Gordon Institute of Business Science
University of Pretoria

Product personalisation in the era of big data: the influence on customer loyalty

15311262

A research project proposal submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration.

2 November 2021

ABSTRACT

Personalisation has revolutionized marketing owing to the big data technologies and their adoption across industries. Big brands are using personalisation daily to impact customers and improve customer experience. However, despite the associated benefits of personalisation, privacy remains one of the concerns associated with personalisation. This research study aimed to empirically explain the relationship between personalisation and customer loyalty as well as the existence or not of a moderating effect of privacy concerns on the relationship between personalisation and customer loyalty from an attitudinal and behavioural loyalty viewpoint. The research study was quantitative in nature and followed a descripto-explanatory design with data collected through an online survey. The analysis in the research study was based on 237 mobile telecommunications customers in South Africa who are above 18 years of age and receive personalised products from their network providers. The research study found personalisation directly influences attitudinal loyalty and behavioural loyalty. The study further revealed privacy importance directly influences attitudinal loyalty as well as positively moderate the relationship between personalisation and attitudinal loyalty. Attitudinal loyalty was found to directly influence behavioural loyalty. The implications as well as recommendations for marketing and academia are provided.

KEYWORDS

Personalisation, Attitudinal Loyalty, Behavioural Loyalty, Privacy Concerns, Privacy Importance, Big Data, Reactance Theory, Relationship Marketing Theory

DECLARATION

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

Rato Terrance Lephale
02 November 2021

CONTENTS

ABSTRACT ii
KEYWORDS iii
DECLARATION iv
CONTENTS v
LIST OF TABLES ix
LIST OF FIGURES x
1 CHAPTER 1: INTRODUCTION TO THE RESEARCH PROBLEM 1
1.1 Contextual background 2
1.1.1 Big data, personalisation and privacy 2
1.1.2 Customer loyalty 3
1.1.3 Mobile telecommunications in South Africa 4
1.2 Research problem 5
1.3 Research purpose 5
1.4 Motivation for the study 6
1.4.1 Theoretical need 6
1.4.2 Business need 7
1.5 Research objectives 8
1.6 Delimitations 8
1.7 Chapter summary and outline of report 9
2 CHAPTER 2: LITERATURE REVIEW 10
2.1 Introduction 10
2.2 Relationship marketing theory 12
2.3 Reactance theory 13
2.4 Technology in marketing framework 14
2.5 Customer loyalty 15
2.5.1 Attitudinal loyalty and behavioural loyalty relationship 17
2.6 Personalisation 19
2.6.1 The direct relationship between personalisation and customer loyalty (attitudinal and behavioural) 22
2.6.2 Moderating effect of personalisation on attitudinal-behavioural loyalty relationship 23
2.7 Privacy concerns 24
2.7.1 The direct relationship between privacy concerns and customer loyalty 25

2.7.2 Moderating effect of privacy concerns on the personalisation-customer loyalty relationship 27
2.8 Big data 28
2.9 Conclusion 30
2.9.1 Direct relationship between attitudinal loyalty and behavioural loyalty 30
2.9.2 Relationship between personalisation and customer loyalty (attitudinal and behavioural) and how that relationship is moderated by privacy concerns 30
2.9.3 The moderation effect of personalisation on the attitudinal-behavioural loyalty relationship 31
2.9.4 The direct relationship between privacy concerns and customer loyalty (attitudinal and behavioural) 31
3 CHAPTER 3: RESEARCH HYPOTHESES 32
3.1 Research questions and hypotheses development 32
3.2 Conceptual model 34
4 CHAPTER 4: RESEARCH METHODOLOGY 35
4.1 Introduction 35
4.2 Overview of Research Methodology 35
4.3 Research Design and Methodological Choices 36
4.4 Population 38
4.5 Sampling Method and Size 38
4.6 Unit of Analysis 40
4.7 Measurement Instrument 40
4.8 Pre-test 43
4.9 Data Gathering Process 44
4.10 Analysis Approach 45
4.11 Statistical Assumptions 46
4.12 Factor Analysis 47
4.12.1 Confirmatory Factor Analysis 47
4.12.2 Exploratory Factor Analysis 48
4.13 Quality Controls 49
4.13.1 Reliability 49
4.13.2 Validity 50
4.14 Hypotheses Tests 51

4.15 Research Ethics 52
4.16 Limitations 53
4.17 Chapter Summary 53
5 CHAPTER 5: RESULTS PRESENTATION 55
5.1 Introduction 55
5.2 Chapter layout decision 55
5.3 Research sample obtained 55
5.4 Descriptive statistics 58
5.4.1 Product personalisation 58
5.4.2 Behavioural loyalty 59
5.4.3 Attitudinal loyalty 59
5.4.4 Privacy concerns 60
5.5 Reliability 61
5.6 Validity 62
5.7 Factor analysis 62
5.7.1 Confirmatory factor analysis 63
5.7.2 Exploratory factor analysis 65
5.8 Normality 66
5.9 Research hypotheses 67
5.9.1 Research question 1 67
Direct relationship between attitudinal loyalty and behavioural loyalty 67
5.9.2 Research question 2 68
Direct relationship between personalisation and customer loyalty (attitudinal and behavioural) 68
5.9.3 Research question 3 72
5.9.4 Research question 4 73
5.9.5 Chapter Summary 75
6 CHAPTER 6: RESULTS DISCUSSION 77
6.1 Introduction 77
6.2 Research Process Review 77
6.3 Overview of Research Findings 78
6.4 Research Question 1 Discussion 79
6.4.1 Conclusion on Research Question 1 81
6.5 Research Question 2 Discussion 82
6.5.1 Conclusion on Research Question 2 86

