to- Business (B2B) organisations sell goods directly to a user which in this model is another business. These types of models usually involve the sale of large volume and high variety products.
- Business-to-Government (B2G) contractors offer specialised goods and services to government agencies or administrators and are usually subject to rigorous tender selection processes.

- Consumer-to-Consumer (C2C) models create connections between consumers who are able to buy and sell their goods to each other, without the need for companies, on e-commerce platforms e.g. Facebook marketplace.
- Consumer-to-business (C2B) models enable consumers to engage directly with customers and offer their services. E-commerce platforms connect businesses with freelancers to improve consumer buying with regard to pricing, employment and scheduling.
- Consumer-to-Government (C2G) models enable consumers to interact directly with government entities through partnerships e.g. tax return capabilities.

1.2.2 *The South African e-commerce context specific to B2C*

South Africa has gradually gained traction in e-commerce over the last decade. The country's B2C e-commerce industry was in its infancy stages in 2019 with low adoption rates due to a lack of consumer trust arising from fears of theft, fraud, and last mile service delivery challenges (Agyare-Dwomoh ,2022). However, in 2020, e-commerce spending grew by 30% and traditional physical spending decreased by 12%. This growth was largely attributed to the COVID 19 national lockdown accelerating the traditional retail business to introduce e-commerce capabilities (Agyare-Dwomoh, 2022). The pandemic was successful in highlighting the convenience of e-commerce to consumers. Resultantly, the trend experienced in South Africa during the lock-down period is set to increase as consumers become more comfortable with the online shopping experience.

Technological advancement has signalled in a digital era where user-generated content (UGC), specifically in the form of online customer reviews, now plays a key role in shaping consumer behaviour and influencing online purchasing decisions (Hong et al., 2017). Peer-generated evaluations about products or services posted on retailer or third-party websites, otherwise known as online

reviews, are useful in providing consumers with valuable insights to navigate the uncertainty and perceived risks associated with online transactions (Floyd et al., 2014). Review information most often includes a star rating together with written comments explaining the user's experience and/or the critiques about specific product or service features. In an online shopping environment, consumers increasingly reference online reviews as a source of information, searching for authentic perspectives from consumers who have previously engaged with the product or feature through online shopping platforms (Chen et al., 2022).

User generated content is increasing in reliance. Studies conducted by Kang et al. (2020) and Chen and Ku (2021) have investigated the effects of online reviews on purchasing intentions. These studies have highlighted the influential role of the valence intensity of reviews. Reviews and ratings are therefore identified as critical sources of information guiding consumers in their online purchasing decisions.

Another significant trend in e-commerce is the emergence of recommender systems (Liu et al, 2019b; Cabrera-Sánchez et al., 202; Roy & Dutta, 2022). Recommender systems function to identify and leverage appropriate information from an online buyers' digital activity. This information is subsequently used to offer personalised product suggestions and recommendations during the consumers online shopping activity (Cabrera-Sánchez et al., 2020). The perception of review and recommendation helpfulness is therefore becoming an important aspect of the online shoppers decision-making process, aiding the consumer in reducing uncertainty and risks associated with online shopping (Hong et al., 2017).

The psychological process of consumer experiences in online shopping after engaging with online comments aligns with the factors determining the intention to use online shopping, as predicted by the Unified Theory of Acceptance and Use of Technology (UTAUT) (Hajli & Sims, 2015; Yahia et al., 2018). While existing literature has explored the outcomes and impacts of online reviews,

ratings, and recommendations on purchasing decisions, there is scarcity of evidence in understanding the underlying processes that shape the overall online shopping experience. Limited research exists on the processes involved in shaping the holistic customer experience during online shopping and how businesses can strategically leverage the trifecta of reviews, recommendations, and ratings (3Rs) to enhance customer satisfaction and loyalty (Kang et al., 2020; Chen and Ku, 2021; Wang et al., 2021; Chen et al., 2022). It is within this context that the present study was conducted.

1.3 Research Problem

In the dynamic landscape of B2C e-commerce, the transition towards fully automated sales processes and the proliferation of online information have significantly altered consumer behaviour, presenting challenges in informed decision-making due to information asymmetry and the phenomenon of choice overload (Statista, 2024). As technology platforms increasingly replace human contact in online transactions, consumers are confronted with an array of product choices, exacerbating the complexity of decision-making, and raising concerns about the perceived risk associated with making the wrong choices (Liu et al., 2019a; Lv & Liu, 2022).

The recent digital business environment creates a need for understanding the underlying processes that shape the overall online shopping experience and how businesses can strategically leverage review, rating, and recommendation systems (3Rs) to enhance customer interactions, alleviate decision-making complexity, foster social connections, and improve trust formation. The existing literature has primarily focused on the outcomes and impacts of online reviews, ratings, and recommendations on purchasing decisions (Ismagilova et al., 2020; Kang et al., 2020; Chen and Ku, 2021; Wang et al., 2021; Chen et al., 2022), but there is limited evidence in understanding the processes that influence the holistic customer experience during online shopping. Therefore, building from the Unified

Theory of Acceptance and Use of Technology 2 (UTAUT2) and the Valence Framework, this study aimed at understanding the complex processes involved in shaping the overall online shopping experience and recommending how businesses can effectively harness the power of the 3Rs to improve customer satisfaction and loyalty in the specific context of South African B2C online shopping.

1.4 Research Objectives

The objective of this study was to investigate the role of the 3Rs (online reviews, online product ratings and recommender systems) in shaping the overall online shopping experience. The study sought to explore how businesses can effectively harness the power of the 3Rs to improve customer interactions and satisfaction in the specific context of South African B2C online shopping. The UTAUT2 framework (Venkatesh et al, 2012), and the Valence Framework were used to guide the research process. Therefore, the key overarching objective was to understand how review, rating and recommendation systems can be used to strengthen the constructs of social presence, habit formation, and performance expectancy thereby strategically enhancing the online customer experience in South Africa when using B2C online shopping channels.

1.5 Research Questions

The study focused on answering the key research question: What role do review; rating and recommendation systems play in shaping the overall online customer experience? The study aimed to assess the influence of review, rating and recommendation systems on social presence, habit formation and performance expectancy which are key antecedents that influence the use of online shopping platforms.

1.5.1 *Research Sub-Questions*

- What role do review, rating and recommendation systems play in creating social presence?
- What role do review, rating and recommendation systems play in performance expectancy?
- What role do review, rating and recommendation systems play in online habit formation?

1.6 Rationale

Existing research has primarily concentrated on the outcomes and impacts of online reviews, ratings, and recommendations on purchasing decisions, offering limited insights into the underlying mechanisms that influence overall customer experience during online shopping (Kang et al., 2020; Chen and Ku, 2021; Wang et al., 2021; Chen et al., 2022). Therefore, the existing body of knowledge lacks an understanding of how businesses can strategically leverage the 3Rs to enhance customer interactions, alleviate decision-making complexity, foster social connections, and improve trust formation in the specific socio-economic and cultural context of South Africa.

This study could contribute to the body of knowledge on the processes involved in shaping the overall online shopping experience, adding a new dimension to existing theories (UTAUT2 and Valence Framework) and shift the understanding of consumer behaviour in a B2C e-commerce environment. The study can add value to various stakeholders, including online retailers, brand and marketing professionals, regulators, researchers and consumers, by adding to the understanding of the mechanisms that drive consumer behaviour in the South African B2C online shopping context.

In addition, this study could be of particular interest to organisations seeking to digitally optimise their online platforms, executives who seek to better understand

the complexities of e-commerce, as well as management professionals aiming to enhance the customer journey. Investigating the complexities of online consumer behaviour, may potentially offer insights that could be used to enhance management practices in digital businesses by enabling more informed decision-making especially given the ongoing evolving nature of the online retail environment. Ultimately, the study added a South African perspective to international research, enhancing the practice-oriented utility of managing B2C e-commerce.

1.7 Delimitations of the study

i. The research focussed on online shopping in a business to consumer context only. No other e-commerce models were evaluated.
ii. The research focused specifically on the influence of review, rating, and recommendation systems on only 3 aspects of the UTAUT2 (social presence, habit, performance expectance). No other UTAUT2 dimensions were analysed.
iii. The research focused on the online retail sector in South Africa only.

1.8 Definition of terms

i. *E-Commerce*: Ecommerce involves the buying and selling of tangible goods and services over the internet in multiple markets and segments (Rosário & Raimundo, 2021).
ii. *Online reviews*: Online customer reviews are peer-generated evaluations about products or services posted on retailer or third-party websites (Floyd et al., 2014). Rashid et al. (2022) defined reviews as the expressions of customer feedback regarding products or services, providing insights into quality, features, and performance of the product.

iii. *Online ratings*: Ratings are numerical or qualitative assessments of satisfaction or dissatisfaction with an online product or service (Hajli, 2015).
iv. *Online recommendations*: Recommendations are personalised endorsements shared by customers based on positive experiences (Cabrera-Sánchez et al., 2020).
v. *Online shopping experience*: Online customer experience is the comprehensive impression and interaction a user encounters while engaging with a digital platform or service (Barari et al., 2020).

1.9 Assumptions

The following assumptions were made:

i. The study assumed that online shoppers within the South African B2C context exhibit a certain degree of homogeneity in their behaviour. It was assumed that, despite individual variations, there are shared patterns and preferences among online shoppers that can be captured and analysed.

ii. The study assumed that the 3Rs – reviews, ratings, and recommendations – effectively contribute to shaping the online shopping experience. This assumption was grounded in the conceptual framework, which implied that these systems play a pivotal role in influencing social presence, habit formation, and performance expectancy.

iii. The study assumed a degree of stability in the South African B2C online shopping environment during the data collection period. It was assumed that external factors, such as changes in economic conditions, technological disruptions, or significant shifts in consumer behaviours, do not undergo drastic transformations that could impact the validity of the findings.

1.10 Chapter Outline

- Chapter 1 focused on outlining the purpose of the research and the background to the study. The chapter clarified the research problem, the research objectives as well as the rationale for undertaking the study. The chapter also included delimitations of the study, definition of key terms as well as the assumptions made in undertaking the research.
- Chapter 2 provided a literature review on the selected research topic, clarified each research objective, and described the conceptual and theoretical analytical framework which was used in the study.
- Chapter 3 focused on providing an overview of the research methodology used in this study. This chapter provided a description of the research approach, the research design, the data collection methods as well as targeted population and sample sizes used in the study. This chapter also included a description of the research instrument used, the procedure for data collection, analysis, and interpretation as well as any anticipated challenges and ethical considerations.
- Chapter 4 focused on presenting the results of the completed analysis and described them in line with the hypotheses formulated in Chapter 2.
- Chapter 5 focused on discussing and debating the results referencing the literature reviewed in Chapter 2.
- Chapter 6 concluded the study providing a succinct view of the researcher's recommendations after considering the data analysis undertaken in Chapters 4 and 5.

CHAPTER 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

This chapter provides an overview and definitions of review, rating and recommendation systems and discusses their influence on social presence, habit formation and performance expectancy within the context of online shopping. The background discussion of the topic is presented first, followed by hypothesis development. The development of the hypotheses was guided by the research objectives outlined in the preceding chapter. The analytical framework of the study is then discussed, focusing on the theoretical grounding of the study and the conceptual framework. The chapter is summarised at the end, listing all hypotheses formulated.

2.2 Definition of topic and background discussion

As businesses increasingly migrate towards digital platforms, the emphasis on optimising the online customer experience has become paramount (Yang, 2019). The online customer experience encompasses a multifaceted spectrum, ranging from the initial interaction with a website or application to the sustained engagement that fosters customer loyalty (Barari et al., 2020). In this digital era, where consumer choices are abundant, businesses are compelled to enhance their online interfaces to not only attract but also retain customers (Yeboah et al., 2023). The role of review, rating and recommendation systems (3R's) emerges as a critical aspect of this enhancement process, providing users with tailored insights, social validations, and streamlined decision-making pathways (Floyd et al., 2014; Hajli, 2015; Liu et al., 2019b; Rashid et al., 2022).

Barari et al. (2020) highlighted that the relevance of online customer experience transcends mere transactional engagements, extending into the other contexts such as factors that influence purchase intention including social presence, performance expectancy, and habit formation. The virtual sphere, as an evolving social space, prompts users to seek a sense of presence and connection. Social interactions facilitated by reviews, ratings, and recommendations could contribute significantly to the establishment of this social presence, creating a virtual environment where users feel connected and engaged (Yahia et al., 2018).

In seeking a seamless online experience, users develop performance expectancies, that is, anticipations regarding the efficiency, effectiveness, and overall functionality of a digital platform (Yeboah et al., 2023). The 3Rs, acting as navigational aids, may not only meet but might exceed these expectations, shaping users' perceptions of the platform's performance (Hajli, 2015).

Furthermore, the iterative nature of online interactions, coupled with the influence of 3Rs, contributes to the formation of user habits. The habitual use of online platforms, instigated and reinforced by the constant feedback loop of reviews, ratings, and recommendations, intricately weaves the user into the fabric of the digital environment (Alalwan, 2020).

This study investigated the dynamics of social presence, performance expectancy, and habit formation within the context of online customer experience, with a specific focus on the strategic implementation of 3Rs. Through a critical examination existing literature and empirical investigation of the relationship among these elements, this study sought to shed light on the mechanisms that underpin and enrich the online customer experience.

2.2.1 *Online reviews*

Reviews, defined as the expressions of customer feedback regarding products or services, encapsulate opinions that range from positive to negative, providing

invaluable insights into quality, features, and performance (Floyd et al., 2014; Rashid et al., 2022). Positive reviews foster trust and credibility, influencing purchasing decisions, while negative reviews can raise concerns and significantly impact the choices of prospective consumers. Research affirms the influence of trustworthy reviews on consumers' buying intentions, serving as influential factors in stimulating product sales (Rashid et al., 2022).

2.2.2 *Online ratings*

Ratings are numerical or qualitative assessments of satisfaction or dissatisfaction, employ scales such as stars or numbers to signify product or service quality. Higher ratings simplify decision-making for consumers and instil increased trust and confidence in the associated seller or brand (Hajli, 2015; Busalim, et al., 2023).

2.2.3 *Online recommendations*

Recommendations are personalised endorsements shared by customers based on positive experiences or alternatively systematically generated based on product sales performance (Cabrera-Sánchez et al., 2020). Disseminated through various channels, recommendations leverage social connections and trust between consumers, exerting a profound influence on social commerce. Studies affirm that the trust consumers place in product recommendations significantly influences their buying intentions (Rashid et al., 2022). The strategic integration of the 3Rs into the online customer experience necessitates an empirical investigation of these facets, acknowledging their multifaceted impact on consumer behaviour in the online shopping landscape.

2.2.4 *Online customer experience*

Online customer experience is the comprehensive impression and interaction a user encounters while engaging with a digital platform or service (Barari et al., 2020). In the contemporary digital landscape, the online customer experience has evolved into a critical determinant of success for businesses, as it directly influences customer satisfaction, loyalty, and subsequent purchasing behaviour (Dhaigude & Mohan, 2023). In the context of this study, online customer experience is construed as the holistic interaction and perception that consumers undergo while engaging in e-commerce or online buying activities. Online customer experience encompasses the entirety of the online journey, from the initial exploration of a website to the final purchase and extends to post-purchase interactions. The study focused on understanding how the the 3Rs shape this online shopping experience.

The following sections focus on hypothesis development. The hypotheses are developed aligning with the research objectives and aiming to contribute to the existing body of knowledge in the context of online consumer behaviour.

2.3 The role of online reviews, ratings, and recommendations in creating social presence

This section discusses literature related to the role of the 3Rs in creating social presence which in turn would improve overall online shopping experience.

2.3.1 *The relationship between online reviews, ratings, recommendations, and social presence*

Social presence, rooted in social presence theory is characterised by the existence of the human element in online interactions, reflecting human interpersonal relationships (Short et al., 1976). In essence, social presence

denotes the awareness of interaction partners during communications (Algharabat & Rana, 2021). Liu et al. (2019a) highlighted that high levels of social presence provide individuals with a sense of human warmth and sociability.

Examining social presence within the context of e-commerce, Lu et al. (2016) asserted that consumers perceive varying degrees of social presence when browsing e-commerce sites, particularly when engaging in personal, sociable, and warm interactions with other individuals in online environments. This recognition signifies the dynamic nature of social presence within the digital sphere.

Recommendations and referrals are pivotal elements influencing social presence and online community engagement (Sheikh et al., 2019; Alalwan et al., 2019). Consumers place significant trust in recommendations made by their peers on social media platforms, illustrating the profound impact of these social cues on shaping behaviour and fostering trust within online communities (Algharabat & Rana, 2021). Building upon these insights, Hsiao et al. (2010) found a positive association between ratings, forums, communities, interpersonal recommendations, and trust in the social commerce environment. The ability of customers to rate and review content on social media platforms stimulates engagement in social commerce, as these reviews and ratings are perceived as accurate and unbiased, fostering trust within the community (Algharabat & Rana, 2021).

Furthermore, Hajli and Sims (2015) found a significant relationship between social commerce constructs, including recommendations, referrals, ratings, and reviews, and social support. Social commerce, through these constructs, provides shoppers in online communities with both informational and emotional support, thereby influencing their buying intentions. Rashid et al. (2022) reinforced the integral role of social commerce constructs, such as reviews, ratings, referrals, and recommendations, in building consumers' trust in sellers, particularly in the context of the COVID-19 pandemic.

From the synthesis of literature on social presence and the 3Rs, it can be inferred that social presence in the online shopping environment is associated with elements such as recommendations, referrals, ratings, and reviews. These components not only shape the perception of social presence but also play a fundamental role in fostering trust, community engagement, and influencing consumers' buying intentions within the dynamic landscape of e-commerce (Hajli, 2015).

2.3.2 *Social presence and online shopping experience*

Pavlou et al. (2007) posited that the concept of social presence plays a crucial role in reducing the perceived social distance between buyers and sellers in online transactions, thereby fostering trust. The impact of social presence extends beyond the buyer-seller relationship in social commerce, where reviews and recommendations are predominantly contributed by peers (Hajli, 2015). When social presence is high, the social distance between consumers and their peers is likely to be reduced, contributing to the establishment of trustworthy relationships among members of the online community (Lu et al., 2016). High social presence within social commerce sites is associated with the inclusion of more interactive information and social cues, creating a transparent shopping environment. This transparency, as observed by Lu et al. (2016), instils confidence in consumers, making them more willing to engage in transactions as they perceive that untrustworthy behaviours are likely to be constrained. Consequently, this high level of trust positively influences consumers' attitudes towards these sites.

Moreover, according to social cognitive theory (Bandura, 1986), individual behavioural intentions are shaped not only by behaviour itself but also by cognitive processes and environmental factors. In the context of social commerce, the infusion of social features contributes to consumers' cognitive processes, enhancing the perception of personal, sociable, and sensitive human

contacts during online interactions (Boateng et al., 2016). Social features have the potential to increase traffic to social commerce websites and enhance consumers' overall shopping experience, thereby positively impacting their ultimate intention to make a purchase (Liu et al., 2019a). This aligns with the findings of Yeboah et al. (2023), who utilised social presence theory to predict online consumer engagement in emerging markets. The study found a positive relationship between social presence and online consumer engagement, emphasising the significance of social presence theory factors in understanding consumer behaviour and enhancing the online shopping experience within social commerce settings.

Furthermore, Lu et al. (2016) demonstrated that social presence factors, grounded in social technologies, significantly contribute to the establishment of trustworthy online exchange relationships. This acknowledgment affirms the positive role of the social dimension in shaping online purchase behaviours and provides theoretical evidence for the integration of social and commercial activities.

Social commerce presents consumers with increased opportunities for mutual support through information exchange and content generation via social media (Khwaja et al., 2019). The distinct nature of social commerce, compared to traditional e-commerce, is marked by more prevalent peer interactions during the purchase process, resulting in a higher degree of social presence (Liu et al., 2019a). While prior literature has demonstrated that social presence fosters trust in social commerce (Lu et al., 2016), the current study aimed to extend the discussion by examining the relationship between social presence resulting from reviews, recommendations, and ratings and its impact on the overall online shopping experience. This approach provides a broader perspective on the role of social presence in the context of online purchasing, stressing its influence on the dimensions of the online shopping experience.

Building upon the observations from literature, the following hypothesis was formulated:

2.3.3 *Hypothesis 1*

Hypothesis 1 (H1): Review, ratings and recommendations positively influence the creation of social presence, which in turn improves online shopping experiences.

Hypothesis 1a (H1a): Reviews positively influence the creation of social presence.