6.6 Research Question 3 Discussion 88
6.6.1 Conclusion on Research Question 3 89
6.7 Research Question 4 Discussion 90
6.7.1 Conclusion on Research Question 4 92
6.8 Chapter Summary 92
7 CHAPTER 7: CONCLUSION 93
7.1 Introduction 93
7.2 Model Reformulation 94
7.3 Key Findings and Implications 95
7.3.1 Theoretical Implications 95
7.3.2 Implications for Business 97
7.4 Limitations of the Study and Suggestions for Future Research 99
7.5 Conclusion 100
References 102
Appendices 109
Appendix 1 – Research Golden Thread 109
Appendix 2 – Ethical Clearance 110
Appendix 3 – Survey questionnaire 111
Appendix 4 – Frameworks 116
Appendix 5 – Statistics 118

LIST OF TABLES

Table 1: Summary of key personalisation-customer loyalty relationships 23
Table 2: Summary of key privacy concerns-customer loyalty relationships 26
Table 3: Summary of key privacy concerns-customer loyalty relationships 27
Table 4: Construct measurement 41
Table 5: Respondent demographics 56
Table 6: Product personalisation descriptive statistics 58
Table 7: Behavioural loyalty descriptive statistics 59
Table 8: Attitudinal loyalty descriptive statistics 60
Table 9: Privacy concerns descriptive statistics 61
Table 10: Cronbach alpha per construct 62
Table 11: CFA metrics 63
Table 12: Item loadings, composite reliability and AVE 64
Table 13: Discriminant validity statistics (correlations and square root of AVE in brackets) 65
Table 14: Exploratory factor analysis results 65
Table 15: Privacy concerns latent factors 66
Table 16: Normality tests 67
Table 17: Correlation between attitudinal loyalty and behavioural loyalty 68
Table 18: Correlation between personalisation and customer loyalty (attitudinal and behavioural) 69
Table 19: HMR results on privacy concern (PC2) moderation on PP-AL 70
Table 20: HMR results on privacy importance (PI) moderation on PP-AL 71
Table 21: HMR results on privacy concern (PC2) moderation PP-BL relationship 72
Table 23: HLMR results on personalisation moderation on AL-BL relationship 73
Table 24: Correlation between privacy concern (PC2) and customer loyalty (attitudinal and behavioural) 74
Table 25: Correlation between privacy importance (PI) and customer loyalty (attitudinal and behavioural) 74
Table 26: Summary of hypotheses 76
Table 27: Item and item total correlations 118
Table 28: Item correlations 120
Table 29: Preliminary Item loadings, composite reliability and AVE 122
Table 30: Preliminary Discriminant validity statistics (correlations and square root of AVE in brackets) 122
Table 31: Measures of shape 123

LIST OF FIGURES

Figure 1: Literature review layout 11
Figure 2: Technology in marketing framework 14
Figure 3: Conceptual model proposed in the study 34
Figure 4: Research methodology overview 35
Figure 5: Respondents' distribution by plan type 57
Figure 6: Respondents' distribution by Personalisation Product 57
Figure 7: Research findings model 78
Figure 8: Reformulated model 94
Figure 9: Personalised mobile marketing framework 116
Figure 10: The framework of personalisation 117
Figure 11: SPSS output: Privacy concerns reliability 119
Figure 12: CFA Measurement model 121
Figure 13: SPSS output: EFA results for privacy concerns 124
Figure 14: Scatter plots for summated scales 125
Figure 15:SPSS Output: Pearson correlations 126
Figure 16: SPSS Output: HMR results for privacy concern (PC2) moderation on PP-AL relationship 127
Figure 17: SPSS Output: HMR results for privacy importance (PI) moderation on PP-AL relationship 128
Figure 18: SPSS Output: HMR results for privacy concern (PC2) moderation on PP-BL relationship 129
Figure 19: SPSS Output: HMR results for privacy importance (PI) moderation on PP-BL relationship 130
Figure 20: SPSS Output: HMR results for personalisation (PP) moderation on AL-BL relationship 131
Figure 21: SPSS Output: Spearman's rho correlations 132

1 CHAPTER 1: INTRODUCTION TO THE RESEARCH PROBLEM

This research studies the marketing practice of product personalisation and its influence on customer loyalty under the moderating effect of privacy concerns owing to the rise in big data technologies adoption. The research study used a deductive quantitative approach to empirically investigate the relationship between personalisation and customer loyalty under the moderation of privacy concerns in the South African mobile telecommunications context.

The research study adopts a specific view of personalisation as it occurs in the mobile telecommunications industry in relation to data and voice products. It adopts a specific view on customer loyalty through the lens of both attitudinal and behavioural loyalty and how these are influenced by personalisation under moderation of privacy concerns on the defined relationships.