Hypothesis 1b (H1b): Ratings positively influence the creation of social presence.

Hypothesis 1c (H1c): Recommendations positively influence the creation of social presence.

Hypothesis 1d (H1d): Creation of social presence improves overall online shopping experiences.

2.4 The role of review, rating and recommendation in improving perceived performance of the online shopping site

This section reviews literature on the link between performance expectancy of an online shopping site and the 3Rs, as well as the influence on overall online shopping experiences.

2.4.1 *Review, rating and recommendation systems and habit formation.*

Performance expectancy refers to users' perceptions of the extent to which a particular technology or system will aid them in achieving their goals effectively (Venkatesh et al., 2003). The 3Rs could play a significant role in shaping users'

performance expectancy. Online reviews, as user-generated feedback on products or services, offer insights into the experiences of previous customers (Hong et al., 2017). Positive reviews contribute to the perception that the online buying platform performs well in delivering satisfactory products or services. Conversely, negative reviews may raise concerns about performance. Rashid et al. (2022) affirmed that consumers often rely on reviews to evaluate the performance of online platforms, considering them as crucial indicators of the platform's ability to meet their expectations.

Ratings, alongside reviews, contribute to the formation of users' performance expectancy. Numerical or qualitative assessments provided by customers through Likert scales or other rating mechanisms offer a quick and accessible means for users to gauge the overall quality and satisfaction associated with a product or service (King et al., 2014; Nadhifa, 2023). Higher ratings enhance the perception of positive performance, while lower ratings may cast doubts on the platform's ability to deliver a satisfactory experience (Busalim et al., 2023).

Recommendations, personalised endorsements from users who have had positive experiences with a product or service, further contribute to performance expectancy. Users often view recommendations as indicators of the platform's ability to align with their preferences and needs. Positive recommendations can elevate the perceived performance of the platform, creating a sense of assurance and aligning with users' expectations (Rashid et al., 2022).

The cumulative effect of the 3Rs on performance expectancy is evident from the reviewed literature. Thus, users, when exposed to positive reviews, high ratings, and personalised recommendations, develop a positive perception of the online buying platform's performance. This positive perception, in turn, influences users' expectations and beliefs about the platform's ability to fulfil their needs and preferences effectively.

2.4.2 *Performance expectancy and online shopping experience*

Success factors within recommendation services, such as personalisation, variety, usefulness, and ease of use, have emerged as critical determinants influencing online shopping satisfaction and fostering customer loyalty (Zhao & Lee, 2023). The significance of recommendation systems extends beyond individual satisfaction, as they play a key role in the broader context of e-commerce, contributing to increased sales, enhanced customer convenience, and the promotion of environmentally friendly alternatives (Stalidis et al., 2023). The ongoing advancements in recommendation algorithms, particularly the development of dynamic network intelligent hybrid recommendation algorithms, signify a commitment to refining the effectiveness of recommendation systems (Zhao & Lee, 2023). These algorithms, designed to adapt to the varying preferences of customers over different time periods, exemplify the continuous efforts to optimise the performance of recommendation systems within the online shopping environment (Gao et al., 2021). As these systems become integral components of the online shopping experience, their impact extends beyond mere functionality. They actively contribute to overall online customer satisfaction by providing personalised, diverse, and useful recommendations while ensuring a user-friendly experience.

The enhanced perceived performance of online shopping sites, driven by effective review, rating, and recommendation systems, is key in shaping customers' online experiences. Positive perceptions of these systems not only contribute to individual satisfaction but also foster loyalty and trust in the online shopping platform (Hajli, 2015). Customers are more likely to engage and explore the platform further when they perceive its performance as commendable, leading to sustained usage and positive word-of-mouth recommendations (Liu et al., 2019b).

Considering the observations from literature, the following hypothesis was formulated:

2.4.3 *Hypothesis 2*

Hypothesis 2 (H2): Review, ratings and recommendations positively influence perceived performance of the online shopping sites, which in turn improves online shopping experiences.

Hypothesis 2a (H2a): Reviews positively influence perceived performance of the site.

Hypothesis 2b (H2b): Ratings positively influence perceived performance of the site.

Hypothesis 2c (H2c): Recommendations positively influence perceived performance of the site.

Hypothesis 2d (H2d): Favourable perceptions of performance expectancy improve overall online shopping experiences.

2.5 The role of review, rating and recommendation systems in online habit formation

This section reviews empirical literature on the relationship between the 3Rs and habit formation. The section further discusses how habit formation facilitated by the 3Rs in turn influence overall online shopping experience in their online purchasing.

2.5.1 *Review, rating and recommendation systems and habit formation*

The addition of the habit construct to the UTAUT2 model by Venkatesh et al. (2012) marked a crucial evolution, aiming to provide a comprehensive understanding of customers' interactions with new systems. Habit, in this context, is defined as the customer's inclination to act spontaneously, driven by

accumulated learning experiences (Alalwan, 2020). This construct gains relevance in the case of online buying, where users increasingly exhibit habitual behaviours, especially in the context of mobile applications they use to purchase items online.

As individuals become more attached to their smartphones, habitual behaviours toward using associated mobile apps emerge (Rose et al., 2011). The outcomes of these accumulated learning experiences, shaping habitual behaviours, play a pivotal role in influencing customers' attitudes and beliefs. These, in turn, act as predictors for customers' sustained intention to behave in a manner consistent with their previous actions (Rose et al., 2011).

The interactivity facilitated by online mobile applications contributes significantly to the formation of habits, allowing customers to generate feedback about online sellers and share it with others on the platforms used for ordering items (Wang et al., 2021). This interactivity extends to online reviews, which have become crucial sources of information for customers during the purchasing process or when evaluating alternatives (Chen et al., 2022). The impact of online reviews on predicting customers' intention to adopt the targeted platform is widely acknowledged (Alalwan, 2020). The study by Chen et al. (2022) established a strong and positive relationship between online customer reviews and customers' intention to shop online.

Furthermore, an integral aspect associated with online reviews is the inclusion of customers' ratings. In addition to submitting reviews, customers can numerically rate their shopping experience using a Likert scale (King et al., 2014). These ratings provide customers with an overall evaluation of products or service providers, considering various features valued by other customers who have previously tried the products and services. The ease and simplicity introduced into the purchasing process through these ratings contribute to customers' willingness to use online applications, especially when such interactivity is

available (Alalwan, 2020). Consumers will then recommend the online site to peers.

The literature suggests a relationship between the 3R and habit formation in the context of online buying. Accumulated learning experiences, facilitated by these interactive features, play a vital role in shaping habitual behaviours, influencing customers' attitudes and beliefs, and ultimately predicting their consumer experiences with online shopping.

2.5.2 *Habit formation and online shopping experience*

Online ratings serve as valuable visual indicators providing customers with immediate insights into the quality and performance of products, thus saving time and effort compared to the more time-consuming analysis required for qualitative online reviews (King et al., 2014; Roy et al., 2018). Additionally, the simplicity inherent in online ratings allows customers to narrow down their options, streamlining the appraisal of the shopping process (Alalwan, 2020). This ease of use and efficiency contribute to a more straightforward and efficient online shopping experience.

Furthermore, online reviews, given their inclusion of consumer comments, are perceived as highly credible and trustworthy sources of information. Customers tend to return to these sources when exploring products and services, relying on the comprehensive, credible, updated, and relevant information they provide (Roy & Dutta, 2022). When customers perceive these sources as reliable, it positively influences their attitudes and perceptions of the online buying platform, thereby enhancing their overall experiences (Cabrera-Sánchez et al., 2020).

Considering the amalgamation of online reviews, recommendations, and ratings, these features are collectively important in shaping customers' perceptions of the productivity and performance of online buying platforms. The positive impact on overall online shopping experiences is evident, as these features motivate

customers to continue using the apps and contribute to a heightened sense of satisfaction with their overall usage experience (Alalwan, 2020). This interplay between online ratings, reviews, recommendations, and customer habits signifies that the habitual use of online platforms is influenced not only by efficiency and simplicity but also by the trust and credibility established through user-generated content (Wang et al., 2021). Thus, as customers consistently find value in these features, habit formation becomes an integral aspect of their online shopping experience, fostering loyalty and satisfaction with the platform.

Based on the literature review above, the following hypothesis was formulated:

2.5.3 *Hypothesis 3*

Hypothesis 3 (H3): Review, ratings and recommendations positively influence the formation of habits, which in turn improves online shopping experiences.

Hypothesis 3a (H3a): Reviews positively influence habit formation.

Hypothesis 3b (H3b): Ratings positively influence habit formation.

Hypothesis 3c (H3c): Recommendations positively influence habit formation.

Hypothesis 3d (H3d): Formation of positive habits improves overall online shopping experiences.

2.6 ANALYTICAL FRAMEWORK

This section presents and describes the analytical framework of the study, integrating the theoretical and empirical concepts discussed in this chapter. This section consists of two parts i.e. the theoretical framework and the conceptual framework. The theoretical framework explores the key theories that underpin this study, while the conceptual framework provides a broader understanding of the concepts and relationships being investigated.

2.6.1 *Theoretical Framework*

The theoretical framework of this study is based on the Valence Framework and the Unified Theory of Acceptance and Use of Technology (UTAUT2).

2.9.1.1. The Valence Framework applied in E-Commerce.

In the context of online shopping, there is often an information asymmetry between sellers and buyers, with sellers having an advantage in terms of information (Jing-bo et al., 2013). This information asymmetry increases the perceived risk for consumers (Hamer, 2011). The Valence framework, based on a cognitive-rationale consumer decision model suggests that consumers use both negative valence (perceived risk) and positive valence (product value) to determine their net valence, which represents the best product value (Xiao & Li, 2019; Ghosh et al., 2022).

Negative valence is associated with perceived risk, which refers to consumers' perception of uncertainty and potential adverse consequences in their transactions with sellers (Gupta & Kim, 2010) and directly influences consumers' purchasing behaviour (Xiao & Li, 2019). Positive valence is influenced by convenience, indicated through the consumers' perceptions of the time and effort required to buy or use a service (Ghosh et al., 2022). The more convenient a product or service is perceived to be, the higher the positive valence associated with it (Kim et al., 2009). Additionally, utilitarian value, which assesses the instrumental value of a brand's functional attributes, also influences positive valence (Mou et al.,2020; Zhang, H., & Liu). This value is influenced by factors such as the product's value, convenience, and the availability of useful information.

Trust, perceived risk, and perceived value could therefore directly influence consumers' purchase intentions and decisions (Kim et al., 2009). These factors play a crucial role in shaping consumers' evaluations and choices in the e-commerce context.

When consumers shop online, their search process is wider than product-related criteria and often includes sourcing reviews from other consumers (Zhang & Liu, 202). These reviews serve as signals that influence the consumers' positive or negative valence (Xiao & Li, 2019). While functional signals are important in decision-making, external signals such as electronic word-of-mouth (e-WOM) reviews have a significant impact on cognitive beliefs and valence, including buyer trust, value for money, and perceived seller quality (Lee et al., 2008).

Positive reviews have been found to directly increase sales, while negative reviews have a negative impact on sales (Chevalier & Mayzlin, 2006). Consequently, consumer reviews play a direct role in shaping purchasing decisions, as they contribute to consumers' overall valence towards a product.

Recommendation systems aim to enhance the consumer buying experience by accessing individuals' prior purchasing history, preferences, and browsing history to provide personalised or alternative product recommendations (Qiu & Benbasat, 2009). These systems contribute to convenience and utilitarian value for consumers, thereby positively influencing their buying behaviour.

Rating systems, which compare and differentiate products based on various criteria, can influence valence. The position of a product on the rating scale can directly impact consumers' valence. Higher-ranked products may evoke trust, value, and convenience, leading to positive valence (Zheng et al., 2022). Conversely, lower-ranked products may increase perceived risk and scepticism regarding product value, negatively affecting buying behaviour (Tantrabundit & Jamrozy, 2018).

The Valence Framework applied to e-commerce highlights the role of both negative and positive valence in shaping consumers' online experiences. Factors such as perceived risk, convenience, utilitarian value, trust, consumer reviews, recommendation systems, and rating systems all contribute to consumers'

valence and influence their decision-making processes in the online shopping context.

2.9.1.2. Unified Theory of Acceptance and Use of Technology (UTAUT2).

The Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) is a theoretical framework developed to understand and predict individuals' acceptance and usage behaviour regarding information technology and new technologies (Venkatesh et al., 2012). The UTATUT2 builds upon the original UTAUT model and includes additional factors to enhance its explanatory power. UTAUT2 was introduced by Venkatesh et al. (2012), aiming to provide a comprehensive understanding of user behaviour in the context of adopting and using technology. Key tenets of UTAUT2 include performance expectancy, effort expectancy, social influence, facilitating conductions, hedonic motivation, price value and habit. The effect of these factors on user behaviour is predicted to be moderated by age, gender and experience as shown in Figure 1.

Performance Expectancy (PE): This refers to the degree to which an individual believes that using a particular technology will help them to achieve their tasks more efficiently and effectively (Venkatesh et al., 2003). Higher performance expectancy is positively correlated with the likelihood of technology acceptance.

Effort Expectancy (EE): Effort expectancy reflects the perceived ease of use associated with adopting a new technology (Venkatesh et al, 2012). If individuals believe that using a technology will be easy, they are more likely to accept and use it. Factors influencing effort expectancy include the complexity of the technology and the user's familiarity with similar systems.

Social Influence: Social influence refers to the extent to which an individual perceives that important other (such as friends, family, colleagues) believe they should use a specific technology (Venkatesh et al., 2003). Positive social influence tends to encourage technology adoption.

Facilitating Conditions (FC): This factor assesses the extent to which individuals believe that there is support, resources, and infrastructure available to help them use the technology effectively (Venkatesh et al., 2012). A supportive environment can positively impact the adoption and use of technology.

Hedonic Motivation (HM): Hedonic motivation refers to the pleasure and enjoyment derived from using a technology. Hedonic motivation suggests that the perceived fun, entertainment, or enjoyment associated with a technology can influence its adoption, especially in contexts where users seek enjoyment from the technology (Yahia et al., 2018).

Price Value (PV): This factor evaluates the perceived worth of the technology in relation to its cost. Users assess whether the benefits gained from using the technology outweigh the associated costs, both monetary and non-monetary.

Habit (HAB): Habit reflects the automatic and routine use of technology. If individuals have developed a habit of using a specific technology, it is more likely that they will continue to use it in the future (Venkatesh et al., 2012).

UTAUT2 integrates these factors to predict user intentions and behaviour regarding technology adoption. Researchers and practitioners use the model to design interventions and strategies to enhance technology acceptance, usability, and overall user experience.

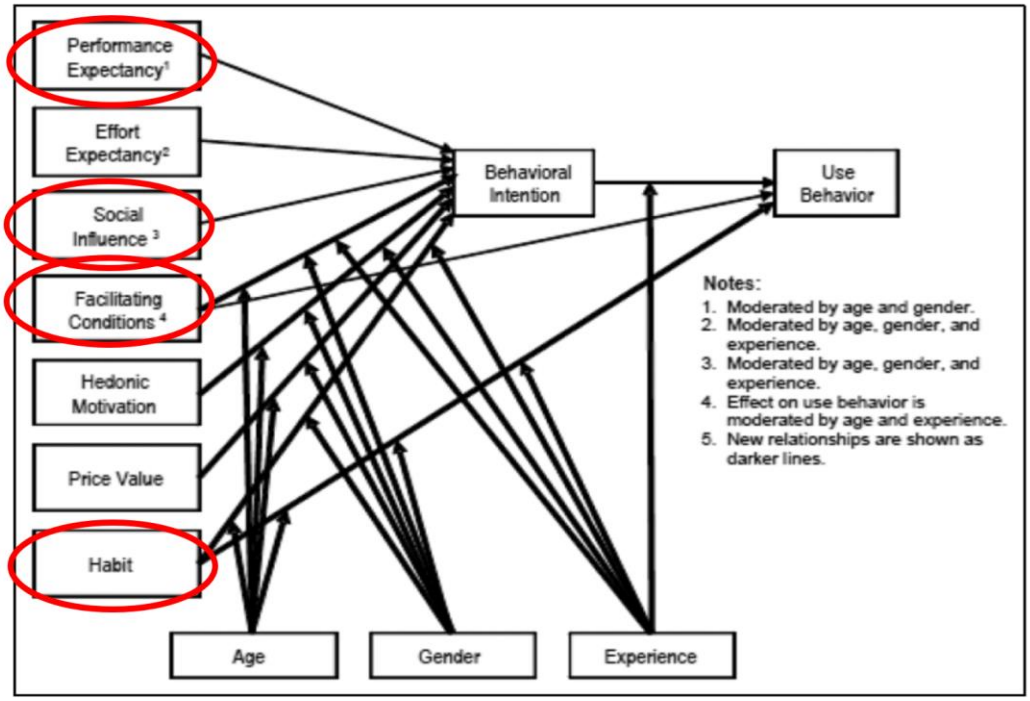


Figure 2: The UTAUT2

Source: Venkatesh et al. (2012).

UTAUT2 is relevant to this study when investigating the role of the 3Rs in shaping consumer behaviour in an online shopping context. The theory's emphasis on factors such as performance expectancy, social influence, and habit is in direct alignment with the focus of this study. The 3Rs are important in influencing consumers' perceptions of performance expectancy, as the availability of reviews, ratings, and recommendation capabilities contribute to an enhanced belief in the effectiveness and utility of the online shopping site or application. Additionally, social influence is implicated through the influence of reviews and recommendations from peers, fostering a sense of trust and community in the online space. Furthermore, the formation of habits in technology use, as emphasised by UTAUT2, is likely influenced by the repetitive exposure to positive reviews and recommendations, contributing to habitual engagement with the online platform. In essence, UTAUT2 provides a framework to understand and

analyse how the 3Rs contribute to social presence, performance expectancy, and habit formation, collectively shaping the overall customer online experience in the context of online shopping.

2.6.2 *Conceptual Framework*

The conceptual framework of this study was based on the UTAUT2 and the Valence Framework. This study assessed the consumer performance expectations of review, rating and recommendation systems and resultantly the implications on the online shopping experience. The study also examined how the impact of peer reviews could foster reliability and improve trust exploring the habits of consumers and how these habits are shaped by review, rating and recommendation capabilities as well as the implications on the overall consumer experience. The conceptual framework shown in Figure 3, highlights how the 3Rs relate with regards to performance expectancy, social presence and habit, and ultimately the online shopping experience.

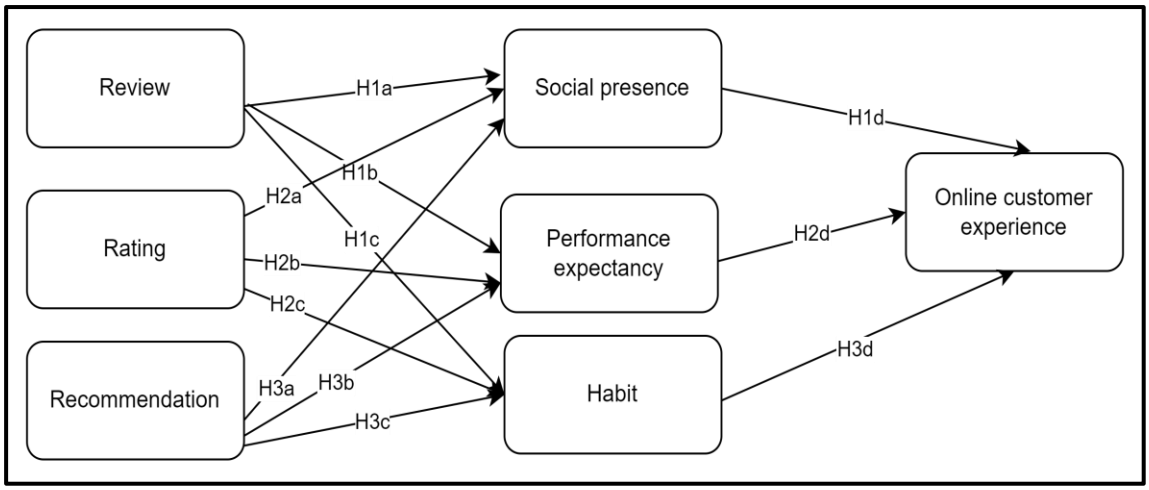


Figure 3: Conceptual Framework

Adapted from Venkatesh et al. (2012), Yahia et al. (2018) and Alalwan (2020).