This research study makes a contribution to academia by articulating relationships through empirical evidence in relation to product personalisation as it occurs in the mobile telecommunications industry in the age of big data. The relationships are further articulated under the moderation effects of privacy concerns. Thus, the research study will ultimately make a contribution to loyalty literature about the influence of product personalisation under moderation effect of privacy concerns in achieving customer loyalty.

The research study also contributes to business through its findings on the relationships between product personalisation and customer loyalty as well as the moderation effect of privacy concerns on these relationships. The insights can help business practitioners make informed decisions with regards to using customer data to personalise products in search of loyalty and competitive advantage.

This chapter provides the contextual setting of the research, both from a business and academic point of view thus outlining the research need. Product personalisation is common in the mobile telecommunications industry however, there is limited research in understanding the influence on customer loyalty particularly in the context of the rise in big data and related technologies.

1.1 Contextual background

1.1.1 Big data, personalisation and privacy

The rise in big data has unlocked an associated data revolution upon which Chintagunta, Hanssens and Hauser (2016) position that firms are starting to harness vast amounts of data in various forms with the ability to process the data faster and on a real-time basis in certain instances. The researchers noted that firms adopting big data related technologies are tracking and keeping storage of large volumes of data (behavioural including text and video, demographics and location based) which in turn enable them to customize customer journeys and provide personalisation using marketing analytics (Chintagunta, Hanssens, & Hauser, 2016; Wedel & Kannan, 2016). Big data relates to high volume, velocity and variety of information that supports decision making (Gartner, n.d.). Big data associated technologies include machine learning's application of predictive analytics which provide capabilities to process data related to customers and provide predictive insights into what customers would prefer thus allowing for personalisation (AnalyticsSteps, 2020).

Personalisation has become an order of the day with big brands such as Amazon and Spotify adopting it daily to impact customers (Morgan, 2020). Multidisciplinary research by Grewal, Hulland, Kopalle and Karahanna (2020) highlights how the likes of Amazon have revolutionized customer experience through the early adoption of big data technologies to provide ground-breaking customer experiences through recommender systems that provide personalisation. The authors further note the growing need for marketing science and big data to establish more synergies.

Personalisation entails restricting customer choice by presenting offers the business believes would appeal to the customers' needs and as such, several studies have demonstrated its benefits for business (McKinsey&Company, 2020). However, despite the associated benefits of personalisation and big data technologies, privacy remains one of the concerns and drawbacks of these technologies (Vlacic, Corbo, Costa e Silva, & Dabic, 2021). Privacy concerns relate to the perceptions that customers have around how businesses use their personal data (Xinyu, Jian, & Hongyan, 2021). McKinsey and Company (2019) note that despite the march

towards personalisation marketing practices by most businesses in search of market leadership, privacy concerns can erode the benefits intended to be delivered by personalisation. They provide frameworks for ensuring data privacy and security across the digital marketing value chain. A further argument found in business research is that customers are showing low trust levels relating to the use of their personal information by organisations and this has even led to regulations around the world on the use of customer personal information (McKinsey&Company, 2020). Thus, data privacy has become an even more important subject for business given the heightened new regulations governing the use and application of customer data. In particular, the General Data Protection Regulation (GDPR) came into effect in 2018 and provides guidelines that European businesses should adhere with regards to the use of personal data where personal data is any data that can be linked to a person whether directly or indirectly (Deloitte, n.d.). In South Africa, Protection of Personal Information Act (POPIA) became effective in July 2021 and it is a requirement of the act for businesses to have a data privacy programme in order to be POPIA compliant (Deloitte, 2021).

Thus, in the context of personalisation in the era of big data and the associated privacy concerns, understanding the influences of personalisation as a marketing practice becomes important for unlocking the needed returns as businesses find synergies between big data and marketing practice. This study aimed to unpack that understanding from a customer loyalty point of view.

1.1.2 Customer loyalty

Besides being a source of competitive advantage, there is an argument that customers are much more likely to change their loyalty towards a brand than marketers assume (Cossío-Silva, Revilla-Camacho, Vega-Vázquez, & Palacios-Florencio, 2016; Lafley & Martin, 2017). Thus, it becomes of importance for organisations to understand the influencers of customer loyalty to maintain a competitive advantage. Customers are increasingly presented with more choices and switching costs are lower, thus it has become a growing challenge for organisations to achieve customer loyalty despite the ongoing search by marketers whose goal is to achieve customer loyalty (Narvanen, Kuusela, Paavola, & Sirola, 2020; Watson IV, Beck, Henderson, & Palmatier, 2015). Together with the growing

adoption in personalisation as well as privacy concerns already outlined, there is motivation for the research study to empirically investigate the influence that personalisation has on customer loyalty in light of the growing privacy concerns which are exacerbated by increasing adoption of big data technologies in the digital economy. This study sought to explain this phenomenon in the mobile telecommunications context, both from an attitudinal and behavioural loyalty point of view, the definitions of which are covered in the literature review section.