The conceptual framework in Figure 3 centres around the influential role of the 3Rs in shaping online shopping experience, particularly focusing on social presence, performance expectancy, and habit formation. The convergence of rating, recommendation, and rating systems is shown to offer collaborative benefits, enhancing information availability, transparency, trust, credibility, personalised recommendations, and social engagement (Chevalier & Mayzlin, 2006; Hajli, 2015; Yahia et al., 2018; Liu et al., 2019a; Liu et al., 2019b; Alalwan, 2020).

Consumer sharing of product opinions and experiences on review systems may reduce search costs, and lead to higher sales through the consumption of additional products (recommendation systems) (Lv & Liu, 2022). The credibility of reviews from online communities is emphasised, and the importance of performance expectancy and hedonic motivations in influencing the intention to use online recommendation systems is acknowledged (Cabrera-Sánchez et al., 2020; Wu et al., 2021).

2.7 Conclusion of Literature Review

The literature review suggests that electronic commerce remains a rapidly growing industry. Resultantly the acceleration in internet shopping has enabled consumers to express their opinions, thoughts, and perceptions publicly and globally. Review, rating and recommendation systems either as independent or combined systems may play an important role in online shopping strategies in that they support personalisation and hence may be considered as highly persuasive tools to influence customer decision-making and their ultimate experience. However, it was observed from the literature review that there is a dearth of studies that comprehensively explored how online review, ratings, and recommendation systems impact the antecedents of purchase intention, and their ultimate influence on customer experience. The current study was crucial in bridging this gap by investigating the interplay between the 3Rs and the factors identified by UTAUT2, such as performance expectancy, social influence, and habit formation. The study aimed to provide empirical evidence that could inform practitioners, businesses, and scholars on the nuances and dynamics of online consumer behaviour. Understanding how these elements collectively shape the customer experience was important for the development of effective strategies, interventions, and technologies in the rapidly evolving landscape of e-commerce.

The research methodology used in this study is presented and discussed in the next chapter.

CHAPTER 3. RESEARCH METHODOLOGY

This chapter provides an outline of the research methodology utilised by the researcher during the study. The chapter includes a description of the research approach and research design used, the population and sampling, the research instruments, the approach to data collection, data analysis, as well as the ethical considerations, limitations, validity, and reliability of the process.

3.1 Research approach

Quantitative research is a systematic approach to inquiry that involves the collection and analysis of numerical data to test hypotheses, allowing researchers to derive statistical insights and draw conclusions based on measurable evidence (Saunders et al., 2019). This method is suited for studies which aim to establish relationships between variables and assess causal links within a given context (Hair et al., 2019). The decision to adopt a quantitative research approach in this study was driven by the objective of obtaining a statistical understanding of the data collected, clarifying patterns and relationships among key variables.

The quantitative approach aligns with the objectives of this study, which sought to investigate the influence of online reviews, ratings, and recommendations on the online shopping experience. The study aimed to quantify the impact of these factors on social presence, habit formation, performance expectancy, and overall online shopping experience. The use of numerical data enabled the researcher to apply analytical models during the analysis phase, to examine the causal relationships among the variables under investigation. Quantitative research provides a context-bound understanding of the phenomena, offering not only a descriptive account but also a quantifiable assessment of the relationships between the studied variables (Creswell & Creswell, 2017). In addition, the quantitative approach was advantageous as the method enables the researcher to remove any opportunity for confirmation bias by separating the researcher from

the data, to ensure that the focus of the study was well constructed through the utilisation of the pre-defined questionnaire and to test the hypothesis by using statistical data (Mcleod, 2023).

The study was rooted on a positivist research philosophy and the chosen ontology for this study was one that assumes an objective and independent reality (Saunders et al., 2019). The study perceived that there are discoverable and measurable patterns underlying the relationships between online reviews, ratings, recommendations, and the UTAUT2 dimensions within the South African B2C context. The epistemological stance adopted was that of objectivity, where knowledge is viewed as something external to the researcher and independent of individual interpretations (Creswell & Creswell, 2017). The positivist stance was further reinforced by the commitment separating of the researcher from the data, ensuring an objective exploration of the research questions.

3.2 Research design

Research design is a strategic framework for action that serves as a connecting point between research questions and the execution or implementation of the research (Chun Tie et al., 2019). The study adopted a survey research design, leveraging a structured questionnaire to systematically collect data from participants. The choice of a survey design aligned with the overarching goal of the study to investigate the role of online reviews, ratings, and recommendations in enhancing the online shopping experience. A survey design allowed for the efficient collection of quantitative data, enabling the measurement of attitudes, perceptions, and behaviours related to the variables under scrutiny (Ball, 2019).

The structured questionnaire was designed to address specific research questions related to the influence of online reviews, ratings, and recommendations on social presence, habit formation, performance expectancy, and the overall online shopping experience. This design facilitated a standardised

approach to data collection, ensuring consistency across responses and easing the subsequent quantitative analysis (Ball, 2019). The survey design also permitted the inclusion of closed-ended questions, enhancing the feasibility of numerical analysis and statistical testing (Creswell & Creswell, 2017).

The survey design has an advantage of reaching a large and diverse sample efficiently (Hair et al., 2019). The survey was administered to a broad audience of online shoppers using multiple mechanisms, aiming to capture a representative range of perspectives, contributing to the generalisability of the findings. Additionally, the structured nature of the questionnaire allowed for the systematic collection of data, reducing potential bias in responses (Apuke, 2017).

However, the survey design's reliance on self-reported data may introduce the possibility of social desirability bias, where participants might provide responses, they believe align with societal expectations rather than their true opinions or behaviours (Creswell & Creswell, 2017). Furthermore, the survey design might not capture the richness and depth of qualitative insights that could be gained through interviews or open-ended questions (Flick, 2018). Overall, the survey research design was an appropriate choice for this research paper, providing a structured and efficient mechanism of collecting numerical data to address the research questions.

3.3 Data collection methods

Data for this study was collected through online questionnaires, leveraging the advantages of social media and digital platforms to reach a diverse and geographically dispersed population of online shoppers (Ball, 2019). The choice of online questionnaires aligned with the quantitative research approach and survey design, offering a systematic and efficient means of gathering numerical data to address the research questions.

The online questionnaires were distributed to a targeted sample of B2C online shoppers, ensuring that respondents had firsthand experience with the subject matter of the study. The digital format of the Qualtrics tool facilitated widespread dissemination and eased the process of data collection, allowing participants to complete the survey at their convenience. This approach not only maximised the potential for a large and varied sample but also minimised logistical constraints associated with traditional paper-based surveys (Nayak & Narayan, 2019).

The questionnaire was designed to capture information on various aspects, including participants' demographic information, their academic backgrounds, their domiciles as well as their perceptions of online reviews, ratings, and recommendation systems. The questionnaire also evaluated their experiences with social presence, habit formation, performance expectancy, and their overall online satisfaction when using online shopping sites. The online questionnaire method was chosen for its ability to efficiently gather the type and amount of data needed to address the research questions (Nayak & Narayan, 2019). The questionnaire allowed for the collection of structured, standardised responses, facilitating numerical analysis and statistical testing. The electronic nature of the survey also enabled the inclusion of skip logic and branching, tailoring the questionnaire to individual participant responses and optimising the relevance of the data collected (Nayak & Narayan, 2019).

Ultimately, the online questionnaire method provided a cost-effective and time-efficient means of data collection. The method eliminated the need for physical distribution and manual data entry, streamlining the process and reducing the likelihood of errors. The asynchronous nature of online surveys allowed participants to respond at their convenience, potentially enhancing response rates and the overall quality of collected data (Ball, 2019).

3.4 Population and sample

The target population for this study, the sample and sampling methods are discussed in this section.

3.4.1 *Population*

The population of this study comprised online shoppers in the retail sector, specifically targeting individuals aged 18 years and above across South Africa. The study targeted only those who use e-commerce channels as one of their shopping mediums but also aimed to assess the frequency of use. The decision to focus on online shoppers in the business-to-consumer (B2C) category was driven by the study's interest in understanding the dynamics of customer experiences in the context of online retail transactions. This demographic selection ensured that participants had relevant firsthand experiences with online shopping, making their responses valuable in addressing the research questions.

This study could not determine the exact population size due to the inherent complexity of the online shopping environment. The dynamic nature of e-commerce, the diversity of online shoppers, and the absence of a centralised registry of all online shoppers in South Africa made it challenging to precisely quantify the entire population. However, the study mitigated this limitation by employing sampling techniques that reached a representative subset of the population. The use of a targeted online questionnaire further facilitated the engagement of a wide range of respondents. The digital nature of the survey allowed for broad dissemination across various online platforms, reaching a diverse pool of online shoppers who met the specified criteria (Ball, 2019).

3.4.2 *Sample and sampling method*

This study selected the sample based on specific inclusion criteria to ensure that participants were representative of the target population. Respondents were included if they met the following criteria:

- they must fall within the target population of the B2C e-commerce model.
- they must be technologically astute, actively using internet-based capabilities,
- they must frequently engage in online shopping on various websites.

To enforce this criterion, screening questions were incorporated into the survey to identify and include only those respondents who met the specified requirements.

Given the unknown population size, a non-probability sampling approach was employed, specifically opting for convenience sampling (Flick, 2018). This approach involved distributing the questionnaire across various online channels. Individuals who were available and willing to participate while also meeting the inclusion criteria, were sampled. Convenience sampling is pragmatic in situations where the population is difficult to define precisely, and this method allowed for the inclusion of participants who readily accessed the survey through the various online platforms utilized (Flick, 2018).

To enhance the reach and the diversity of the sample, the study also adopted a snowball sampling approach. This involved encouraging participants to share the survey link with their network, leading to the recruitment of additional participants (Creswell & Creswell, 2017). The snowball sampling technique facilitated the inclusion of individuals who might not have been directly accessible to the researcher, thus broadening the representation within the sample.

The determination of the sample size was guided by a historical sampling approach, referencing prior studies on similar topics. The decision to adopt this

approach was justified by the lack of a known population size and the absence of a specific sampling frame. Previous research on related topics, such as studies conducted by Rose et al. (2012) and Alalwan (2020), utilised sample sizes of at least 200 respondents. This historical precedent informed the decision to aim for a sample size within a similar range, as it was deemed sufficient to capture a diverse range of perspectives and achieve statistical reliability.

3.5 The research instrument.

The research instrument employed in this study was a structured questionnaire designed to gather both demographic information and responses pertaining to the research objectives. The questionnaire was organised into distinct sections, each serving a specific purpose in line with the objectives of the study and was developed using the Qualtrics survey platform.

The first section of the questionnaire included screening questions, placed to identify respondents who met the study's inclusion criteria. These questions focused on participants' regular online shopping habits and age, ensuring that only those actively engaged in online shopping and aged 18 years or older proceeded to the subsequent sections of the survey.

The demographic information section followed the screening questions, capturing respondent details such as age, education level, region, and gender. This demographic data was important for assessing the representativity of the sample.

Subsequent sections of the questionnaire comprised measurement scales tailored to assess various variables central to the research objectives. The variables included online reviews, online recommendations, online ratings, social presence, habit formation, performance expectancy, and overall online shopping experience. The scales used for these variables were adapted from prior studies as shown in Table 1.

The Likert scale was employed to assess participants' responses to the items on the scales. The 5-point Likert scale allowed participants to express their agreement or disagreement on a continuum, ranging from 1 (strongly disagree) to 5 (strongly agree). This ordinal scale provided a structured and quantifiable means of capturing participants' perceptions and attitudes towards the various constructs under investigation (Field, 2018). Table 1 shows the design of the research instrument, the number of questions and the literature where the questions were adapted.

Table 1: Research instrument

Scale	Number of items	Literature
Online review (OR)	3	Hajli (2015), Alalwan (2020)
Online rating (ORN)	3	Hajli (2015), Alalwan (2020)
Online recommendation (ORC)	3	Hajli (2015), Alalwan (2020)
Social presence (SP)	3	Lu et al. (2016) and Liu et al. (2019)
Habit formation (HF)	3	Yahia et al. (2018) and Alalwan (2020)
Performance expectancy (PE)	3	Yahia et al. (2018) and Alalwan (2020)
Online shopping experience (OSE)	4	Rose et al. (2013) and Barari et al. (2020)

3.6 Procedure for data collection

The data collection procedure for this study involved a systematic approach to identify and engage respondents from the target population. To ensure voluntary and informed participation, the research began by directly approaching potential participants who fell within the identified criteria (Connelly, 2014). These individuals were provided with a clear explanation of the study's objectives, the

nature of their involvement, and the voluntary nature of their participation. Full informed consent was obtained before respondents proceeded to complete the questionnaire.

A direct approach was employed for individuals within the researcher's immediate contacts. The respondents were personally contacted, briefed about the study, and provided with the survey link hosted on the Qualtrics platform. This approach facilitated a personalised connection and increased the likelihood of participant engagement (Connelly, 2014).

To extend the reach beyond immediate contacts, respondents were encouraged to share the survey link with their network through various channels such as social media, email, or other online platforms. This aspect of the data collection procedure aligned with the snowball sampling approach, allowing for a broader and more diverse pool of participants beyond the researcher's immediate network (Flick, 2018).

The survey itself was hosted on the Qualtrics platform, offering a user-friendly and secure environment for respondents to respond. Qualtrics provided features that supported the structured questionnaire format, the inclusion of skip logic, and automated data collection, ensuring a seamless and efficient data collection process. Additionally, the data collection procedure allowed for flexibility in response methods. Respondents could choose to complete the survey online at their convenience. After gathering enough responses, the survey was ended in Qualtrics, and data was downloaded for cleaning and further analysis.

3.7 Data analysis strategies and interpretation

The data analysis for this study combined descriptive and inferential statistical techniques to analyse patterns and relationships within the dataset. Descriptive statistics were utilised to provide a summary of the characteristics of the sample. This involved calculating measures such as mean, median, standard deviation,

and frequency distributions for relevant variables. Descriptive statistics allowed for a concise presentation of the central tendency, variability, and distribution of responses within the sample (Field, 2018).

Confirmatory Factor Analysis (CFA) was employed to validate the measurement models used in the study. CFA assessed the reliability and validity of the scales and constructs within the questionnaire, confirming that the chosen factors accurately represented the underlying concepts (Field, 2018). This step ensured that the measurement instruments effectively captured the intended variables.

Structural Equation Modelling (SEM) was the primary analytical approach used to test hypotheses and analyse the complex relationships among the variables. SEM allows for the examination of both direct and indirect relationships within a theoretical model (Hair et al., 2010). SEM enables researchers to evaluate the causal pathways and interdependencies among multiple variables simultaneously. In the context of this study, SEM was applied to assess how online reviews, ratings, recommendations, social presence, habit formation, and performance expectancy collectively influenced the overall online shopping experience.

3.8 Possible limitations and challenges of the study

- The use of convenience and snowball sampling methods may introduce selection bias, as participants who actively engage in online activities and are willing to participate might not be representative of the entire population.
- The study relies on self-reported data, which introduces the potential for social desirability bias (Creswell, 2010). Participants might provide responses they perceive as socially acceptable rather than reflecting their true opinions or behaviours. This bias could impact the accuracy of the

findings, particularly regarding subjective experiences such as online shopping satisfaction.

- The cross-sectional design of the study only captured a snapshot of participants' experiences at a specific point in time. This could limit the ability to establish causality or track changes over time (Creswell, 2010). Longitudinal studies could provide a more dynamic understanding of how online shopping experiences evolve and are influenced by changing trends and external factors.

3.9 Quality Assurance

This section discusses how the study ensured validity and reliability of the findings.

3.9.1 *External validity*

External validity refers to the extent to which study findings can be applied or generalised to a broader population or different settings (Cohen et al., 2017). This study employed a quantitative approach, utilising a wide sample of online shoppers in South Africa. The findings are generalisable, particularly within the context of online shoppers in the B2C e-commerce model in South Africa. Transparent reporting of limitations and careful consideration of contextual factors strengthened the external validity of the study, providing a foundation for potential application in comparable settings.

3.9.2 *Internal validity*

The study analysed internal validity through the rigorous application of Confirmatory Factor Analysis (CFA). This analytical approach was instrumental in assessing both convergent and discriminant validity of the measurement instruments employed in the study (Sürücü & Maslakci, 2020). The study ensured

that the chosen factors accurately represented the underlying constructs, confirming the reliability and validity of the measurement models. This validation process enhances the internal validity of the study, providing confidence in the accuracy and precision of the relationships observed among the variables under investigation (Cohen et al., 2017).

3.9.3 *Reliability*

Reliability in this study was ensured through a systematic reliability analysis using Cronbach's alpha. The application of Cronbach's alpha, a widely accepted measure of internal consistency, allowed for the assessment of the reliability of the measurement scales employed in the survey (Field, 2018). The study evaluated the extent to which items within the scales consistently measured the same underlying construct. The attainment of high Cronbach's alpha values for each scale indicated strong internal consistency, providing assurance that the measurement instruments reliably captured the intended variables.

3.10 Ethical considerations

The researcher ensured that ethical clearance was received from the Wits post Graduate Committee before data collection. Consent was requested from the respondents and only those that consented proceeded to respond to the survey questionnaire. All respondents were made aware that participation in the research was voluntary, that anonymity was guaranteed, and that the respondent could withdraw from the research process at any stage. No personal data was included in the research report.

Turnitin was used to confirm adherence to plagiarism policies and the researcher ensured that a declaration form was signed.

3.11 Chapter conclusion

The methodology followed was outlined in this chapter. It was discussed that the study followed a quantitative research approach employing a survey research design. The study used online questionnaires to collect data from a diverse sample of online shoppers in the B2C e-commerce model in South Africa using multiple digital collection points. The application of convenience and snowball sampling, combined with transparent reporting of limitations, aimed to enhance external validity. To ensure internal validity, CFA was employed to assess both convergent and discriminant validity of the measurement instruments. Reliability was achieved through a thorough analysis using Cronbach's alpha. SEM was applied to analyse the complex relationships among variables. Presentation of results is given in the following chapter.

CHAPTER 4. RESEARCH RESULTS

4.1 Introduction

This study focused on the role of the 3Rs in enhancing the online customer experience. The study sought to assess the influence of online product reviews, online product rating and product recommendations on social presence, habit formation and performance expectancy which are assumed to be key antecedents that influence the online shopping experience of the customer. To achieve this aim, the study collected data from online shoppers across South Africa. The purpose of this chapter was to present and describe the results from the analysis conducted. Initial sections of this chapter presented the sample characteristics, demographic information, data screening and outliers. Descriptive statistics were presented in the next sections. This was followed by reliability and validity analysis, before presenting results model testing, employing CFA and structural equation modelling to test the hypotheses stated.

4.2 Sample characteristics and demographic information

An online survey questionnaire was distributed to online shoppers in South Africa, collecting responses from a total of 285 participants. However, 17 responses were excluded due to missing data, characterised by incomplete submissions, wherein respondents terminated their participation after completing the demographic section without progressing to the subsequent survey components. The resulting usable sample comprised 268 observations, providing adequate data for meaningful statistical analysis. This sample size was consistent with previous related studies (Rose et al., 2012; Alalwan, 2020).

Outliers represent data points that deviate significantly from the rest of the observations (Field, 2018). In this study, a screening process was employed to

identify any outliers, focusing on responses with exceptionally high or low values. Extreme responses could indicate that certain respondents do not belong to the same population. Typically, extreme values are those exceeding three standard deviations from the sample mean (Hair et al., 2019). Standardised scores, reflecting deviations from the mean, were examined for each respondent on every questionnaire item. Notably, no outliers were detected. This outcome is unsurprising, given that all questionnaire items were responded to on a standardised Likert scale.

Demographic information was gathered to describe the characteristics of the sample. The data collected included information pertaining to respondents' age, gender, educational attainment, residential locale classification (rural or urban), and the frequency of engagement in online shopping, as delineated in the subsequent sections.