1.1.3 Mobile telecommunications in South Africa

It has become common practice to drive personalisation in the South African telecommunications market for retail customers with Vodacom's Just4U, MTN's MyMTN and Telkom's Mo'Nice providing personalised products for their retail customers (Vodacom, 2019; MTN, n.d.; Telkom, n.d.). This has motivated the researcher's choice of the mobile telecommunications context for the study. Vodacom, the leading mobile operator by subscriber market share in South Africa, describes their Just4U product as one that "offers personalised deals based on what you use most frequently", whilst MTN the second leading mobile operator by subscriber market share described their MyMTN product as one that offers "voice and data deals are based on your usage behaviour patterns, affordability and preferences" (BusinessTech, 2019; Vodacom, 2019; MTN, n.d.). Telkom, the third-largest mobile operator described their Mo'Nice product as one which gives "discounted offers on call minutes and data bundles, tailored just for you!" (BusinessTech, 2020; Telkom, n.d.). A common thread in all these is an indication that customer data in different forms is being consumed across the spectrum to enable this personalisation.

Given the increasingly saturated mobile telecommunications market in South Africa as well as the ease of switching sim cards as well as multiple-sim behaviour for customers (particularly prepaid customers), achieving customer loyalty becomes an important factor for sustaining growth (MyBroadband, 2020; Deloitte, 2017; Van der Merwe, 2015). Achieving customer loyalty would mean achieving long term relationships with customers which will eventually generate repeat purchases and thus less switching to competitors (Wolter, Bock, Smith, & Cronin Jr, 2017). Thus, as personalisation is adopted at scale by mobile telecommunications businesses in

South Africa, it becomes important to understand how it influences the needed customer loyalty.

1.2 Research problem

The research problem is centred on deriving an understanding of whether or not personalisation helps organisations achieve customer loyalty in light of the investments made into big data technologies to drive personalisation and the associated customer privacy concerns. There is a predicted rise in the adoption of personalisation across industries to drive marketing as the digital economy matures (McKinsey & Company, 2019). There are also indications that data privacy concerns are on the rise for customers (ChiefMarketer, 2018; McKinsey&Company, 2020; Forbes, 2020). Understanding the influences that a shift to personalisation in light of growing privacy concerns has on customer loyalty will allow businesses to position their marketing strategies in a manner that would allow them the competitive edge.

As already outlined, regulations are being tightened to govern the use of personal data by businesses (e.g., GDPR and POPIA) therefore making data privacy an important subject for businesses. Thus, on the same note, understanding the influences of privacy concerns can enable businesses prioritise efforts that would contribute positively to regulatory requirements. Though existing studies have been done to understand factors influencing customer loyalty, there has not been much empirical studies to unpack the influence that personalisation would have on loyalty, particularly in its attitudinal and behavioural nature respectively. Therefore, given the much-predicted growth in the adoption of big data technologies to drive personalisation marketing models as well as the evident growth in privacy concerns, it became imperative to understand the influence these would have on customer loyalty, thus illuminating the need for this study.

1.3 Research purpose

This research aimed to empirically examine the relationship between personalisation and customer loyalty as well as the existence or not of a moderating effect of privacy concerns on the relationship between personalisation and customer loyalty. Thus, the research investigated if the construct of personalisation and privacy concerns

influence customer loyalty. This will deepen understanding of the influence the rise in the use of big data technologies adopted in organizations for personalised marketing has on customer loyalty. Thus, in the context of relationship marketing theory which positions that personalisation as a tool should achieve loyalty (Bojei, Julian, Wel, & Ahmed, 2013), this research study was grounded on this theory to empirically establish relationships between personalisation and customer loyalty.

The overarching research question is: is there an influence of personalisation on customer loyalty under the moderation effect of privacy concerns on their relationship? Given the existence of theories and studies that explain the concept of customer loyalty, this study adopted a deductive approach.

1.4 Motivation for the study

1.4.1 Theoretical need

Current research emphasizes the predicted rise in the adoption of big data technologies and raises questions on whether or not this would undermine customers' autonomy of choices and whether customers would react positively or not to the loss of autonomy (Davenport, Guha, Grewal, & Bressgott, 2020). Reactance theory, which grounded this study, positions that personalisation may lead to unintended consequences for businesses particularly when customers have concerns around their personal privacy (Martin & Murphy, 2017). Davenport et al. (2020) call for more research around the influence new technologies have on customer behaviour, particularly how that behaviour will change due to the adoption of big data related technologies. In particular, Grewal, Hulland, Kopalle, & Karahanna (2020) argue that big data technologies trigger concerns related to privacy risks. Therefore, given the rise in adoption of big data and related technologies and the predicted rise in such technologies in predicting customer choices and personalisation of such choices for customers as well as the associated privacy concerns, there is a need to understand how these will influence loyalty and hence illuminating the focus of this study.

The study contributes to the debate around personalisation and its influence on loyalty and further responds to a call from Ball, Coelho, & Vilares (2006) to study personalisation's influence on loyalty in contexts other than banking. From a South African and mobile telecommunications context, there is insufficient research related to the outcomes of personalisation. The study adds a further contribution in response to a call by Davenport et al. (2020) in their theoretical paper calling for future research to understand how the privacy-personalisation paradox evolves.

1.4.2 Business need

As Lafley & Martin (2017) put it, brands have a challenge of turning their initial value proposition into one that becomes a habit for their customers and thus build a loyal base to sustain their competitive advantage. Bigger organisations of our time have adopted personalisation marketing in their day-to-day marketing including Spotify, Amazon and Netflix (Morgan, 2020). There is a predicted rise in the adoption of personalisation by marketers as the digital economy matures and more data is collected around customer behaviour (Boudet, Gregg, Rathje, Stein, & Vollhardt, 2019). Whilst loyalty remains an important goal of marketing in organisations for achieving and sustaining competitive advantage, there are not enough empirical studies done to understand the influence of personalisation on customer loyalty particularly in industries such as telecommunications. This would leave marketers pursuing personalisation strategies without an understanding of whether it is helping them achieve the marketing goal of loyalty. The urgency for the study was, therefore, driven by the high adoption of big data technologies which is revolutionizing the way marketing is done and the rising privacy concerns, putting pressures on organisations to transform the way they do marketing. Grewal et al. (2020) argue that organisations must be able to strike a balance between the risking of privacy concerns by customers and the use of customer data for personalisation. This research study therefore provided important additional learnings around personalisation and its influence on loyalty.

1.5 Research objectives

Given the theoretical and business motivations for the study, the primary objective of this study was to explain the following:

I. Whether there is a relationship between personalisation and customer loyalty (attitudinal and behavioural) and how that relationship is moderated by privacy concerns.

The other objectives of the study were to explain:

II. The direct relationship between privacy concerns and customer loyalty (attitudinal and behavioural);
III. The direct relationship between attitudinal loyalty and behavioural loyalty;
IV. The moderating effect of personalisation on the relationship between attitudinal loyalty and behavioural loyalty;

1.6 Delimitations

The study is descripto-explanatory in nature; thus, no causalities can be inferred. Its focus is limited to the users of personalisation products from mobile telecommunications companies in South Africa and it does not focus on mechanisms to deliver personalisation.

1.7 Chapter summary and outline of report

This chapter has given a brief background to the research problem, positioned the motivation for the study as well as the main study objective. The key concepts involved have been introduced. The position of relationship marketing theory and reactance theory was established.

Chapter 2 reviews and positions the academic literature and the theoretical frameworks as well as definitions upon which the study is grounded. It presents past literature on personalisation and loyalty suggesting relationships and hypotheses. Linking to the preceding Chapter 2, the research questions are formulated in Chapter 3 as well as the associated hypotheses. The chapter concludes with a presentation of the conceptual model proposed for this study. The methodological choices are presented in Chapter 4 as well as the design choices used for the study. The detailed limitations of the study are located in this chapter as well as justification behind the measurement instrument and sample. Chapter 5 presents the results, from descriptive statistics to inferential statistics on the hypotheses detailed in Chapter 3. The chapter concludes with a summary of the hypotheses results uncovered during this study. Chapter 6 discusses the results of the study followed by the conclusion of the research study as well as suggestions for future research in Chapter 7.