4.2.1 *Respondents' age category*

Respondents were requested to specify their birth period, facilitating the classification of individuals into distinct generations ranging from Generation X to Generation Z. The distribution of responses across the specified periods is as follows:

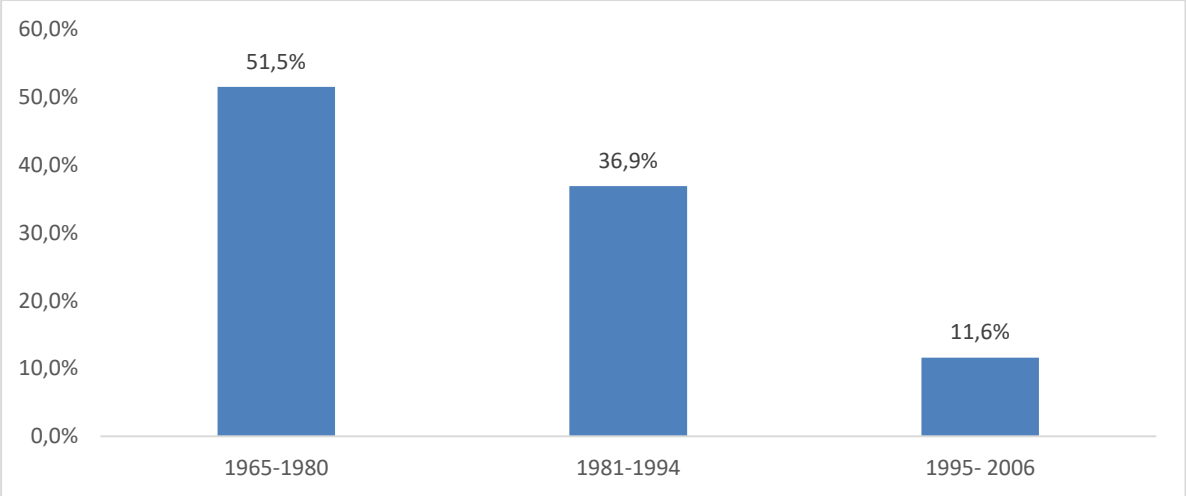


Figure 4: Age group

Figure 4 shows that Generation X, encompassing those born between 1965 and 1980, were the majority, constituting 51.5% of the total respondents. Following closely, Generation Y (1981-1994) comprised 36.9% of the sample, while Generation Z (1995-2006) constituted 11.6%. The distribution shows diverse representation across generations. This was crucial in this study to include varied perspectives. All generations were adequately considered in the study.

4.2.2 *Gender*

An overview of the gender distribution of the sample is shown in Figure 5.

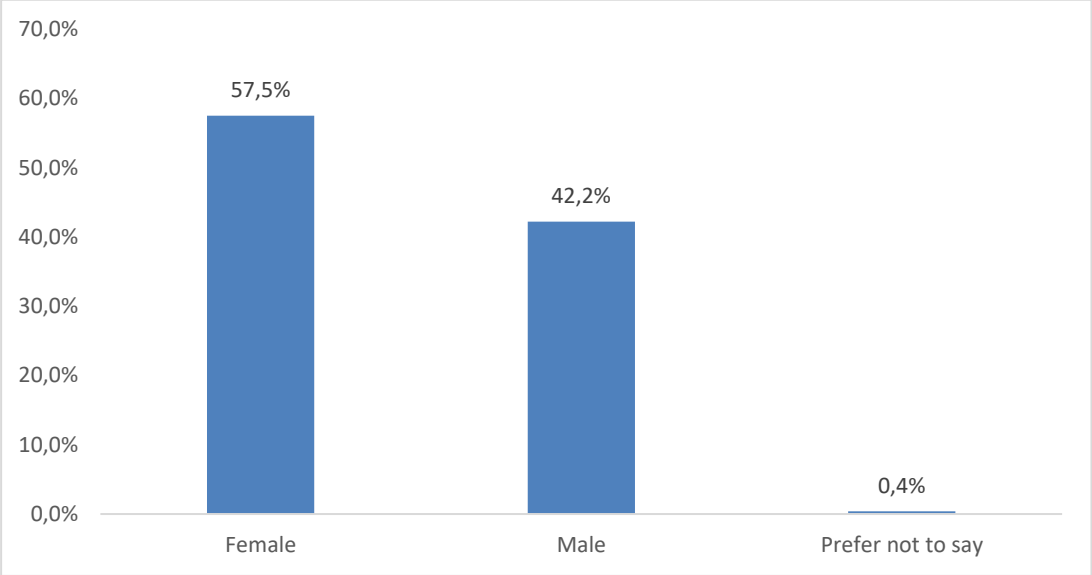


Figure 5: Gender

The gender distribution within the sample in Figure 5 demonstrates a notable representation of both female and male participants. Most respondents (57.5%) were female, 42.2% were male and a minimal proportion (0.4%) remained gender neutral. The distribution shows that more females engage in online shopping than males. The presence of both genders however shows representation across the gender divide.

4.2.3 *Level of education*

Figure 6 provides a view of the level of education of the respondents.

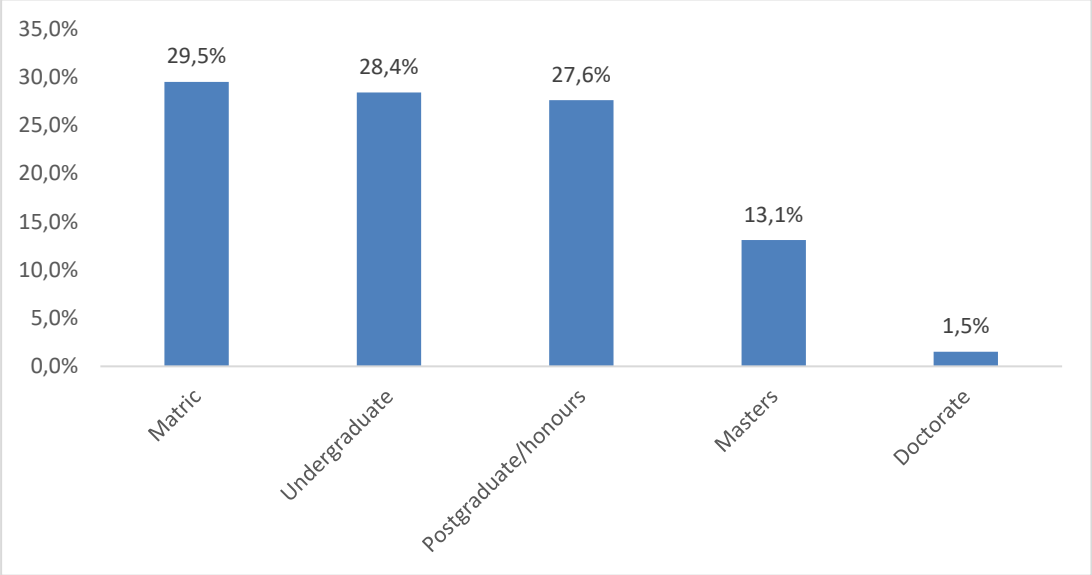


Figure 6: Level of education

Figure 6 shows that 29.5% of respondents hold a basic education qualification of a matric certificate. Further, 28.4% of respondents hold an undergraduate degree, 27.6% hold a postgraduate or honours degree 13.1% hold a master's degree and a small number of respondents (1.5%) hold a doctorate qualification. The sample consisted of respondents who held at least a matric qualification, suggesting a positive correlation between education and online shopping behaviour (Ramirez, 2019).

4.2.4 *Area of residence*

Figure 7 provides a view of the area of residence of the respondents.

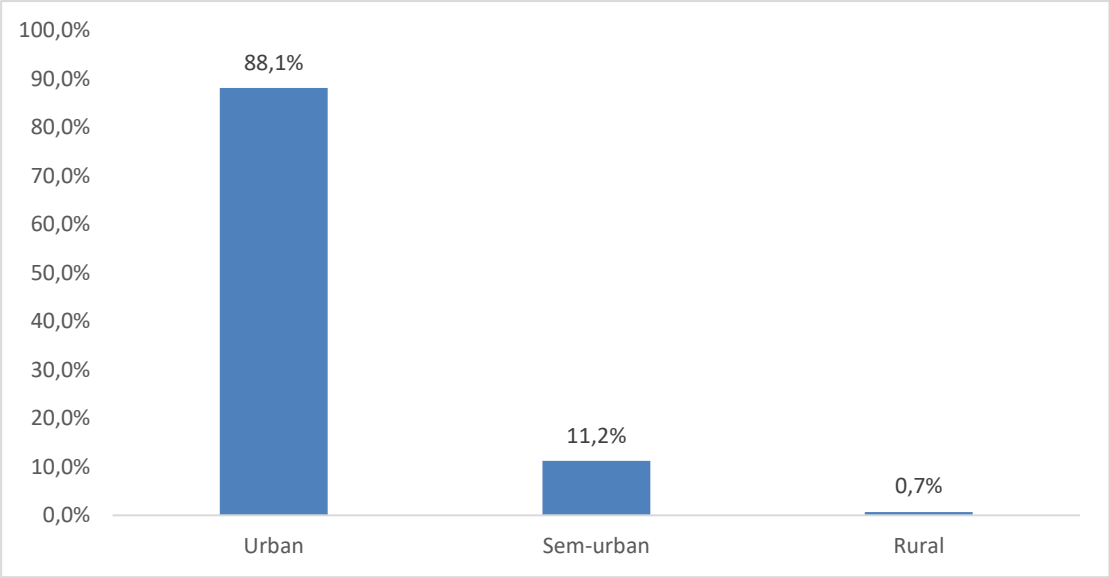


Figure 7: Area of residence

Figure 7 shows that most of the respondents (88.1) % were living in urban areas, 11.2% of respondents were living in semi-urban residents and a minority of respondents (0.7%) lived in rural areas. This distribution aligns with expectations within the South African context, where a predominant number of urban residents engage in online shopping due to its convenience and widespread internet connectivity (Moeti et al., 2021).

4.2.5 *Frequency of online shopping*

Figure 8 provides a view of how frequently the respondents use online shopping channels.

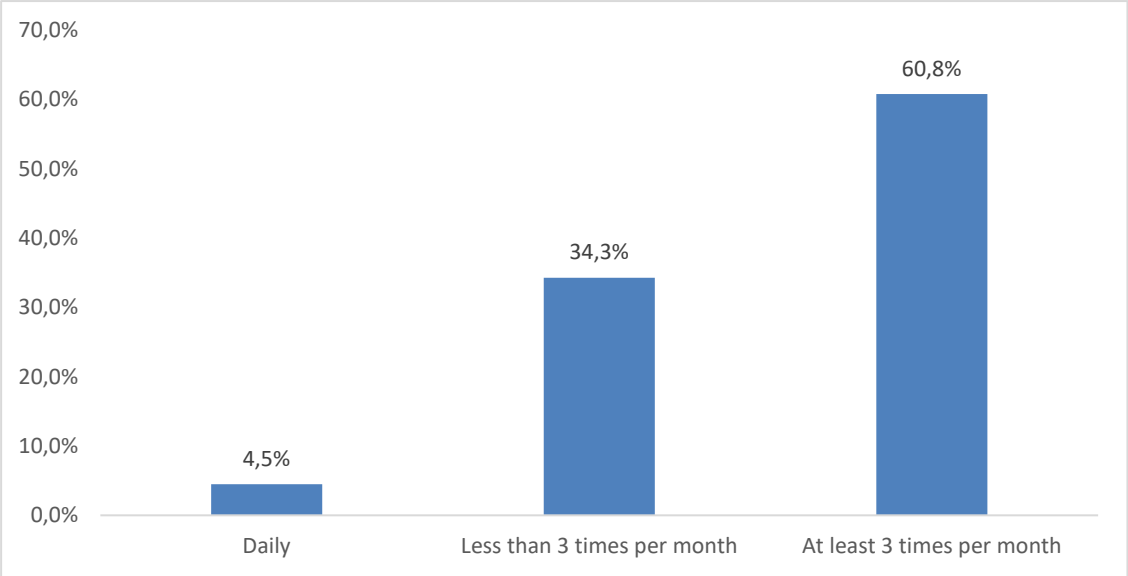


Figure 8: Frequency of online shopping

Figure 8 show that most respondents, accounting for 60.8%, engaged in online shopping at least three times per month, highlighting the prevalence of frequent usage. Furthermore, 34.3% of respondents participate in online shopping less than three times per month, while a smaller percentage, 4.5%, opts for daily online shopping. These findings show the diverse patterns of online shopping behaviour within the sample, confirming that the sample was comprised of individuals who frequently engage in online shopping. This was important in this study to ensure that responses were coming from individuals who actively shop online.

4.3 Descriptive statistics

The observable variables in this study were assessed using a 5-point Likert scale, with "Strongly Disagree" assigned a value of 1 and "Strongly Agree" assigned a value of 5. The midpoint of this scale is 3, reflecting a neutral stance. In cases where mean values fall below 3, it implies that most respondents lean towards disagreement with the provided statements. Values between 3 and 3.5 suggest a more neutral stance, while means exceeding 3.5 indicate a tendency for

respondents to agree or strongly agree with the statements. The subsequent sections present the mean and standard deviations for each item, providing a detailed analysis of the respondents' perceptions on the studied constructs:

4.3.1 *Online product reviews (OR)*

Table 2 shows per item descriptive statistics for the items measuring perceptions of respondents regarding online product reviews.

Table 2: Descriptive statistics: OR

Item	Mean	Std. Deviation
Product reviews provided by other shoppers improves the confidence of my buying decision	4.20	.837
I find online shopping sites that offer product review information more useful	3.96	.849
The availability of review information on online sites has changed the information I use to make my purchasing decisions	4.09	1.018

Results show that respondents exhibited favourable perceptions regarding online product reviews, particularly emphasising the positive influence of reviews on their purchasing confidence. These insights underscore the significance of peer-generated reviews in shaping consumer confidence in online shopping experiences.

4.3.2 *Online product ratings (ORN)*

Table 3 shows per item descriptive statistics for the items measuring perceptions of respondents regarding online product ratings.

Table 3: Descriptive statistics: ORN

Item	N	Mean	Std. Deviation
I actively use product rating capabilities to help me choose my product	268	4.23	.792
I find online shopping sites that rank products more useful	268	4.32	.789
The availability of rating information on online sites has changed the information I use to make my purchasing decisions	268	4.49	.700

Results show that most respondents demonstrated a positive orientation towards online product ratings, expressing a moderate reliance on rating capabilities and acknowledging the utility of product ratings in guiding their purchasing decisions. The notably high mean (4.49) for the statement about the transformative impact of rating information suggests a strong positive influence on the decision-making process, highlighting the significance of product ratings in shaping respondents' online shopping perceptions.

4.3.3 *Online product recommendations (ORC)*

Table 4 shows per item descriptive statistics for the items measuring perceptions of respondents regarding online product recommendations.

Table 4: Descriptive statistics: ORC

Item	Mean	Std. Deviation
I feel more socially connected to online shopping sites which recommend alternative relevant products	4.23	.757
Sites that offer alternative product recommendations improve my ease of use	4.21	.879
Sites that offer relevant alternative products have influenced what I spend on online shopping sites	4.11	.795

Table 4 shows that most respondents expressed a strong sense of social connection with online shopping sites that provide alternative relevant product recommendations. Additionally, the perception that sites offering alternative product recommendations enhance ease of use had a positive response, as indicated by a mean of 4.21. The statement "*Sites that offer relevant alternative products have influenced what I spend on online shopping sites*" received a mean of 4.11, reflecting a positive influence on respondents' spending behaviour.

In general, respondents showed favourable perceptions regarding online product recommendations, highlighting a strong sense of social connection, improved ease of use, and an influence on spending decisions when alternative relevant products are suggested. These findings stress the significance of personalised recommendations in enhancing both the social and practical aspects of the online shopping experience for the surveyed individuals.

4.3.4 *Social presence (SP)*

Table 5 shows per item descriptive statistics for the items measuring perceptions of respondents regarding online social presence as a predictor of overall online customer experience.

Table 5: Social presence (SP)

Item	Mean	Std. Deviation
Social connection on online shopping sites improves my online shopping experience	4.11	.856
I experience a sense of human warmth on online shopping sites when I read reviews of other shoppers	4.20	.762
There is a sense of sociability on online shopping sites due to the interconnectedness created by other shoppers offering their product reviews, recommendations and ratings	4.24	.824

Table 5 results shows that respondents expressed positive sentiments, indicating that social connection on online shopping sites contributes positively to their overall online shopping experience. Most respondents acknowledged the presence of sociability on online shopping sites, facilitated by other shoppers' contributions such as reviews, recommendations, and ratings Overall, respondents perceived online social presence as a constructive factor influencing their overall online shopping experience, stressing the importance of interconnectedness and human warmth in the digital retail landscape.

4.3.5 *Performance expectancy (PE)*

This study noted that online reviews, recommendations, and ratings could improve perceived performance of online shopping sites, which in turn could enhance overall online shopping experience. Per item descriptive statistics for the items measuring perceived performance are shown in Table 6.

Table 6: Descriptive statistics (PE)

Item	Mean	Std. Deviation
Using online shopping sites that provide review, rating and recommendation increases my chances of finding the best products	4.20	.867
I purposefully look for online shopping sites that offer review, rating and recommendation information	4.21	.803
Using online shopping apps that have review, rating and recommendation information reduces my shopping time	4.18	.913

Results in Table 6 show that most respondents perceive that online reviews, recommendations, and ratings play a significant role in enhancing the perceived performance of online shopping sites, thereby contributing to an improved overall online shopping experience. Most respondents agreed that utilising online shopping sites providing these features increases the likelihood of finding the best products. Additionally, respondents purposefully seek out such sites, as indicated and believe that using online shopping apps with these features reduces shopping time. These findings highlight the perceived importance of integrated review, rating, and recommendation functionalities in optimising the performance and efficiency of online shopping platforms for the surveyed individuals.

4.3.6 *Habit formation (HF)*

This study noted that online reviews, recommendations, and ratings could influence habit formation, which in turn could enhance overall online shopping experience. Per item descriptive statistics for the items measuring customer online habits are shown in Table 7.

Table 7: Descriptive statistics: HA

Item	Mean	Std. Deviation
I have a habit of choosing online shopping sites which have product reviews, ratings and recommendations	3.85	1.156
The availability of review, rating and recommendation systems has changed my choice of shopping channel from physical stores to online shopping sites	3.78	1.103
When shopping online I have developed a habit of looking at review, rating and recommendation information before I choose my product	3.87	1.179

Generally, respondents showed positive perceptions regarding habitual formation influenced by online reviews, recommendations, and ratings. Most respondents agreed that the availability of review, rating, and recommendation systems has notably influenced the shift in respondents' shopping channel preferences from physical stores to online platforms. Additionally, most respondents have developed a habit of consulting review, rating, and recommendation information before making online purchase decisions. These findings highlight the role of these online features in shaping and reinforcing the habits of the surveyed individuals, contributing to an enhanced overall online shopping experience.

4.3.7 *Online shopping experience (OSE)*

Table 8 provides descriptive statics for items measuring perceptions of online shopping experiences of customers.

Table 8: Descriptive statistics (OSE)

Item	Mean	Std. Deviation
Online shopping sites are helpful in my life	4.10	.690
I find it effective to shop online that physical shopping	4.20	.858
Shopping online is fun	4.09	1.128
Overall, I am satisfied with online shopping	4.23	.890

The descriptive statistics in Table 8 show that respondents generally acknowledge the helpfulness of online shopping sites in their lives. Additionally, there is a notable preference for online shopping over physical shopping. Furthermore, respondents find online shopping enjoyable, as reflected by a mean The overall satisfaction with online shopping is notably high, with a mean of 4.23. These findings indicate that respondents generally view online shopping as a helpful, effective, enjoyable, and satisfying experience, emphasising the positive impact of e-commerce on the surveyed individuals.

4.4 Assessment of Normality

Descriptive statistics, specifically skewness and kurtosis values, were employed to evaluate the normality of the dataset distribution. Skewness measures the asymmetry of a probability distribution, indicating whether the data is concentrated more on one side (Field, 2018). Kurtosis measures the tail heaviness of a distribution, reflecting the degree of outliers or extreme values in the data. According to Kim (2013), a range of -7 to +7 for kurtosis and -2 to +2 for skewness is deemed acceptable in indicating a normal distribution.

Table 9: Normality Assessment

Construct	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
OR	268	4.08	.782	-1.926	.149	3.287	.297
ORN	268	4.34	.695	-2.153	.149	6.713	.297
ORC	268	4.18	.670	-2.112	.149	4.992	.297
SP	268	4.19	.763	-1.442	.149	1.900	.297
PE	268	4.18	.689	-1.636	.149	3.036	.297
HF	268	3.82	1.013	-1.280	.149	.446	.297
OSE	268	4.15	.771	-1.677	.149	2.066	.297

As shown in Table 9, the skewness values across the variables fall within the range of -2 and +2, except for ORN and ORC which fall outside the range. The results suggests that despite some deviations from perfect normality, most of the distributions approach normality. The kurtosis values are all within the -7 to +7 range, indicating that the data approaches normal distribution. In addition, the sample size in this study, being relatively large, aligns with the Central Limit Theorem (CLT), which suggest that with a sufficiently large sample, the distribution of sample means will tend to be normal, even if the underlying population distribution is not (Creswell & Creswell, 2017). Therefore, while individual variables may exhibit some departure from a perfect normal distribution, the overall dataset, guided by the CLT and the sample size, allows for robust statistical analyses and generalisability of findings.

4.5 Exploratory factor analysis (EFA)

In this study, EFA was employed to investigate the underlying factor structure of the dataset, aiming to uncover patterns and relationships among observed and latent variables. The successful conduct of EFA requires an adequate sample

size to ensure robust results (Field, 2018). To confirm sample adequacy, the study utilised the Bartlett test for sphericity and the Kaiser-Meyer-Olkin (KMO) test. The Bartlett test assesses whether correlations between variables are significantly different from an identity matrix, indicating whether the data is suitable for factor analysis (Hair et al., 2010). A significant p-value in the Bartlett test supports the suitability of the data. The KMO test evaluates the adequacy of the sample for factor analysis, with values above 0.5 considered acceptable (Field, 2018). The results of these sample adequacy tests are presented below, providing assurance regarding the appropriateness of the dataset for factor analysis.

Table 10: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,667
Bartlett's Test of Sphericity	Approx. Chi-Square	3623,202
	Df	231
	Sig.	<,001

The sample adequacy tests, as indicated in Table 10, affirm the suitability of the dataset for factor analysis. The KMO measure of sampling adequacy has a value of 0.667, above the acceptable threshold of 0.5, indicating that the dataset was adequate for exploring underlying factors. Additionally, the Bartlett's Test of Sphericity has a statistically significant p-value (<0.001), signifying that correlations between variables are significantly different from an identity matrix. These results validate the appropriateness of the sample for conducting EFA in this study.

After confirming sample adequacy, the subsequent step involved the extraction of factors using Principal Components Analysis (PCA). The extraction of components was guided the Eigenvalue criterion, with factors having eigenvalues greater than 1 being extracted (Field, 2018). The goal was to retain factors that

collectively explain the highest variance in the dataset. In this analysis, a total of 7 factors were extracted, cumulatively explaining approximately 78.1% of the variance in the data, as detailed in Table 11.

Table 11: Total Variance Explained

Component	Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.563	20.740	20.740	3.078	13.991	13.991
2	3.314	15.064	35.804	2.545	11.566	25.557
3	2.729	12.407	48.211	2.495	11.342	36.899
4	2.155	9.797	58.008	2.445	11.112	48.012
5	1.708	7.763	65.771	2.335	10.614	58.626
6	1.571	7.142	72.913	2.159	9.814	68.440
7	1.156	5.256	78.169	2.140	9.729	78.169
Extraction Method: Principal Component Analysis.						

Factor rotation (Varimax in this case) was applied to enhance the interpretability of the extracted factors. The purpose of factor rotation is to simplify the factor structure, making it easier to interpret. The rotated component matrix presents the extracted factors along with their associated observed variables and factor loadings per variable. It is crucial that each variable loads prominently on the correct factor, and cross loadings should be minimised for clarity. In this study, only variables with factor loadings of at least 0.4 were retained (Field, 2018). This threshold ensures that only variables contributing significantly to the explanation of the highest variation are retained in the analysis. The rotated component matrix, containing the refined set of variables and their factor loadings, is detailed in Table 12.

Table 12: Rotated component matrix

	Component						
	1	2	3	4	5	6	7
OR1					.819		
OR2					.786		
OR3					.847		
ORN1		.922					
ORN2		.922					
ORN3		.860					
ORC1						.845	
ORC2						.778	
ORC3						.818	
SP1							.769
SP2							.701
SP3							.891
PE1				.855			
PE2				.869			
PE3				.856			
HF1			.834				
HF2			.898				
HF3			.836				
OSE1	.765						
OSE2	.856						
OSE3	.884						
OSE4	.826						
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.							
a. Rotation converged in 6 iterations.							

The tables shows that 7 components were extracted. All items had factor loadings above 0.4, loading highly on a single factor. Thus, there were no cross loadings. Therefore, all items were retained. The factor structure was later confirmed using Confirmatory Factor Analysis (CFA).

As shown in Table 12, online reviews (OR) was measured thorough three items, and the items all had high factor loadings above 0.4. The items for OR loaded on Component 5 and no cross loadings. Further, online product rating (ORN) was measured through three items, all with high actor loadings. The items for ORN loaded on Component 2. Online product recommendations (ORC) was measured through three items, all loading highly on Component 6. Social presence (SP) was measured through three items, all loading highly on Component 7. Further, performance expectancy (PE) was measured through 3 items, with items loading highly on Component 4. Habit formation (HF) was measured through 3 items, and all items loaded highly on Component 3. Lastly, online shopping experience was measured through four items, and all items loaded highly on Component 1.

4.5.1 *Reliability and Validity analysis*

A measurement scale should be reliable and valid for it to be considered for practical use (Hair et al., 2010). Reliability of the 7 measurement scales (reviews, rating, recommendations, social presence, performance expectancy, habit formation and online shopping experience) was assessed using the Cronbach's alpha and composite reliability. Testing for reliability ensures consistency and stability of measurements, enhancing the accuracy and validity of study results by minimising errors and increasing the trustworthiness of data collected from various sources or over time (Hair et al., 2010). Reliable measurement scales contribute to the robustness of research findings, supporting the credibility and replicability of study outcomes (Field, 2018). Results are shown in Table 13, summarising reliability, and validity assessments of the measurement scales.

Table 13: Reliability and validity assessment

Scale	Number of items	Cronbach's alpha	Average variance extracted (AVE)	Composite relaibility
Reviews	3	0.832	0.64	0.84
Ratings	3	0.901	0.76	0.90
Recommendations	3	0.776	0.54	0.78
Social presence	3	0.801	0.59	0.81
Performance expectancy	3	0.862	0.68	0.86
Habit formation	3	0.861	0.68	0.86
Online shopping experience	4	0.875	0.66	0.88

From the results in Table 13, all scales demonstrated strong internal consistency, surpassing the recommended threshold of 0.7 for a reliable measure, as outlined (Hair et al., 2010). Specifically, Cronbach's alpha values ranged from 0.776 to 0.901, and composite reliability values ranged from 0.78 to 0.90, indicating robust reliability across all scales.

Convergent validity, assessed through the Average Variance Extracted (AVE), was also examined. The AVE represents the proportion of variance captured by the latent construct relative to measurement error (Hair et al., 2010). All scales met the recommended threshold for convergent validity, with AVE values ranging from 0.54 to 0.76. Notably, these values exceeded the suggested minimum threshold of 0.5, indicating that a substantial proportion of the observed variable's variance is accounted for by its underlying latent construct. The AVE was calculated by taking the average of the squared standardised loadings of each item on its corresponding latent construct.

Furthermore, the Pearson correlation matrix was computed to assess discriminant validity, comparing the correlations to the square root of the AVE. Table 14 shows results of discriminant validity analysis.

Table 14: Discriminant validity

		OR	ORN	ORC	SP	PE	HF	OSE
OR	Pearson Correlation	0.797						
ORN	Pearson Correlation	-.027	0.870					
ORC	Pearson Correlation	.127*	-.071	0.737				
SP	Pearson Correlation	.220**	.291**	.054	0.771			
PE	Pearson Correlation	.250**	.000	.130*	-.056	0.824		
HF	Pearson Correlation	.402**	-.063	.022	.058	.200**	0.825	
OSE	Pearson Correlation	.090	-.037	.191**	.031	.442**	.185**	0.810
*. Correlation is significant at the 0.05 level (2-tailed).								
**. Correlation is significant at the 0.01 level (2-tailed).								

As reported in Table 14, the highlighted diagonal entries in the correlation matrix display the square root of the AVE for each respective construct (OR, ORN, ORC, SP, PE, HF, OSE). Discriminant validity is demonstrated when the correlation coefficients between different constructs (off-diagonal entries) are lower than the square root of the AVE for each corresponding construct (Hair et al., 2019). Crucially, the correlation coefficients between constructs are all lower than the

square root of the AVE on the corresponding diagonal, indicating strong evidence of discriminant validity. This implies that each latent construct is more strongly correlated with its own indicators than with other constructs, reinforcing the distinctiveness of the measurement scales employed in the study (Field, 2018).

4.6 Results of model testing

The study employed a two-step process for model testing, involving EFA followed by CFA to confirm the factor structure. Firstly, EFA was conducted to explore the factor structure of the measurement model. Subsequently, CFA was employed to rigorously test and confirm whether all items loaded appropriately on the hypothesised constructs within the model. This preliminary step aimed to ensure the integrity of the measurement model before proceeding to the testing of the hypothesised structural model.

The CFA analysis encompassed seven constructs, each with three items, except for the online shopping experience construct, which included four items. In total, there were 22 items. The CFA served to evaluate the fit of the proposed factor structure to the collected data, ensuring that the measurement model accurately represented the relationships between latent constructs and their observed indicators.

Following the confirmation of the measurement model, the study proceeded to the second step, utilising Structural Equation Modelling (SEM) within AMOS version 26. This phase aimed to test the hypotheses regarding the relationships between independent and dependent variables, constituting the structural model. SEM facilitated a comprehensive examination of the proposed relationships, providing insights into the overall model fit and the strength of the hypothesised connections.

4.6.1 *CFA model testing*

Confirmatory factor analysis aimed to evaluate the relationships between various constructs in the developed theoretical model and their respective measurement items. The focus was on assessing the fit of the measurement model and validating its effectiveness (Field, 2018). During CFA evaluation of the measurement model, there was no need to distinguish between exogenous and endogenous constructs, a differentiation reserved for structural equation modelling. Figure 8 illustrates all variables interconnected, with the measured variables (construct items) presented in rectangular shapes. Two-headed arrows indicate covariance, while one-headed arrows depict causal relationships. Notably, the model in Figure 9 exclusively includes the main effects between constructs (online reviews, online rating, online recommendations, social presence, performance expectancy, habit formation, online shopping experience) and measurement items. This approach ensures a focused examination of the key relationships within the measurement model (Hair et al., 2010).

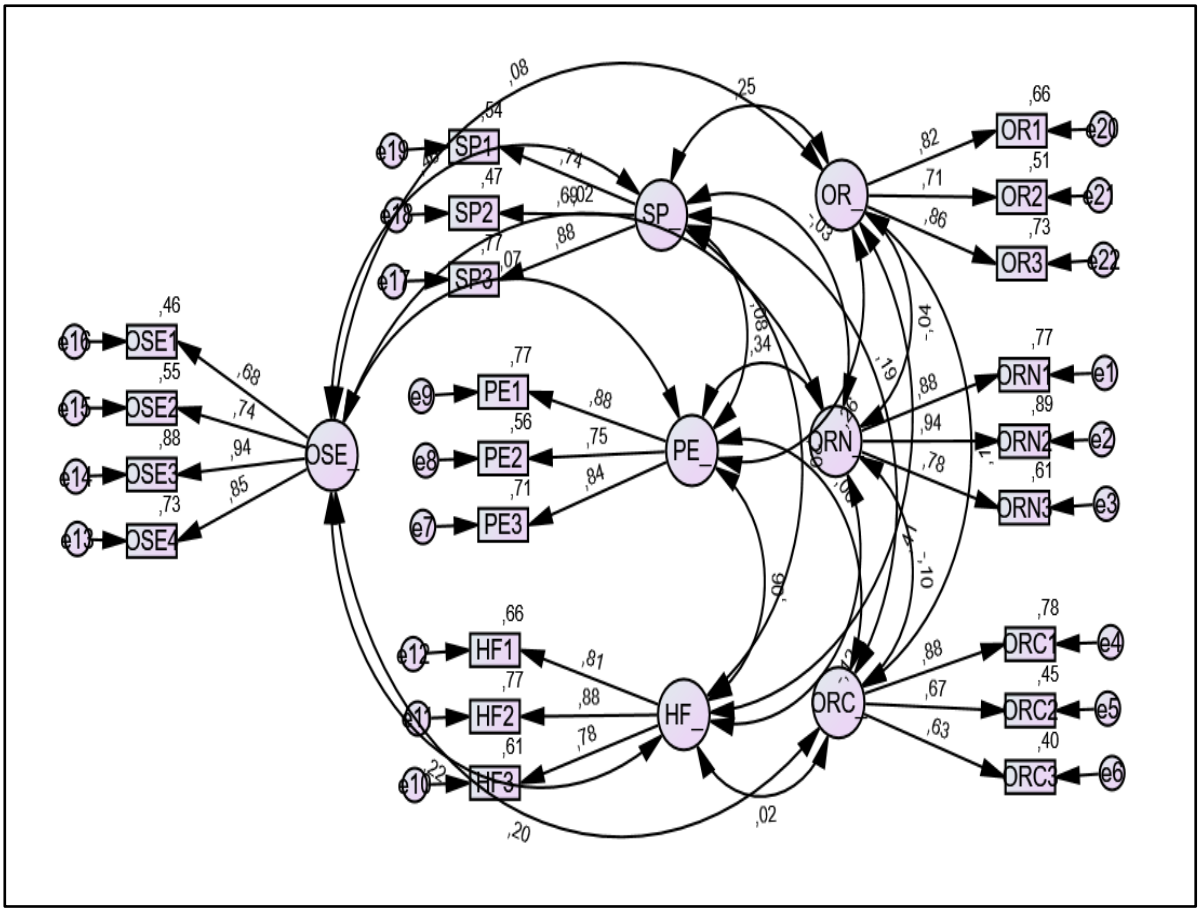


Figure 9: CFA measurement model

4.6.2 *Goodness of fit indices*

The model's goodness-of-fit was assessed using the maximum-likelihood method to estimate parameters, with analyses conducted on covariance matrices. Results of model fit are shown in Table 15. Several fit indices were considered, starting with the Chi-square (χ^2) test. The obtained χ^2 value was high, and the ratio of χ^2 to degrees of freedom ($\chi^2/DF = 4.44$) exceeded the recommended threshold of 3. While the χ^2 test may indicate misfit, it tends to be sensitive to sample size, potentially leading to unnecessary rejection of hypotheses (Hair et al., 2010).

Table 15: Model fit indices

Fit Index	Recommended Value	CFA Results	Final Structural Model
Goodness-of-fit (GFI)	Less than 0.80 (No fit)	0.796	0.916
	Between [0.80-0.90] (acceptable)		
	Above 0.90 (Perfect fit)		
Normed fit index (NFI)	Less than .80 (poor)	0.776	0.919
	Between [0.80-0.90] (acceptable)		
	Above 0.90 (good)		
Comparative fit index (CFI)	Less than 0.90 (poor)	0.815	0.931
	Above 0.90 (good)		
Incremental fit index (IFI)	Less than 0.90 (poor)	0.818	0.932
	Above 0.90 (good)		
Root mean square error of approximation (RMSEA)	Less than 0.05 (good)	0.114	0.0730
	Between [0.06-1] (acceptable)		
	Above 1 (poor)		
Chi-square ($\chi 2$ /DF)	Less than 3 (good)	4.444	2.407
	Between [3-5] (acceptable)		
	Above 5 (poor)		
Tucker-Lewis Index (TLI)	Less than 0.80 (poor)	0.773	0.907
	Between [0.80-0.90] (acceptable)		
	Above 0.90 (good)		
Relative Fit Index (RFI)	Less than 0.80 (poor)	0.725	0.901
	Between [.80-.90] (acceptable)		
	Above .90 (good)		

Despite the less favourable χ^2 result, the fit indices further confirmed suboptimal model fit: GFI=0.796, NFI=0.776, CFI=0.815, IFI=0.818, RMSEA=0.114, TLI=0.773, and RFI=0.725. These values fall below the desired benchmarks for a well-fitting model. However, it is crucial to note that the primary objective of the CFA model was to confirm construct validity and factor loadings, not to test hypotheses among constructs (Field, 2018). In this context, the results indicated that all items loaded appropriately and aligned with theory. Factor loadings ranged from 0.631 to 0.942, exceeding the recommended threshold of 0.50. Consequently, while overall model fit was suboptimal, the CFA successfully confirmed the construct validity and factor loadings, setting the stage for subsequent hypothesis testing in the following section.

4.6.3 *Final structural model testing*

The analysis of the final structural hypothesised model, as depicted in Figure 9, commenced with the examination of the significance level of the Chi-square (χ^2) test, revealing a significant result ($p < 0.001$). However, the Chi-square to degrees of freedom ratio (CMIN/DF) was 2.407, which is below the recommended threshold of 3, suggesting a good fit for the model.

Further assessment involved scrutinising various model fit indices, as presented in Table 15. Notably, the model fit significantly improved compared to the initial CFA, with the following indices: GFI=0.916, NFI=0.919, CFI=0.931, IFI=0.932, RMSEA=0.073, TLI=0.907, and RFI=0.901. These values collectively indicated an acceptable model fit across all indices, reinforcing the robustness of the final structural hypothesised model.

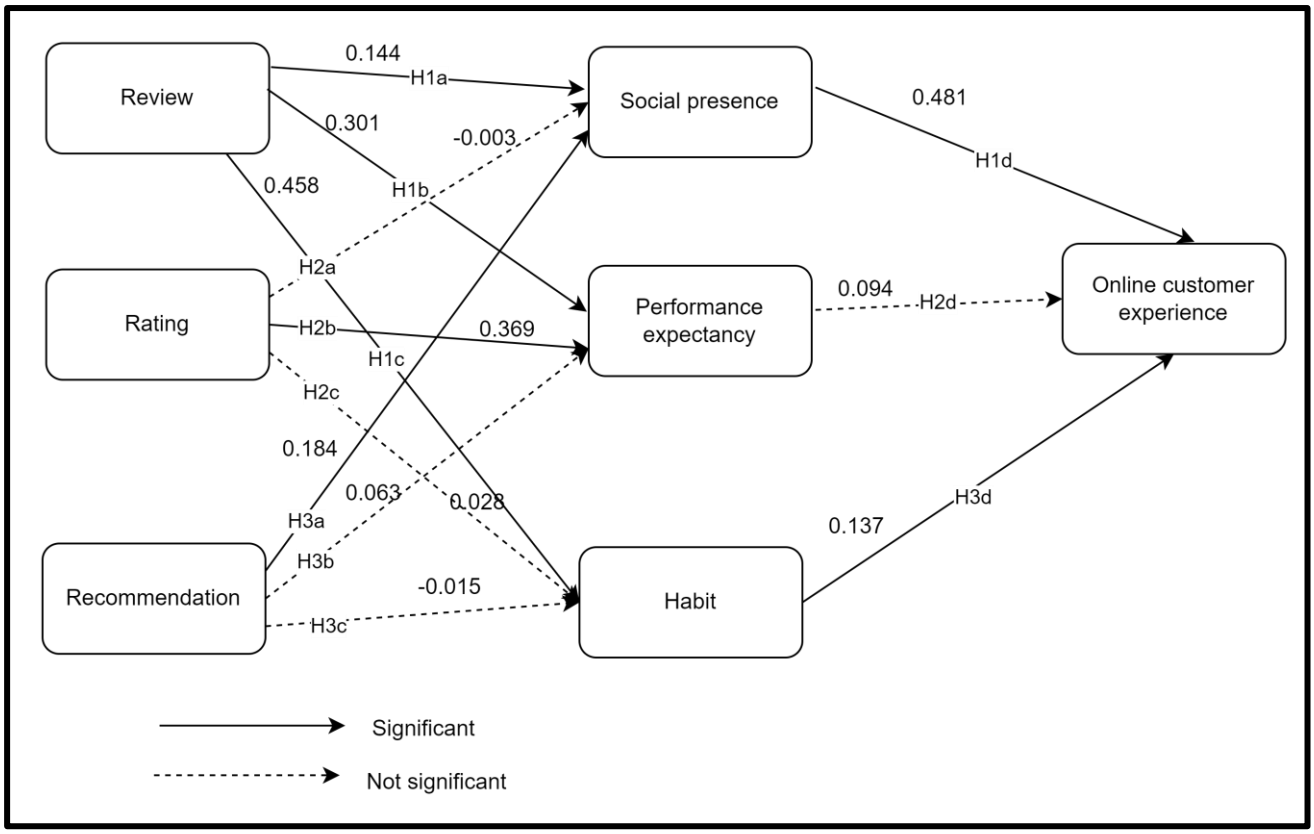


Figure 10: Hypothesised Model

The enhancement in model fit was achieved through a process guided by modification indices, allowing for the covariation of certain errors. Modification indices in AMOS guide the identification of specific areas where model fit can be improved, suggesting adjustments such as adding or removing paths. This iterative process, informed by modification indices, refines the structural equation model by addressing misspecifications, thereby optimising the overall fit and increasing the model's explanatory power (Hair et al., 2010).