2 CHAPTER 2: LITERATURE REVIEW

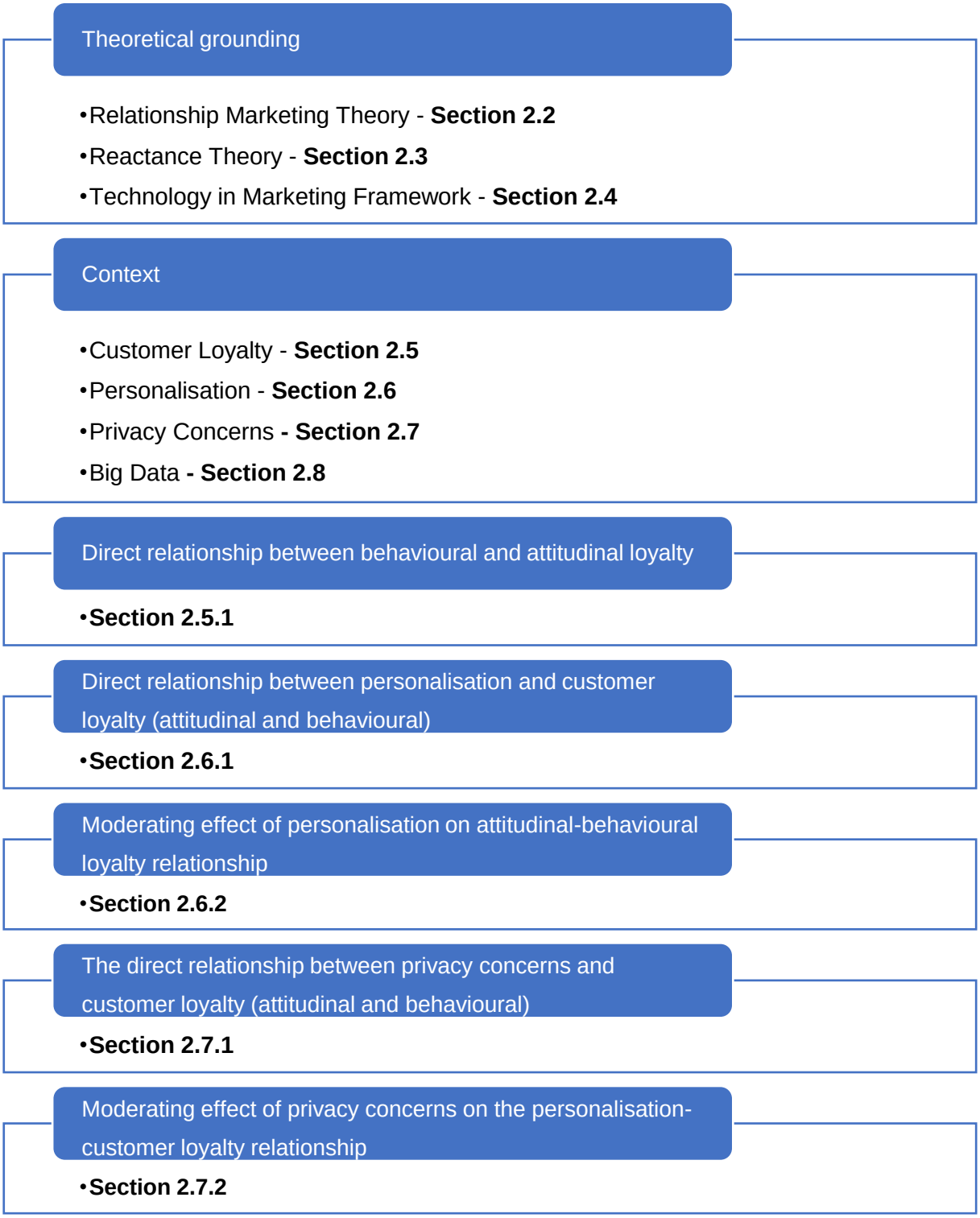
2.1 Introduction

The previous section discussed the motivation and thus the importance of understanding the influence of personalization on customer loyalty. The transformation taking place in organizations to collect and consume more data about customers for marketing reasons using personalization of products through the application of big data technologies was positioned together with the associated privacy concerns. This chapter provides detailed understanding of the recent literature and debates regarding the relationship between product personalization and loyalty as well as the moderation thereof, of privacy concerns on this relationship.

The chapter starts off with the discussion of the theories upon which the study is grounded, namely the relationship marketing theory, reactance theory as well as the technology in marketing framework. The relationship marketing theory is positioned to ground personalization as a predictor of customer loyalty whilst the reactance theory accounts for the constraints of privacy concerns which might erode the intended benefits of personalization on customer loyalty. Combining these theoretical considerations is the technology in marketing framework which positions personalization as an application of machine learning and artificial intelligence within the big data context and the possible influence it has on customer loyalty under moderation of privacy concerns.

In line with the research objectives outlined Section 1.3, the chapter then broadly discusses customer loyalty as well the contexts of personalization, big data technologies and privacy concerns as positioned in literature. The arguments for the relationships amongst product personalization, customer loyalty and privacy concerns are presented based on existing literature. The sections highlighted in Figure 1 present key findings on these relationships and hence the grounding for the hypotheses deduced. The chapter concludes with a discussion around the key literature findings as well as a summary of these findings which form a basis for the research questions and hypotheses outlined in Chapter 3.

Figure 1: Literature review layout



2.2 Relationship marketing theory

Developing value relationships with customers should be a priority for businesses as Bojei, Julian, Wel, and Ahmed (2013) noted this practice delivers more cost efficiencies as compared to acquiring new customers. The researchers further noted adopting relationship marketing culture helps businesses achieve customer loyalty and beyond, to opportunities such as cross-selling into the existing customer base since loyal customers would have a lower chance of switching to competition. This research study used the relationship marketing theory as an initial grounding of the key constructs in the research study, particularly personalisation and customer loyalty.

According to Morgan and Hunt (1994), relationship marketing is about developing and growing relationships with customers and the success depends on commitment and trust in the relationship between businesses and customers. The theory has been examined from different perspectives by scholars and Bojei et al. (2013) note personalisation as one of the tools for relationship marketing and have found it has an impact on customer retention. This research study therefore grounds the personalisation and customer loyalty in relationship marketing theory.

Literature on relationship marketing suggests that relationship marketing leads to customer loyalty. An empirical study by Sharifi and Esfidani (2014) found the constructs of relationship marketing to have an influence on customer loyalty. In this study, personalisation as a tool for relationship marketing is being studied to examine the empirical evidence on how it influences customer loyalty thus providing further opportunity to contribute to literature around relationship marketing. In the same breadth, literature also warned about the risks associated with personalisation, particularly in the context of privacy concerns and reactance theory helps unpack that understanding to further ground the objective of this research study.

2.3 Reactance theory

Understanding the acceptance of personalised products by customers can help marketing professionals craft better personalisation strategies for continued success. The reactance theory upon which this research study was grounded, provided an understanding of how consumers would react to personalised products given their privacy concerns (Martin & Murphy, 2017). Reactance theory argues consumers direct their motivation towards behaviours where they perceive their freedom is being constrained or threatened and act in contrary to the threat (Clee & Wicklund, 1980; Chen, Jian, & Hongyan, 2021). A widely studied theory in marketing, reactance theory in relation to personalisation implied customer reaction to personalisation could be negative and unintended behaviours that erode the expected value of personalisation (Martin & Murphy, 2017). Thus, it becomes imperative for marketing professionals to understand the influences that personalisation would have on customer behaviour and this study unlocked that understanding in the context of customer loyalty. Consistent with the views of reactance theory is the view that is shared by Davenport et al. (2020) that personalisation may erode the autonomy of choice that customers require, thus ultimately leading undesirable behaviours.

A study by White, Zahay, Thorbjørnsen, & Shavitt (2008) in the context of email personalisation showed that too much personalisation with no justification is more likely to lead to reactance, the effect of which differs along customer utility of the product. Literature analysis by Martin and Murphy (2017) showed in the context of privacy, customers are more likely to react positively to personalisation when they perceive some level of control over their private information and thus are less concerned about their privacy. Thus, in line with reactance theory, it became clear the results of personalisation may be those that are in contrary to the intentions of marketing professionals and that privacy concerns play a vital role in prediction of the reaction from customers to personalised products (White et al.,2008). This research study therefore provides further understanding of the influences that personalisation and privacy concerns have on customer behaviour.The theoretical propositions outlined provided further enchoring for the objective of this research study which was to empirically understand the influence of privacy concerns on the personalisation-customer reaction relationship where customer reaction is defined in

the context of customer loyalty (both from an attitudinal and behavioural point of view).

2.4 Technology in marketing framework

The technology in marketing framework was positioned as another grounding for the research study. A study by Grewal et al. (2020) provided a framework that highlighted the intermediary effects of technology such as privacy, influence customer loyalty and it is upon this framework this research study was anchored further. The researchers asserted that personalisation, as positioned in the artificial intelligence (AI) and machine learning landscape, can influence customer loyalty with privacy being in the middle of this personalisation and loyalty (see Figure 2). The authors further highlighted the need for further research to establish the effects the technologies in marketing have on customer behaviour and hence loyalty. Therefore, this emphasized the need for this research study which will take an empirical approach to examine the influence of personalisation on customer loyalty.

Figure 2: Technology in marketing framework

Note. The figure shows a directional relationship between AI (used to drive personalisation) and loyalty, with privacy in the middle of that relationship. From “The future of technology and marketing: a multidisciplinary perspective,” by Grewal et al.,2019, Journal of the Academy of Marketing Science,48,p.3.Copyright 2020 by Springer.

As Shankar, Kalyanam, Setia, Golmohammadi, Tirunillai, Douglass, Hennessey, Bull, Waddoup (2021) note, personalisation delivered through AI applications is changing the retail landscape and the effects of the outbreak of COVID-19 pandemic have demonstrated somewhat a leap in such technologies. Given this high rise in adoption of personalisation and the theoretical underpinnings of its influence on customer loyalty, this research study provided empirical findings in the mobile telecommunications context to further articulate relationships that exist between personalisation and customer loyalty in the era of big data.

2.5 Customer loyalty

The theories grounding this research study have already been outlined and as such, this study ultimately aimed to empirically understand the influence of personalisation as a relationship marketing tool and its impact on customer loyalty as well as understanding the effect privacy concerns have on this influence as grounded in reactance theory. One of the objectives of relationship marketing is customer loyalty (Sharifi & Esfidani, 2014) and achieving customer loyalty will enable businesses to differentiate and gain competitive advantage thus emphasizing the importance of understanding the predictors of customer loyalty from a theoretical and business point of view (Cossío-Silva et al.,2016). Loyal customers provide bigger potential for cost saving as well as revenue growth however, despite its relevance and importance, customer loyalty is diminishing (Wolter, Bock, Smith, & Cronin Jr, 2017). Marketing professionals should therefore gain a deeper understanding into the predictors of customer loyalty and this research study aimed to add to that understanding.

As Cossío-Silva et al. (2016) put it, loyal customers will have repeat purchases from the same organisation and will maintain a positive attitude towards that organisation. The much-studied concept of customer loyalty was defined by Watson et al. (2015) as a “collection of attitudes aligned with a series of purchase behaviours that systematically favour one entity over competing entities” (p.803). This definition was formulated by the researchers through a review of decades of research around customer loyalty. The researchers further guided that to understand the influence on loyalty by its antecedents, a view must be taken to measure or define loyalty from an attitudinal loyalty and behavioural loyalty viewpoint. This research study adopted that

position and aimed to understand the influences of personalisation on both attitudinal and behavioural loyalty. As highlighted by Cossío-Silva et al. (2016), an understanding of both behavioural and attitudinal loyalty carries an important bearing for organisations' competitive advantage. Wolter, Bock, Smith and Cronin (2017) defined behavioural loyalty as one that exhibits continuing actions towards a specific object, which, for this research study, object means the organisation. They defined attitudinal loyalty as one that "represents a predisposition to engage in behaviours based on favourable evaluations of the loyalty object" (Wolter, Bock & Smith, 2017, p. 459).

As a tool to try and achieve customer loyalty, businesses implement loyalty programmes and theoretical underpinnings have been developed to understand the effect that these programmes have on customer loyalty as presented in a framework by (Kim, Steinhoff, & Palmatier (2021). This research study, however, took the view of personalisation as a marketing practice grounded in relationship marketing theory in relation to customer loyalty, both from a behavioural and attitudinal point of view. A gap still existed in research to uncover the influence of personalisation in the age of big data on customer loyalty from a behavioural and attitudinal point of view.