4.7 Results pertaining to hypotheses.

Table 16: Summarised Model results

Hypothesis				Estimate	S.E.	C.R.	P	Supported
H1a	SP_	<---	OR_	0.144	0.071	2.014	0.044	Yes
H1b	SP_	<---	ORN_	-0.003	0.067	-0.041	0.967	No
H1c	SP_	<---	ORC_	0.184	0.078	2.352	0.019	Yes
H1d	OSE_	<---	SP_	0.481	0.074	6.516	***	Yes
H2a	PE_	<---	OR_	0.301	0.071	4.215	***	Yes
H2b	PE_	<---	ORN_	0.369	0.069	5.328	***	Yes
H2c	PE_	<---	ORC_	0.063	0.078	0.806	0.42	No
H2d	OSE_	<---	PE_	0.094	0.061	1.541	0.123	No
H3a	HF_	<---	OR_	0.458	0.096	4.756	***	Yes
H3b	HF_	<---	ORN_	0.028	0.079	0.349	0.727	No
H3d	HF_	<---	ORC_	-0.015	0.093	-0.163	0.87	No
H3d	OSE_	<---	HF_	0.137	0.05	2.711	0.007	Yes

Hypothesis 1 (H1): Review, ratings and recommendations positively influence the creation of social presence, which in turn improves online shopping experiences.

The results of the final hypothesised model revealed the interplay between online reviews, rating, and recommendations and their impact on crucial antecedents influencing the online customer experience. Social presence (SP) was positively influenced by online reviews (*B=0.144, p=0.044*) and online product recommendations (*B=0.184, p=0.019)*. In this case, H1a and H1c were supported. The results suggests that the interactive and communicative aspects introduced by reviews and recommendations contribute significantly to creating a sense of social presence in the online shopping environment. However, the influence of online ratings on social presence (H1b) was not significant (p>.05). Results further show that social presence significantly predicts online shopping experience *(B=0,481, p<.001).* H1d was thus supported. Overall, Hypothesis 1

was partially supported, indicating that online reviews and recommendations are the key predictors of social presence, which in turn positively influences online customer shopping experience.

Hypothesis 2 (H2): Review, ratings and recommendations positively influence perceived performance of the online shopping site, which in turn improves online shopping experiences.

Moving to performance expectancy (PE), online reviews (*B=0.301, p<.001)* and ratings *(B=0.369, p<.001)* demonstrated a positive and significant impact on performance expectancy, supporting H2a and H2b. The result suggests that customers are influenced by the experiences and assessments shared by others (reviews) and the overall rating of products, contributing to their performance expectations in online shopping. However, online recommendations did not significantly affect performance expectancy (p>.05), implying that H2c was not supported. In addition, there was no evidence that performance expectancy positively influences online shopping experience (p>.05). Hypothesis 4d was not supported. Overall, Hypothesis 2 was partially supported.

Hypothesis 3 (H3): Review, ratings and recommendations positively influence the formation of habits, which in turn improves online shopping experiences.

Habit formation (HF) was another factor significantly influenced by online reviews *(B=0,458, p<.001).* H3a was supported, implying that customers tend to develop habits around their online shopping behaviour based on the information and insights garnered from reviews. However, neither online ratings (p>.05) nor recommendations (p>.05) demonstrated a significant impact on habit formation in this study. Thus, H3b and H3c were not supported. Hypothesis 3d was supported *(B=0,137, p=0.007),* suggesting that habit was a significant predictor of online shopping experience. Therefore, Hypothesis 3 was partially supported.

Overall, results highlighted that online reviews significantly contribute to the development of social presence, reflecting the interactive and communicative nature of customer reviews. Habit formation, crucial for sustained online engagement, is notably influenced by the information-rich content found in reviews. Meanwhile, both reviews and ratings play a pivotal role in shaping customers' performance expectations, contributing to their overall satisfaction with the online shopping experience. This comprehensive perspective emphasises the importance of strategically integrating and optimising online reviews, ratings, and recommendations to positively influence social presence, habit formation, and performance expectancy, ultimately enhancing the holistic online shopping experience.

4.8 Chapter conclusion

This chapter presented results on the role of the 3Rs in strategically enhancing the online customer experience. The chapter begun with a description of sample characteristics which included highlighting the context of the respondents. Descriptive statistics were then presented, focusing on the feedback of respondents regarding their online shopping experiences across the various dimensions of the 3Rs, social presence, habit formation, and performance expectancy. An analysis of normality assured the suitability of the data set for maximum likelihood methods of analysis, establishing a foundation for subsequent statistical procedures.

Reliability and validity assessments, stemming from both EFA and CFA, ensured the robustness and trustworthiness of the measurement scales employed. The measurement model was analysed using CFA, affirming the factor structure's appropriateness. Subsequently, the final hypothesised model was estimated using SEM, revealing the relationships, and validating the hypotheses. The results stressed the important role of the 3Rs in shaping online shopping

experiences, influencing social presence, habit formation, and performance expectancy.

This chapter served as a precursor to the detailed discussions that follow in the next chapter, focusing on a detailed discussion of the results.

CHAPTER 5. DISCUSSION OF THE RESULTS

5.1 Introduction

This study investigated the role of review; rating and recommendation systems in enhancing the online customer experience. The study aimed at assessing the influence of these systems on social presence, habit formation and performance expectancy, considered to be key antecedents that influence use of online shopping platforms (Venkatesh et al., 2012). Data analysis was conducted, and results were presented and described in the preceding chapter. The focus of this chapter shifts to the discussion of results, contextualising the results in conjunction with the literature as reviewed in Chapter 2 of this study. Discussion of the results is conducted per hypothesis. The study formulated three hypotheses as follows:

Hypothesis 1 (H1): Review, ratings and recommendations positively influence the creation of social presence, which in turn improves online shopping experiences.

Hypothesis 2 (H2): Review, ratings and recommendations positively influence perceived performance of the online shopping site, which in turn improves online shopping experiences.

Hypothesis 3 (H3): Review, ratings and recommendations positively influence the formation of habits, which in turn improves online shopping experiences.

5.2 Discussion pertaining to Hypothesis 1

This study investigated the role of the 3Rs in enhancing online social presence, which could positively influence the customers overall online shopping experience. Results from structural equation modelling revealed that online reviews, rating, and recommendation systems play a crucial role in enhancing online social presence. Results specifically showed that social presence was positively influenced by online reviews and online product recommendations. The results suggests that the interactive and communicative aspects introduced by reviews and recommendations contribute significantly to creating a sense of social presence in the online shopping environment. The results provide support for Hypotheses 1a and 1c and are also consistent with the broader literature (Hsiao et al., Hajli & Sims, 2015; 2010; Algharabat & Rana, 2021; Liu et al., 2019; Lu et al., 2016; Sheikh et al., 2019; Alalwan et al., 2019).

Results of this study provide validation of the notion that online interactions are not merely transactional but are permeate a sense of social presence (Hajli & Sims, 2015). The positive influence of reviews and recommendations was expected in this study as individuals engaging with online reviews and recommendations experience awareness of the human element in their digital interactions. This aligns with the core tenets of social presence theory, emphasising the importance of the human aspect in fostering meaningful online connections (Short et al., 1976).

The results also highlight the significance of trust-building mechanisms within the digital realm. The result implies that users perceive forms of user-generated content as credible and trustworthy. This aligns with the broader literature on social commerce, emphasising the role of peer influence in shaping consumer behaviour and fostering trust within online communities (Algharabat & Rana, 2021; Hsiao et al., 2010).

However, it is crucial to consider the potential challenges and limitations associated with online reviews and recommendations in that the quality and authenticity of user-generated content can vary widely (Park et al., 2007). Addressing issues such as fake reviews, biased recommendations, or manipulated ratings becomes essential in maintaining the integrity of online interactions and sustaining the positive impact on social presence.

In addition, the dynamic nature of social presence suggests that the effectiveness of online reviews and recommendations may evolve over time. External factors such as changes in consumer behaviour, technological advancements, or societal shifts could influence the way users perceive and engage with user-generated content (Rashid et al., 2022).

In terms of Hypothesis 1b, the influence of online ratings on social presence was not significant, implying the that reviews and recommendations take precedence over ratings in influencing the creation of an online social presence.

Results further showed that social presence significantly predicts online shopping experience, supporting Hypothesis 1d. This result is also supported by feedback from respondents from the descriptive statistical analysis conducted. Most respondents agreed that reviews and recommendations provided by other shoppers is more useful and improves customer confidence in buying decision.

The result that the creation of an online social presence has a positive influence on the experiences of online shoppers is widely supported in literature. The result stresses the crucial role of user-generated content, such as online reviews, recommendations, and ratings, in shaping the online social environment and subsequently influencing the overall online shopping experience (Pavlou et al., 2007; Lu et al., 2016; Yeboah et al., 2023). Social presence reduces perceived social distance, fostering trust between buyers and sellers in online transactions. This trust-building aspect is crucial for online platforms, as a high social presence, marked by interactive information and social cues, creates a transparent

shopping environment (Pavlou et al., 2007). This transparency instils confidence in consumers, mitigating perceived risks and encouraging active engagement in online transactions. Consequently, the positive relationship observed in this study aligns with the idea that a stronger social presence contributes to the establishment of trustworthy relationships and positively influences consumers' attitudes towards online shopping platforms (Lu et al., 2016).

Overall, the result of this study provided empirical support for the idea that user-generated content, through its contribution to social presence, plays a pivotal role in shaping the online shopping experience. The result contributes to the practical implications of fostering a robust social presence within online platforms, emphasising its positive impact on user attitudes and experiences.

5.3 Discussion pertaining to Hypothesis 2 (H2)

The study further investigated the role of the 3R in improving the perceived performance of online shopping sites, which would in turn improve the online shopping experiences of customers. From the results of this study, it was evident that online reviews and product ratings had a positive and significant impact on performance expectancy of online shopping sites, supporting H2a and H2b.

This result was anticipated in this study, since, according to the information cascades theory customers are influenced by the experiences and assessments shared by others (reviews) and the overall rating of products ((Liu et al., 2016), contributing to their performance expectations in online shopping. This was also evident from respondent feedback as shown in descriptive statistical analysis. Most respondents agreed that using shopping sites that provide review, rating and recommendation increases their chances of finding the best products. Respondents also agreed that they purposefully look for online shopping sites that offer review, rating and recommendation information. In addition, most

respondents believed that their shopping time is reduced by simply looking at reviews and product rating, thus, making quick online shopping decisions.

The result that online reviews and ratings positively influences perceived performance of online shopping sites is consistent with previous studies (Rashid et al., 2022; Busalim et al., 2023). This result signifies that user, in their assessment of online shopping platforms, attribute significance to the user-generated content encapsulated in reviews and ratings. The positive correlation between favourable reviews and the perception of satisfactory performance suggests that users equate positive user-generated feedback with the platform's ability to fulfil their expectations. Conversely, the negative impact of unfavourable reviews on the perception of performance underscores the weight users place on critical evaluations in shaping their confidence in the online shopping site's capabilities.

Rashid et al. (2022) observed that consumers consider reviews as crucial indicators of online platform performance, highlighting the practical implication of leveraging positive user-generated content to enhance perceived performance. Therefore, user-generated content is not only normative but is influential in shaping users' expectations and confidence in the online shopping experience.

However, this study found that online recommendations did not significantly affect performance expectancy, implying that H2c was not supported. In addition, there was no evidence that performance expectancy positively influences online shopping experience. Hypothesis 4d was not supported. The result that online recommendations had no impact on perceive performance could be attributed to the fact that users might focus more on product rating and product reviews, other than recommendations when making decisions to purchase a product online. Further, the insignificant impact of performance expectancy on online shopping experience is contrary to the predictions of the UTAUT2 (Venkatesh et al., 2012), and contradicts prior studies which found a significant positive impact (Gao et al., 2021; Zhao & Lee, 2023). These results could be attributed to the idea that online

shoppers may not consider the performance of the site as an important factor in making their decisions. Users may be more satisfied to shop online because of the influence of other online shoppers as found in Hypothesis 1.

5.4 Discussion pertaining to Hypothesis 3.

The influence of the 3Rs on habit formation was analysed, hypothesising that formation of positive online habits would improve overall online shopping experiences. Results confirmed that habit formation was positively and significantly influenced by online reviews supporting Hypothesis 3a. This result was expected because customers tend to develop habits around their online shopping behaviour based on the information and insights garnered from reviews.

The result aligns with the perspective presented by Wang et al. (2021), which emphasises the role of interactivity in habit formation. The ability of customers to generate feedback about online sellers and share it on ordering platforms demonstrates a form of user engagement that extends beyond mere transactional activities. This type of interactivity creates a participatory environment where users actively contribute to the platform's content through reviews, fostering a sense of involvement and habituation.

The study further aligns with Chen et al.'s (2022) observation that online reviews have become crucial sources of information for customers during the purchasing process. The positive relationship established between online customer reviews and the intention to shop online underscores the impact of reviews on users' decision-making processes. This suggests that the habitual incorporation of online reviews into the decision-making routine contributes to the overall habit formation associated with online shopping.

A key aspect highlighted in the literature is the inclusion of customers' ratings, a feature integral to the online review process. Alalwan (2020) pointed out that the

simplicity and ease introduced into the purchasing process through reviews and ratings contribute to customers' willingness to engage with online applications, particularly when interactive features are available. The act of providing numerical ratings not only facilitates the decision-making process but also aligns with the study's finding that users who habitually engage in such interactions are more likely to recommend the online site to their peers (King et al., 2014).

In essence, the influence of online reviews on habit formation can be attributed to the interactive nature of user-generated content, the informational value of reviews in the decision-making process, and the ease introduced by numerical ratings. Users, habitually engaging in these interactive elements, incorporate them into their regular online shopping routines, ultimately contributing to the formation of positive online habits. The literature supports the idea that these habitual behaviours are not only individual but extend to the social realm, where users actively share recommendations with their peers based on their habitual engagement with online reviews and ratings.

However, neither online ratings nor recommendations demonstrated a significant impact on habit formation in this study. Thus, H3b and H3c were not supported. This suggests that the impact of the 3Rs on habit formation is more pronounced on online reviews than on ratings and recommendations.

The results of the study further indicated that the habit of choosing online shopping sites based on product reviews, ratings, and recommendations significantly predicts the overall online shopping experience. This finding underscores the importance of habitual behaviours shaped by the presence of online ratings and reviews in influencing users' perceptions and interactions within the online shopping environment.

The descriptive statistical analysis reveals a prevalent habit among respondents of relying on online ratings as valuable visual indicators, contributing to immediate insights into the quality and performance of products. This aligns with the

observations of King et al. (2014) and Roy et al. (2018), who assert that online reviews serve as efficient tools, allowing customers to save time and effort of looking for better products. The simplicity inherent in online reviews streamlines the appraisal of the shopping process, providing users with a straightforward and efficient means of making informed decisions (Alalwan, 2020).

Moreover, the habit of considering online reviews, with their inclusion of customer comments, emerges as a significant predictor of the online shopping experience. The literature, particularly the work of Roy & Dutta (2022) and Cabrera-Sánchez et al. (2020), supports this finding by emphasising that online reviews are perceived as highly credible and trustworthy sources of information. Customers tend to return to these sources due to the comprehensive, credible, updated, and relevant information they provide. When users perceive online reviews as reliable, it positively influences their attitudes and perceptions of the online buying platform, contributing to an enhanced overall shopping experience.

Overall, the habitual nature of online shopping is rooted in the efficiency and simplicity offered by online reviews and the perceived credibility of consumer comments in online reviews. Understanding and recognising these habitual patterns provide insights into the factors that contribute to positive online shopping experiences and can inform strategies for enhancing user satisfaction within the digital commerce landscape.

5.5 Chapter conclusion

This chapter discussed results pertaining to the role of the 3Rs in shaping overall online experiences. It was revealed that all the three hypotheses were partially accepted, suggesting that at least each of the 3Rs has an influence on social presence, habit, and performance expectancy. This is summarised in the following table:

Table 17: Summary of hypotheses

Hypothesis	Decision
H1- Review, ratings and recommendations positively influence the creation of social presence, which in turn improves online shopping experiences.	Partially supported
H2- Review, ratings and recommendations positively influence perceived performance of the online shopping site, which in turn improves online shopping experiences.	Partially supported
H3- Review, ratings and recommendations positively influence the formation of habits, which in turn improves online shopping experiences.	Partially supported

The study found that online reviews significantly contribute to the development of social presence, reflecting the interactive and communicative nature of customer reviews. Habit formation, crucial for sustained online engagement, was notably influenced by the information-rich content found in reviews. Meanwhile, both reviews and ratings played a pivotal role in shaping customers' performance expectations, contributing to their overall satisfaction with the online shopping experience. These results provided support for the conceptual model developed in this study, which extended the UTAUT2 to include the role of user generated content in shaping online shopping experiences, which is vital for social media marketers and e-commerce in general. Next is the conclusion of the study.

CHAPTER 6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This study examined the role of review; rating and recommendation systems in enhancing the online customer experience. The study aimed at assessing the influence of review, rating and recommendation systems on social presence, habit formation and performance expectancy which are key antecedents that influence use of online shopping platforms. Conclusions of the study are drawn in this chapter. The chapter aims to conclude the study by integrating results about the hypotheses into the original research questions specified in Chapter 1. Answers to each of the research questions are provided, and key differences between the current study and previous studies are noted. In addition to the conclusions, the chapter presents recommendations of the study to key stakeholders and provides areas that could require further research.

6.2 Conclusions regarding the role of review, rating, and recommendation systems in creating online social presence.

This study sought to understand the role of role of review, rating, and recommendation systems in creating online social presence, thereby enhancing online shopping experience of customers. To provide answers to the first research question, the study employed a structural equation modelling technique to ascertain the relationships between the 3Rs (reviews, ratings, and recommendations) and social presence. The study further analysed the relationship between social presence and online shopping experiences. The results of the study indicated that both online product reviews and product recommendations significantly contribute to the creation of online social presence. Furthermore, the establishment of an online social presence was found

to be associated with an improved overall online shopping experience. Therefore, the research concludes that review and recommendation systems play a pivotal role in creating online social presence, ultimately enhancing the customer's online shopping experience.

In comparison to previous studies (Hajli and Sims, 2015; Sheikh et al., 2019; Alalwan et al., 2019; Algharabat & Rana, 2021), which acknowledged the significance of online reviews, ratings, and recommendations in creating a social presence, the current study stood out in its focus on how social presence was linked with the overall customer online shopping experience in the B2C context. While these earlier studies provided insights into the individual components of the 3Rs and their impact on social presence, they did not explicitly investigate the subsequent influence on the overall online shopping experience.

Therefore, this study addressed the previously unexplored link between the creation of an online social presence and the subsequent impact on the overall online shopping experience. This study was important in providing a holistic understanding of the dynamics at play in the B-to-C online shopping context in South Africa. The analysis of the relationship between social presence and the overall online shopping experience provides businesses and stakeholders with actionable insights to strategically leverage review, rating, and recommendation systems for a more comprehensive improvement of the customer journey. This contributes not only to theoretical advancements but also offers practical implications for enhancing online customer experiences in the rapidly evolving landscape of e-commerce.

Furthermore, on the theoretical front, the contribution of the present study lies in its extension of the UTAUT2 framework, incorporating the role of the 3Rs in influencing key factors of the UTAUT2. This extension addresses the gap identified in the literature, as prior studies did not explicitly explore these connections within the B-to-C online shopping context in South Africa.

Overall, this study highlighted the crucial role of review and recommendation systems in strategically enhancing online shopping experiences through the creation of a robust online social presence. The research emphasised that the presence of online product reviews and recommendations significantly contributes to shaping a positive and enriched overall online shopping experience. This result is important for businesses, emphasising the critical importance of leveraging the 3Rs to cultivate a strong online social presence that, in turn, positively influences the customer's journey and satisfaction in the South African B-to-C online shopping landscape.

6.3 Conclusions on the role of review, rating, and recommendation systems in influencing performance expectancy of online shopping sites

This study sought to understand the role of role of review, rating, and recommendation systems improving perceived performance of online shopping sites, thereby enhancing online shopping experience of customers. Utilising structural equation modelling, the research explored the relationships between the 3Rs and performance expectancy, while also investigating the connection between performance expectancy and the overall online shopping experience. Results revealed that online reviews and product ratings significantly improve the performance expectancy of an online shopping site. Consequently, the study concluded that customers, influenced by shared experiences and product assessments, form performance expectations based on reviews and overall product ratings, thereby influencing their online shopping experiences positively. However, the unexpected result in this study was the result that performance expectancy was not a significant predictor of online shopping experience, contrary to prior studies (Stalidis et al., 2023; Gao et al., 2021).

This current study however differs from previous studies by explicitly investigating how performance expectancy was influenced by online user-generated content,

encapsulated by the 3Rs, and how this expectation was linked to the overall customer experience. From a theoretical standpoint, this study added to the current understanding of technology acceptance models by integrating the influence of user-generated content on performance expectancy, a dimension that has been relatively underexplored in previous studies. On the practical side, businesses can leverage these insights to tailor their strategies, fostering positive performance expectations among consumers and, consequently, delivering a more satisfactory and enriched online shopping experience. In essence, this study not only addresses a gap in the literature but also offers valuable implications for businesses seeking to navigate and thrive in the ever-evolving landscape of e-commerce and social commerce.

6.4 Conclusions regarding the role of review, rating, and recommendation systems in online habit formation.

The final objective was to understand the role of role of review, rating, and recommendation systems in influencing online habit formation, thereby enhancing online shopping experience of customers. The objective was achieved by employing a structural equation modelling technique to ascertain the relationships between the 3Rs and habit formation. The study further analysed the relationship between habit formation and online shopping experience. The results revealed that online product reviews play a crucial role in shaping online habit formation. The establishment of an online habit, in turn, was significantly associated with an improved overall online shopping experience. Consequently, the study concluded that online product reviews hold a central position in the formation of online habits, ultimately contributing to an enhanced online shopping experience for customers in the South African B-to-C online shopping landscape. The presence of online product reviews significantly influences the formation of habits among consumers, thereby playing a pivotal role in enhancing the overall online shopping experience.

Remarkably, there is scarcity studies which explicitly investigated the influence of online user-generated content on habit formation and its subsequent linkage to the overall customer experience. Existing literature, while recognising the importance of online reviews (Rose et al., 2011; Alalwan, 2020; Chen et al., 2022), has not provided a focused examination of how the formation of online habits was specifically influenced by the amalgamation of the 3Rs, particularly within the B-to-C online shopping context in South Africa. The contribution of the current study lies in its revelation of these relationships, marking a significant departure from prior research.

The current study extended the UTAUT2 theoretical framework, advancing the theoretical understanding of technology acceptance and innovatively integrated the role of the 3Rs in shaping user habits and, consequently, influencing the online shopping experience. The study thus contributed to the theoretical front by providing a comprehensive model that captures the dynamics of online user behaviour in the context of e-commerce.

On the practical side, businesses could leverage the insights gained from this study to tailor their online user-generated content strategies, emphasising the role of reviews in habit formation, and understanding how these habits intricately connect with the overall customer experience. The findings serve as a guide for practitioners in optimising the design and implementation of review, rating, and recommendation systems to foster positive online habits among consumers, ultimately enhancing their satisfaction and loyalty in the digital marketplace.

6.5 Conclusions on the role of the 3Rs in enhancing overall online shopping experience.

This study revealed the multifaceted role of review, rating, and recommendation systems in strategically enhancing the online customer shopping experience within the South African B-to-C online shopping landscape. The study concluded

that online product reviews and recommendations play a pivotal role in creating an online social presence, contributing significantly to an enriched social interaction dimension. The study further demonstrated that online product reviews hold a central position in the formation of online habits, ultimately influencing the customer's behavior in the online shopping context. It was also concluded that the performance expectancy of an online shopping site is notably improved by online reviews and product ratings.

From the study, it is evident that 3Rs play a crucial and differentiated role in shaping diverse aspects of the online shopping experience. The 3Rs serve as catalysts for social interaction, instigators of habit formation, and influencers of performance expectations. This study not only extended the UTAUT2 theoretical framework by incorporating the influence of 3Rs but also added to the literature, particularly regarding the explicit links between social presence, habit formation, and performance expectancy with the overall customer shopping experience. Therefore, the study concluded that review, rating, and recommendation systems strategically enhance the online customer shopping experience by fostering a vibrant social presence, influencing habit formation, and shaping performance expectations, contributing collectively to an enriched and satisfying digital shopping journey.

6.6 Recommendations

This study provides recommendations for businesses aiming to navigate the complexities of e-commerce and social commerce effectively. The key stakeholders implicated in these recommendations include online retailers, e-commerce platforms, marketing professionals, and policymakers. Online retailers and e-commerce platforms can refine their strategies by prioritising and optimising the 3Rs, recognizing their influential role in shaping consumer perceptions and behaviors. Marketing professionals can leverage these findings to design targeted campaigns that emphasise the positive impact of user-

generated content. Policymakers may find insights to inform regulations that promote transparency and trust in online transactions. The following specific recommendations were made, guided by the results of this study:

- Online retailers are encouraged to prioritize and optimise strategies for generating and showcasing user-generated content, particularly reviews and product ratings. It is important to encourage customers to share their experiences through easily accessible review and rating features on the platform. Given the result that online product reviews and ratings significantly influence social presence and performance expectancy, a deliberate focus on optimising these elements will contribute to enhancing the overall online shopping experience.

- Online businesses are also advised to implement mechanisms that actively encourage positive habit formation among online shoppers, leveraging the persuasive influence of engaging and informative product reviews. Recognising that online product reviews play a vital role in habit formation, providing features that highlight and promote engaging reviews can contribute to cultivating positive habits among users, enhancing their overall online shopping experience.

- This study recommends active management and promotion of high product ratings by ensuring that top-rated products are prominently featured. Additionally, businesses should devise strategies to encourage customers to provide ratings for purchased products. Actively managing and promoting high ratings enables online retailers to positively influence customers' expectations and perceptions, contributing to an improved online shopping experience.

- Online businesses are encouraged to strategically integrate features that enhance social presence within the online shopping platform. This may

include fostering community engagement, facilitating user interactions, and showcasing user-generated content prominently. Integrating strategies that enhance the sense of community and shared experiences can contribute to an enriched online shopping environment.

6.7 Suggestions for further research

Further research could investigate the impact of personalized recommendations and tailored user experiences on the relationships established in this study. Studies could explore how the customisation of user-generated content and platform interactions can further enhance social presence, performance expectancy, and habit formation, ultimately contributing to an enriched online shopping experience.

The current study would benefit significantly from a mixed-methods approach. A mixed-methods study, incorporating both quantitative and qualitative methodologies, could offer a more comprehensive understanding of the dynamics at play. Qualitative data, such as in-depth interviews or focus group discussions, could capture the richness of customer perceptions, preferences, and experiences related to the 3Rs. Qualitative insights could shed light on the contextual factors that influence how users interpret and respond to online reviews, ratings, and recommendations, providing a more holistic view of the customer journey.

Moreover, the addition of a longitudinal analysis could enhance the study's depth and contribute to a more dynamic understanding of the relationships identified. While the current study provides a snapshot of the relationships at a specific point in time (cross-sectional analysis), a longitudinal approach would allow for the examination of how these relationships evolve over time. This temporal perspective is crucial in understanding the sustainability and long-term impact of user-generated content on social presence, performance expectancy, and habit

formation. Longitudinal analysis could capture changes in consumer behavior, technological advancements, and market trends, providing a more robust foundation for strategic decision-making in the dynamic landscape of B-to-C online shopping.

REFERENCES

Agyare-Dwomoh, Y. (2022, April 16). The shift to e-commerce in SA from bricks and mortar. https://www.iol.co.za/business-report/economy/the-shift-to-e-commerce-in-sa-from-bricks-and-mortar-23ae5726-0643-4044-8077-e0e0bec00b0f

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. https://doi.org/10.1016/j.ijinfomgt.2019.04.008.

Alalwan, A. A., Algharabat, R. S., Baabdullah, A. M., Rana, N. P., Raman, R., Dwivedi, R., & Aljafari, A. (2019). Examining the impact of social commerce dimensions on customers' value cocreation: The mediating effect of social trust. *Journal of Consumer Behaviour*, *18*(6), 431-446. https://doi.org/10.1002/cb.1782

Algharabat, R. S., & Rana, N. P. (2021). Social commerce in emerging markets and its impact on online community engagement. *Information Systems Frontiers*, *23*, 1499-1520.

Apuke, O. D. (2017). Quantitative research methods: A synopsis approach. *Kuwait Chapter of Arabian Journal of Business and Management Review*, *33*(5471), 1-8. DOI:10.12816/0040336.

Ball, H. L. (2019). Conducting online surveys. *Journal of human lactation*, *35*(3), 413-417.

Bandura, A. (1986). Social foundations of thought and action. *Englewood Cliffs, NJ*, *1986*(23-28).

Barari, M., Ross, M., & Surachartkumtonkun, J. (2020). Negative and positive customer shopping experience in an online context. *Journal of Retailing and Consumer Services*, *53*, 101985. https://doi.org/10.1016/j.jretconser.2019.101985

Bloomenthal, A. (2023, September 4). *E-Commerce Defined: Types, History and Examples*. https://007pknotiyal.medium.com/e-commerce-a2d24422fb6c

Boateng, H., Adam, D. R., Okoe, A. F., & Anning-Dorson, T. (2016). Assessing the determinants of internet banking adoption intentions: A social cognitive theory perspective. *Computers in Human Behavior*, *65*, 468-478. https://doi.org/10.1016/j.chb.2016.09.017

Busalim, A., Hollebeek, L.D. & Lynn, T. (2023). The effect of social commerce attributes on customer engagement: an empirical investigation", *Internet Research*, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/INTR-03-2022-0165

Cabrera-Sánchez, J. P., Ramos-de-Luna, I., Carvajal-Trujillo, E., & Villarejo-Ramos, Á. F. (2020). Online recommendation systems: Factors influencing use in e-commerce. *Sustainability*, *12*(21), 8888. https://doi.org/10.3390/su12218888

Chen, C. D., & Ku, E. C. (2021). Diversified online review websites as accelerators for online impulsive buying: the moderating effect of price dispersion. *J. Internet Commer.* 20, 113–135. doi: 10.1080/15332861.2020.1868227

Chen, T., Samaranayake, P., Cen, X., Qi, M., & Lan, Y. C. (2022). The impact of online reviews on consumers' purchasing decisions: Evidence from an eye-tracking study. *Frontiers in Psychology*, 13, 2723. https://doi.org/10.3389/fpsyg.2022.865702

Chevalier, J. A., & Mayzlin, D. (2006). The effect of word of mouth on sales: Online book reviews. *Journal of marketing research*, *43*(3), 345-354. https://doi.org/10.1509/jmkr.43.3.345

Chun Tie, Y., Birks, M., & Francis, K. (2019). Grounded theory research: A design framework for novice researchers. *SAGE open medicine*, *7*, 2050312118822927. https://doi.org/10.1177%2F2050312118822927

Cohen, L., Manion, L., & Morrison, K. (2017). Validity and reliability. In *Research methods in education* (pp. 245-284). Routledge.

Connelly, L. M. (2014). Ethical considerations in research studies. *Medsurg nursing*, *23*(1), 54-56. https://go.gale.com/ps/anonymous?id=GALE%7CA360608990&sid=googleScholar&v=2.1&it=r&linkaccess=abs&iss

Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

Creswell, J.W. (2010). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage.

Dhaigude, S. A., & Mohan, B. C. (2023). Customer experience in social commerce: A systematic literature review and research agenda. *International Journal of Consumer Studies*, *47*(5), 1629-1668. https://doi.org/10.1111/ijcs.12954

Field, A. (2018). *Discovering statistics using IBM SPSS statistics*. 5th ed. Sage.

Flick, U. (2018). *The SAGE handbook of qualitative Research Design*. Sage.

Floyd, K., Freling, R., Alhoqail, S., Cho, H. Y., & Freling, T. (2014). How online product reviews affect retail sales: A meta-analysis. *Journal of retailing*, *90*(2), 217-232. https://doi.org/10.1016/j.jretai.2014.04.004

Gao, Y., Liang, H., & Sun, B. (2021). Dynamic network intelligent hybrid recommendation algorithm and its application in online shopping platform. *J. Intell. Fuzzy Syst., 40*, 9173-9185. https://doi.org/10.3233/JIFS-201579

Ghosh, A., Varshney, S., & RV Dr, S. (2022). Social Word of Mouth valence and role of moderators: An integrated model of consumer decision making. *Journal of International Technology and Information Management*, *31*(1), 1-44. https://doi.org/10.58729/1941-6679.1508

Gupta, S., & Kim, H. W. (2010). Value-driven Internet shopping: The mental accounting theory perspective. *Psychology & Marketing*, *27*(1), 13-35. https://doi.org/10.1002/mar.20317

Hajli, N. (2015). Social commerce constructs and consumer's intention to buy. *International journal of information management*, *35*(2), 183-191. https://doi.org/10.1016/j.ijinfomgt.2014.12.005.

Hajli, N., & Sims, J. (2015). Social commerce: The transfer of power from sellers to buyers. *Technological forecasting and social change*, *94*, 350-358. https://doi.org/10.1016/j.techfore.2015.01.012

Hamer, L. O. (2011). Reducing online buyers' perceptions of risk: A study of online auctions. *Services Marketing Quarterly*, *32*(2), 83-95. https://doi.org/10.1080/15332969.2011.557594

Hong, H., Xu, D., Wang, G. A., & Fan, W. (2017). Understanding the determinants of online review helpfulness: A meta-analytic investigation. *Decision Support Systems*, *102*, 1-11. https://doi.org/10.1016/j.dss.2017.06.007.

Ismagilova, E., Slade, E. L., Rana, N. P., & Dwivedi, Y. K. (2020). The effect of electronic word of mouth communications on intention to buy: A meta-analysis. *Information Systems Frontiers*, 1203–1226. https://doi.org/10.1007/s10796-019-09924-y

Jing-bo, Z., Teng, M. A., Xia, C., & Ting-jie, L. V. (2013). Information asymmetry of online shopping based on signaling game model. *Journal of Beijing University of Posts and Telecommunications (Social Sciences Edition)*, *15*(5), 45-55.

Kang, T. C., Hung, S. Y., & Huang, A. H. (2020). The adoption of online product information: cognitive and affective evaluations. *J. Internet Commer.* 19, 373–403. doi: 10.1080/15332861.2020.1816315.

Khan, S. A. (2023). E-Marketing, E-Commerce, E-Business, and Internet of Things: An Overview of Terms in the Context of Small and Medium Enterprises (SMEs). *Global Applications of the Internet of Things in Digital Marketing*, 332-348. DOI: 10.4018/978-1-6684-8166-0.ch017.

Khwaja, M. G., Jusoh, A., & Nor, K. M. (2019). Does online social presence lead to purchase intentions?. *International Journal of Economic Policy in Emerging Economies*, *12*(2), 198-206. https://doi.org/10.1504/IJEPEE.2019.099730.

Kim, D. J., Ferrin, D. L., & Rao, H. R. (2009). Trust and satisfaction, two stepping stones for successful e-commerce relationships: A longitudinal exploration. *Information systems research*, *20*(2), 237-257. https://doi.org/10.1287/isre.1080.0188

King, R. A., Racherla, P., & Bush, V. D. (2014). What we know and don't know about online word-of-mouth: A review and synthesis of the literature. *Journal of interactive marketing*, *28*(3), 167-183. https://doi.org/10.1016/j.intmar.2014.02.001.

Lackermair, G., Kailer, D., & Kanmaz, K. (2013). Importance of online product reviews from a consumer's perspective. *Advances in economics and business*, *1*(1), 1-5. DOI: 10.13189/aeb.2013.010101.

Lee, J., Park, D. H., & Han, I. (2008). The effect of negative online consumer reviews on product attitude: An information processing view. Electronic commerce research and applications, 7(3), 341-352. https://doi.org/10.1016/j.elerap.2007.05.004

Li, L., Kang, K., Zhao, A., & Feng, Y. (2022). The impact of social presence and facilitation factors on online consumers' impulse buying in live shopping–celebrity endorsement as a moderating factor. *Information Technology & People*, (ahead-of-print). https://doi.org/10.1108/ITP-03-2021-0203

Liu, C., Bao, Z., & Zheng, C. (2019a). Exploring consumers' purchase intention in social commerce: An empirical study based on trust, argument quality, and social presence. *Asia Pacific Journal of Marketing and Logistics*, *31*(2), 378-397. https://doi.org/10.1108/APJML-05-2018-0170

Liu, Q., Huang, S., & Zhang, L. (2016). The influence of information cascades on online purchase behaviors of search and experience products. *Electronic Commerce Research*, *16*, 553-580. https://doi.org/10.1007/s10660-016-9220-0

Liu, Q., Zhang, X., Zhang, L., & Zhao, Y. (2019b). The interaction effects of information cascades, word of mouth and recommendation systems on online reading behavior: An empirical investigation. Electronic Commerce Research, 19(3), 521-547. https://doi.org/10.1007/s10660-018-9312-0

Lu, B., Fan, W., & Zhou, M. (2016). Social presence, trust, and social commerce purchase intention: An empirical research. *Computers in human behavior*, *56*, 225-237. https://doi.org/10.1016/j.chb.2015.11.057

Lv, J., & Liu, X. (2022). The Impact of Information Overload of E-Commerce Platform on Consumer Return Intention: Considering the Moderating Role of Perceived Environmental Effectiveness. *International Journal of Environmental Research and Public Health*, *19*(13), 8060. https://doi.org/10.3390%2Fijerph19138060

Mcleod, S. (2023, December 18). Qualitative Vs Quantitative Research Methods & Data Analysis. https://www.simplypsychology.org/qualitative-quantitative.html

Mou, J., Cohen, J., Dou, Y., & Zhang, B. (2020). International buyers' repurchase intentions in a Chinese cross-border e-commerce platform: A valence framework perspective. *Internet Research*, *30*(2), 403-437. https://doi.org/10.1108/intr-06-2018-0259

Nadhifa, S. (2023). The effect of brand experience and service quality on customer loyalty mediated by customer satisfaction. *International Journal of Research in Business and Social Science (2147-4478)*, *12*(7), 13-23. https://doi.org/10.20525/ijrbs.v12i7.2871

Nayak, M. S. D. P., & Narayan, K. A. (2019). Strengths and weaknesses of online surveys. *technology*, *6*(7), 31-38. DOI: 10.9790/0837-2405053138.

Park, D. H., Lee, J., & Han, I. (2007). The effect of on-line consumer reviews on consumer purchasing intention: The moderating role of involvement. *International journal of electronic commerce*, 11(4), 125-148. https://doi.org/10.2753/JEC1086-4415110405

Pavesa M, Using E-commerce Personalization to Delivery Engaging Customer Experiences, 2023, Ecommerce Personalization for Engaging Customer Experience (thegood.com)

Pavlou, P. A., Liang, H., & Xue, Y. (2007). Understanding and mitigating uncertainty in online exchange relationships: A principal-agent perspective. *MIS quarterly*, 105-136. https://doi.org/10.2307/25148783

Qiu, L., & Benbasat, I. (2009). Evaluating anthropomorphic product recommendation agents: A social relationship perspective to designing information systems. *Journal of management information systems*, *25*(4), 145-182. https://doi.org/10.2753/MIS0742-1222250405.

Rashid, R. M., Pitafi, A. H., Qureshi, M. A., & Sharma, A. (2022). Role of social commerce constructs and social presence as moderator on consumers' buying intentions during COVID-19. *Frontiers in Psychology*, *13*, 772028. https://doi.org/10.3389/fpsyg.2022.772028.

Rosário, A., & Raimundo, R. (2021). Consumer marketing strategy and E-commerce in the last decade: a literature review. *Journal of theoretical and applied electronic commerce research*, *16*(7), 3003-3024. https://doi.org/10.3390/jtaer16070164

Rose, S., Hair, N., & Clark, M. (2011). Online customer experience: A review of the business-to-consumer online purchase context. *International Journal of Management Reviews*, *13*(1), 24-39. https://doi.org/10.1111/j.1468-2370.2010.00280.x

Roy, D. & Dutta, M. A. (2022). Systematic review and research perspective on recommender systems. *J Big Data* **9**, 59. https://doi.org/10.1186/s40537-022-00592-5

Roy, P. K., Ahmad, Z., Singh, J. P., Alryalat, M. A. A., Rana, N. P., & Dwivedi, Y. K. (2018). Finding and rating high-quality answers in community question answering sites. *Global Journal of Flexible Systems Management*, *19*, 53-68. https://doi.org/10.1007/s40171-017-0172-6

Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students*. Pearson education.