A meta-analysis study by Gremler, Van Vaerenbergh, Brüggen and Gwinner (2020) emphasized the importance of studying and understanding customer loyalty, both from an academic and business point of view. They provided a framework towards achieving customer loyalty under which, relational benefits such as special treatment are positively related to perceived value which in turn mediates the relationship between social benefits and relationship quality. Ultimately, relationship quality mediates the relationship between perceived value and customer loyalty. The study found a statistically significant correlation between relational benefits (including special treatment and social) and customer loyalty. Other factors of significant relationship with customer loyalty included switching costs, relationship quality and perceived value. The researchers presented the limitations through the meta-analysis study and positioned the need for more research to better understand the construct of customer loyalty and one of the suggestions related to more studies around identity-related relational benefits. They concluded in their recommendations for further studies that "the use of technology to facilitate service delivery is an understudied consideration for relational benefits. With the help of artificial

intelligence, technology delivers increasingly consistent service (perhaps fuelling confidence benefits) and provides customized solutions (special treatment benefits) that seem personal to customers (social benefits)" (Gremler et al., 2020, p. 581). The research study presented in this report was therefore relevant to currently needed research as it sought to empirically understand the influence of personalisation in the age of big data (special treatment and social benefits) on customer loyalty under the moderating effect of privacy concerns on the relationship.

2.5.1 Attitudinal loyalty and behavioural loyalty relationship

According to Watson et al. (2015), attitudinal loyalty relates to the customers' attitude towards a brand, which, for this research study, meant attitude towards a mobile telecommunications company. A loyal customer from an attitudinal point of view displays positive attitude towards a brand. Felix (2014) however noted customers can display similar loyalty towards more than one brand. Thus, it becomes critical for firms to achieve differentiation in value proposition in order to attract more attitudinal loyalty from same customers relative to competitors. This is particularly important in the South African mobile telecommunications context where a phenomenon of customers having services with more than one mobile telecommunications company is common. This is commonly known as multiple-sim behaviour as outlined by Oyatoye, Adebiyi, and Amole (2015). Watson et al. (2015) argued a positive attitude will induce a process during the customer's decision journey for them to favour one brand over the competitor brand. Companies therefore, need to distinguish on characteristics that make it easier for customers to differentiate them from competitors. These attitudinal loyalty characteristics are referred to by Umashankar, Bhagwat, & Kumar (2017) as the psychological component of the customer relationship with a brand which may not only precede purchase behaviour but important word-of mouth by customers to others through recommendations. This research study assessed product personalisation's psychological influence on attitudinal loyalty in the mobile telecommunications context.

Customers display behavioural loyalty if their behaviour exhibits repeat purchases from the same company which ultimately lead to more revenue and a higher share of wallet for the company (Umashankar, Bhagwat, & Kumar, 2017). Thus, on the basis of this argument, achieving behavioural loyalty from customers is important for

companies to achieve better performance. However, according to Umashankar et al. (2017) behavioural loyalty on its own is not sufficient for achieving more revenue. They argue that as customer behavioural loyalty increases, their price sensitivity also increases thus emphasising the point companies should not fall into the trap of assuming less elasticity for repeat purchasers. As Watson et al. (2015) argued, behavioural loyalty ignores the psychological aspects associated with a customer's actions and repeat purchases could purely be a consequence of constraints imposed by the prevailing situation. Consequently, Umashankar et al. (2017) found attitudinal loyalty is a key moderator in helping reduce the price sensitivity of behavioural loyal customers. Thus, both attitudinal and behavioural loyalty are essential for companies to achieve superior performance. Given the adoption of personalisation by mobile telecommunications companies in South Africa, this research study was relevant in empirically discovering the influence that personalisation had on both behavioural and attitudinal loyalty which are essential for firm performance.

With regards to behavioural loyalty and attitudinal loyalty relationship, a study by Cossío-Silva et al. (2016) found there is a statistically significant positive relationship between attitudinal and behavioural loyalty towards an organisation. They found attitudinal loyalty as a pre-condition aid in achieving repeat purchases from customers and thus behavioural loyalty. Further to that, they highlighted many other studies confirmed the relationship between behavioural loyalty and attitudinal loyalty. Their study was conducted in the context of personal care industry. Consistent with the results of the study by Cossío-Silva et al. (2016) was the study by Saini & Singh (2020) which found the customer's attitude was a significant predictor of repurchase behaviour, hence asserting attitudinal loyalty predicts behavioural loyalty. This research study therefore re-examined the relationship between the categories of customer loyalty (attitudinal and behavioural) in the context of mobile telecommunications, thus providing further insights for articulation of the relationship.

2.6 Personalisation

A study on personalisation in the context of email marketing by Sahni, Wheeler and Pradeep (2018) defined personalisation as the phenomenon of adding customer-specific information as part of the email ad content. Their study concluded personalisation may increase customer retention of the advertised information and may have long-term effects of advertising. Whilst Song, Lim and Oh (2021) somewhat aligned with that view, they defined personalisation as a process of tailoring the online purchasing experience to a customer's personal information about their previous purchase-related activities. An interesting consideration they concluded through an experiment was though personalisation may entice customers to engage with an e-commerce platform, it raises alarms for privacy conscious customers and those not willing to disclose personal information. Their study was focused more on the behavioural intentions of customers to use the e-commerce platforms resulting from personalisation. As highlighted in the preceding subsection, the research study conducted in this paper focused its attention on the personalisation influence on behavioural and attitudinal loyalty of customers. The moderation of privacy concerns on the personalisation-loyalty relationship was also examined thus contributing to discussions around the personalisation