Semerádová, T., & Weinlich, P. (2022). The Broad and Narrow Definition of E-Commerce. In *Achieving Business Competitiveness in a Digital Environment: Opportunities in E-commerce and Online Marketing* (pp. 1-26). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-93131-5_1

Sheikh, Z., Yezheng, L., Islam, T., Hameed, Z., & Khan, I. U. (2019). Impact of social commerce constructs and social support on social commerce intentions. *Information Technology & People*, *32*(1), 68-93. https://doi.org/10.1108/ITP-04-2018-0195

Short, J., Williams, E., & Christie, B. (1976). *The social psychology of telecommunications*. London: Wiley.

Stalidis, G., Karaveli, I., Diamantaras, K., Delianidi, M., Christantonis, K., Tektonidis, D., Katsalis, A., & Salampasis, M. (2023). Recommendation Systems for e-Shopping: Review of Techniques for Retail and Sustainable Marketing. *Sustainability*, 15(23), 16151. https://doi.org/10.3390/su152316151

Statista (2024, Feb 15). E-commerce worldwide - statistics & facts. https://www.statista.com/topics/871/online-shopping/#topicOverview

Sürücü, L., & Maslakci, A. (2020). Validity and reliability in quantitative research. *Business & Management Studies: An International Journal*, *8*(3), 2694-2726. DOI: https://doi.org/10.15295/bmij.v8i3.1540

Tantrabundit, P., & Jamrozy, U. (2018). Influence of online review and rating system towards consumer preferences in hospitality sector. *Journal of Business Diversity*, *18*(4), 84-100. https://doi.org/10.33423/JBD.V18I4.248

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478. https://doi.org/10.2307/30036540

Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS quarterly*, 157-178. https://doi.org/10.2307/41410412

Wang, J., Fan, X., Shen, X., & Gao, Y. (2021). Understanding the Dark Side of Online Reviews on Consumers' Purchase Intentions in E-Commerce: Evidence From a Consumer Experiment in China. *Frontiers in Psychology*, *12*, 741065. doi: 10.3389/fpsyg.2021.741065.

Xiao, L., & Li, Y. (2019). Examining the effect of positive online reviews on consumers' decision making: the valence framework. *Journal of Global Information Management (JGIM)*, *27*(3), 159-181.

Yahia, I. B., Al-Neama, N., & Kerbache, L. (2018). Investigating the drivers for social commerce in social media platforms: Importance of trust, social support and the platform perceived usage. *Journal of Retailing and Consumer Services*, *41*, 11-19. https://doi.org/10.1016/j.jretconser.2017.10.021

Yang, S. (2019). The Study of Customer Experience Design and Optimization of Shopping Website: Case Analysis of Amazon in China. *Asian Business Research*, *4*(2), 1-13. https://doi.org/10.20849/ABR.V4I2.591

Yeboah, A., Agyekum, O., Owusu-Prempeh, V., & Prempeh, K. B. (2023). Using social presence theory to predict online consumer engagement in the emerging markets. *Future Business Journal*, *9*(1), 69-79. https://doi.org/10.1186/s43093-023-00250-z.

Zhang, H., & Liu, C. (2021, August). Research on The Impact of Reviews on Consumer Perceived Value in Live Streaming. In *2021 5th International Seminar on Education, Management and Social Sciences (ISEMSS 2021)* (pp. 487-494). Atlantis Press. https://doi.org/10.2991/assehr.k.210806.090

Zhao, J., & Lee, D.H. (2023). Success Factors of Recommendation in Online Shopping: A Comparative Study of Korea and China. *The Academic Society of Global*

Business Administration, 20(4), 160 – 178. https://doi.org/10.38115/asgba.2023.20.4.160.

Zheng, X., Cao, J., Hong, Y., Yang, S., & Ren, X. (2022). Differential Effects of Multi-dimensional Review Evaluations on Product Sales for Mainstream vs. Niche Products. *Niche Products.* https://doi.org/10.25300/misq%2F2022%2F15469

APPENDIX A: RESPONDENT INFORMATION SHEET



Dear Respondents,

You are invited to participate in an academic research study conducted by Claudette Louw for a qualification in Master of Management in Digital Business from the University of Witwatersrand Business School.

The study aims to investigate the role of online reviews; ratings and recommendation systems in strategically enhancing the online customer experience.

This survey is **conducted** anonymously; hence, your name or directly identifiable information will not be requested. Your responses will be handled with extreme **confidentiality** because they cannot be used to identify you personally.

Your participation in this study is very important to us. However, there are no negative effects if you decide not to participate or if you decide to stop at any point.

Please select an answer that applies from the option provided. Please respond as honestly as possible about your experience.

The survey should not take more than **15** minutes of your time.

The study results will be used for academic purposes only and may be published in an academic journal.

Please indicate your acceptance or refusal to complete the survey by ticking the options below.

- o I agree to continue with the survey.
- o No, I do not agree to continue with the survey.

APPENDIX B: ACTUAL INSTRUMENT

Screening questions

For the following two questions, proceed to the next section if the answer is “Yes”. Exit the survey is the answer is “No”.

1. I am 18 years and older

Yes	No

2. I regularly conduct my shopping online

Yes	No

Section A: Demographic Information

1. Age group

Age group	**Tick**
1965 to 1980	
1981 to 1994	
1994 to 2006	

2. Education qualification

Education level	**Tick**
Matric	
Undergraduate	
Postgraduate/honours	
Masters	
Doctorate	

3. **Gender**

Gender	Tick
Male	
Female	
Non-binary/third gender	
Prefer not to say	

4. Area

Area	Tick
Urban	
Semi-urban	
Rural	

SECTION B: SCALES

In each of the following, please indicate the extent to which you agree or disagree with the statements as they pertain to your online shopping experiences. (1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree)

Online reviews

Item	1	2	3	4	5
Product reviews provided by other shoppers improves the confidence of my buying decision					
I find online shopping sites that offer product review information more useful					
The availability of review information on online sites has changed the information I use to make my purchasing decisions					

Online rating

Item	1	2	3	4	5
I actively use product rating capabilities to help me choose my product					
I find online shopping sites that rank products more useful					
The availability of rating information on online sites has changed the information I use to make my purchasing decisions					

Recommendation

Item	1	2	3	4	5
I feel more socially connected to online shopping sites which recommend alternative relevant products					
Sites that offer alternative product recommendations improve my ease of use					
Sites that offer relevant alternative products have influenced what I spend on online shopping sites					

Social presence

Item	1	2	3	4	5
Social connection on online shopping sites improves my online shopping experience					
I experience a sense of human warmth on online shopping sites when I read reviews of other shoppers					
There is a sense of sociability on online shopping sites due to the interconnectedness created by other shoppers offering their product reviews , recommendations and ratings					

Performance expectancy

Item	1	2	3	4	5
Using online shopping sites that provide review, rating and recommendation increases my chances of finding the best products					
I purposefully look for online shopping sites that offer review, rating and recommendation information					
Using online shopping apps that have review , rating and recommendation information reduces my shopping time					

Habit

Item	1	2	3	4	5
I have a habit of choosing online shopping sites which have product reviews, ratings and recommendations.					
The availability of review, rating and recommendation systems has changed my choice of shopping channel from physical stores to online shopping sites					
When shopping online I have developed a habit of looking at review, rating and recommendation information before I choose my product					

Online shopping experience

Item	1	2	3	4	5
Online shopping sites are helpful in my life					
I find it more effective to shop online than physical shopping					
Shopping online is fun					
Overall, I am satisfied with online shopping					

APPENDIX C: STATISTICAL TABLES

RELIABILITY ANALYSIS

REVIEWS				
Reliability Statistics				
Cronbach's Alpha	N of Items			
0,832	3			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OR1	8,05	2,799	0,720	0,744
OR2	8,29	2,950	0,632	0,822
OR3	8,16	2,225	0,742	0,722

RATING				
Reliability Statistics				
Cronbach's Alpha	N of Items			
0,901	3			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ORN1	8,81	1,925	0,821	0,844
ORN2	8,72	1,888	0,853	0,815
ORN3	8,55	2,286	0,747	0,907

RECCOMENDATION				
Reliability Statistics				
Cronbach's Alpha	N of Items			
0,767	3			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ORC1	8,32	2,016	0,677	0,607
ORC2	8,34	1,881	0,578	0,718
ORC3	8,44	2,127	0,555	0,734
PERFORMANCE				

EXPECTANCY				
Reliability Statistics				
Cronbach's Alpha	N of Items			
0,862	3			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PE1	8,38	2,417	0,769	0,776
PE2	8,37	2,744	0,695	0,845
PE3	8,41	2,31	0,755	0,791

SOCIAL PRESENCE				
Reliability Statistics				
Cronbach's Alpha	N of Items			
0,801	3			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SP1	8,44	2,031	0,62	0,759
SP2	8,35	2,341	0,581	0,793
SP3	8,31	1,9	0,748	0,616

HABIT FORMATION				
Reliability Statistics				
Cronbach's Alpha	N of Items			
0,861	3			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
HF1	7,64	4,388	0,727	0,812
HF2	7,71	4,408	0,783	0,763
HF3	7,62	4,393	0,701	0,838

ONLINE SHOPPING EXPERIENCE				
Reliability Statistics				
Cronbach's Alpha	N of Items			
0,875	4			
Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OSE1	12,52	6,693	0,662	0,872
OSE2	12,43	5,818	0,719	0,845
OSE3	12,53	4,325	0,838	0,805

OSE4	12,39	5,505	0,774	0,823

Correlations

		OREV	ORN	ORC	SP	PE	HF	OSE
OREV	Pearson Correlation	1	-0,027	,127*	,220**	,250**	,402**	0,090
	Sig. (2-tailed)		0,658	0,037	0,000	0,000	0,000	0,141
	N	268	268	268	268	268	268	268
ORN	Pearson Correlation	-0,027	1	-0,071	,291**	0,000	-0,063	-0,037
	Sig. (2-tailed)	0,658		0,247	0,000	0,994	0,304	0,549
	N	268	268	268	268	268	268	268
ORC	Pearson Correlation	,127*	-0,071	1	0,054	,130*	0,022	,191**
	Sig. (2-tailed)	0,037	0,247		0,378	0,033	0,718	0,002
	N	268	268	268	268	268	268	268
SP	Pearson Correlation	,220**	,291**	0,054	1	-0,056	0,058	0,031
	Sig. (2-tailed)	0,000	0,000	0,378		0,359	0,344	0,612
	N	268	268	268	268	268	268	268
PE	Pearson Correlation	,250**	0,000	,130*	-0,056	1	,200**	,442**
	Sig. (2-tailed)	0,000	0,994	0,033	0,359		0,001	0,000
	N	268	268	268	268	268	268	268

HF	Pearson Correlation	,402**	-0,063	0,022	0,058	,200**	1	,185**
	Sig. (2-tailed)	0,000	0,304	0,718	0,344	0,001		0,002
	N	268	268	268	268	268	268	268
OSE	Pearson Correlation	0,090	-0,037	,191**	0,031	,442**	,185**	1
	Sig. (2-tailed)	0,141	0,549	0,002	0,612	0,000	0,002	
	N	268	268	268	268	268	268	268

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

**. Correlation is significant at the 0.01 level (2-tailed).

COMPOSITE RELIABILITY AND AVERAGE VARIANCE EXTRACTED

	λ	λ2	ε	sum of λ	sum of λ2	sum of ε	AVE	CR	Sqrt AVE
OR1	0,815	0,664225	0,335775	2,385	1,907043	1,092957	0,64	0,84	0,797
OR2	0,713	0,508369	0,491631						
OR3	0,857	0,734449	0,265551						
ORN1	0,880	0,7744	0,2256	2,604	2,273288	0,726712	0,76	0,90	0,870
ORN2	0,942	0,887364	0,112636						
ORN3	0,782	0,611524	0,388476						
ORC1	0,881	0,776161	0,223839	2,186	1,628598	1,371402	0,54	0,78	0,737
ORC2	0,674	0,454276	0,545724						
ORC3	0,631	0,398161	0,601839						
SP1	0,736	0,541696	0,458304	2,301	1,784549	1,215451	0,59	0,81	0,771
SP2	0,687	0,471969	0,528031						

SP3	0,878	0,770884	0,229116						
PE1	0,876	0,767376	0,232624	2,466	2,035844	0,964156	0,68	0,86	0,824
PE2	0,748	0,559504	0,440496						
PE3	0,842	0,708964	0,291036						
HF1	0,811	0,657721	0,342279	2,471	2,040323	0,959677	0,68	0,86	0,825
HF2	0,879	0,772641	0,227359						
HF3	0,781	0,609961	0,390039						
OSE 1	0,681	0,463761	0,536239	3,214	2,622628	1,377372	0,66	0,88	0,810
OSE 2	0,739	0,546121	0,453879						
OSE 3	0,939	0,881721	0,118279						
OSE 4	0,855	0,731025	0,268975						

MODEL FIT

Fit Index	**Recommended Value**	**CFA Results**	**Final Structural Model**
Goodness-of-fit (GFI)	Less than 0.80 (No fit) Between [0.80-0.90] (acceptable) Above 0.90 (Perfect fit)	0,796	0,916
Normed fit index (NFI)	Less than .80 (poor) Between [0.80-0.90] (acceptable) Above 0.90 (good)	0,776	0,919
Comparative fit index (CFI)	Less than 0.90 (poor) Above 0.90 (good)	0,815	0,931
Incremental fit index (IFI)	Less than 0.90 (poor) Above 0.90 (good)	0,818	0,932
Root mean square error of approximation (RMSEA)	Less than 0.05 (good) Between [0.06-1] (acceptable)	0,114	0,0730

	Above 1 (poor)		
Chi-square (χ2 /DF)	Less than 3 (good) Between [3-5] (acceptable) Above 5 (poor)	4,444	2,407
Tucker-Lewis Index (TLI)	Less than 0.80 (poor) Between [0.80-0.90] (acceptable) Above 0.90 (good)	0,773	0,907
Relative Fit Index (RFI)	Less than 0.80 (poor) Between [.80-.90] (acceptable) Above .90 (good)	0,725	0,901

SEM MODEL

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
SP_	<---	OR_	0,144	0,071	2,014	0,044	par_16
PE_	<---	OR_	0,301	0,071	4,215	***	par_17
HF_	<---	OR_	0,458	0,096	4,756	***	par_18
SP_	<---	ORN_	-0,003	0,067	-0,041	0,967	par_19
PE_	<---	ORN_	0,369	0,069	5,328	***	par_20
HF_	<---	ORN_	0,028	0,079	0,349	0,727	par_21
SP_	<---	ORC_	0,184	0,078	2,352	0,019	par_22
PE_	<---	ORC_	0,063	0,078	0,806	0,42	par_23
HF_	<---	ORC_	-0,015	0,093	-0,163	0,87	par_24
OSE_	<---	SP_	0,481	0,074	6,516	***	par_25
OSE_	<---	PE_	0,094	0,061	1,541	0,123	par_26
OSE_	<---	HF_	0,137	0,05	2,711	0,007	par_27
ORN1	<---	ORN_	1				
ORN2	<---	ORN_	1,058	0,052	20,375	***	par_1
ORN3	<---	ORN_	0,781	0,049	16,077	***	par_2
ORC1	<---	ORC_	1				
ORC2	<---	ORC_	0,896	0,089	10,093	***	par_3
ORC3	<---	ORC_	0,748	0,074	10,11	***	par_4
PE3	<---	PE_	1				

PE2	<---	PE_	0,768	0,056	13,737	***	par_5
PE1	<---	PE_	0,969	0,064	15,22	***	par_6
HF3	<---	HF_	1				
HF2	<---	HF_	0,988	0,057	17,186	***	par_7
HF1	<---	HF_	1,008	0,065	15,5	***	par_8
OSE4	<---	OSE_	1				
OSE3	<---	OSE_	1,43	0,066	21,641	***	par_9
OSE2	<---	OSE_	0,886	0,052	17,011	***	par_10
OSE1	<---	OSE_	0,555	0,045	12,453	***	par_11
SP3	<---	SP_	1				
SP2	<---	SP_	0,749	0,06	12,471	***	par_12
SP1	<---	SP_	0,849	0,071	11,915	***	par_13
OR1	<---	OR_	1				
OR2	<---	OR_	0,794	0,065	12,279	***	par_14
OR3	<---	OR_	1,138	0,08	14,197	***	par_15

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
SP_	<---	OR_	0,151
PE_	<---	OR_	0,284
HF_	<---	OR_	0,355
SP_	<---	ORN_	-0,003
PE_	<---	ORN_	0,334
HF_	<---	ORN_	0,021
SP_	<---	ORC_	0,176
PE_	<---	ORC_	0,054
HF_	<---	ORC_	-0,011
OSE_	<---	SP_	0,439
OSE_	<---	PE_	0,096
OSE_	<---	HF_	0,169
ORN1	<---	ORN_	0,884
ORN2	<---	ORN_	0,94
ORN3	<---	ORN_	0,782
ORC1	<---	ORC_	0,88
ORC2	<---	ORC_	0,679
ORC3	<---	ORC_	0,628
PE3	<---	PE_	0,846
PE2	<---	PE_	0,745
PE1	<---	PE_	0,865

HF3	<---	HF_	0,796
HF2	<---	HF_	0,855
HF1	<---	HF_	0,82
OSE4	<---	OSE_	0,853
OSE3	<---	OSE_	0,951
OSE2	<---	OSE_	0,77
OSE1	<---	OSE_	0,637
SP3	<---	SP_	0,861
SP2	<---	SP_	0,692
SP1	<---	SP_	0,687
OR1	<---	OR_	0,86
OR2	<---	OR_	0,674
OR3	<---	OR_	0,818

Covariances: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
ORN_	<-->	OR_	-0,022	0,033	-0,666	0,505	par_50
ORN_	<-->	ORC_	-0,038	0,031	-1,251	0,211	par_51
ORC_	<-->	OR_	0,094	0,038	2,504	0,012	par_52
e22	<-->	ORC_	0,096	0,035	2,748	0,006	par_28
e21	<-->	e26	0,257	0,042	6,134	***	par_29
e16	<-->	e18	0,106	0,019	5,437	***	par_30
e14	<-->	e18	-0,076	0,019	-3,976	***	par_31
e11	<-->	e18	0,045	0,02	2,214	0,027	par_32
e10	<-->	e17	0,109	0,025	4,392	***	par_33
e10	<-->	e15	-0,166	0,028	-5,957	***	par_34
e6	<-->	e21	-0,152	0,028	-5,376	***	par_35
e4	<-->	e21	0,045	0,024	1,875	0,061	par_36
e4	<-->	e20	-0,045	0,021	-2,133	0,033	par_37
e19	<-->	OR_	0,148	0,033	4,426	***	par_38
e15	<-->	e25	-0,118	0,028	-4,299	***	par_39
e18	<-->	e20	-0,035	0,018	-1,886	0,059	par_40
e16	<-->	e22	-0,05	0,022	-2,255	0,024	par_41
e16	<-->	e20	0,022	0,019	1,108	0,268	par_42
e11	<-->	e13	-0,099	0,021	-4,646	***	par_43
e10	<-->	e22	0,117	0,035	3,304	***	par_44
e10	<-->	e20	-0,051	0,029	-1,78	0,075	par_45
e5	<-->	e8	0,117	0,024	4,893	***	par_46
e5	<-->	e18	-0,11	0,021	-5,182	***	par_47
e11	<-->	ORN_	-0,103	0,03	-3,445	***	par_48

e8	<-->	e13	0,052	0,016	3,169	0,002	par_49

APPENDIX D: ETHICS APPROVAL

Graduate School of Business Administration
University of the Witwatersrand, Johannesburg

Wits Business School

Wits Business School Ethics Committee
Constituted under the University Human Research Ethics Committee (Non-Medical)

Ethics Clearance Certificate

Ethics protocol number: WBS/DB334600/432
This certificate is only valid with a legitimate ethics protocol number and signed by the Researcher (below).
This certificate is only valid if permission has been granted by the Registrar's Office of Wits University.

Project title	Strategic implementation of the 3R's to enhance the online customer experience
Investigator / Researcher	Mrs Claudette Louw
Nature of Project	MM (Digital Business)
Decision of the Committee	Approved, provided stakeholders and participants are guaranteed confidentialty.
Issue Date of Certificate	2023/10/30
Expiry date	Date of submission of the project / research report
Chairperson	Dr Pius Oba +27 11 717 3976 +27 82 733 6587 pius.oba@wits.ac.za

Declaration by Researcher

One copy must be signed by the Researcher and returned to the Chairperson of the Wits Business School Ethics Committee.

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

CA Louw
Signature

27 February 2024
Date: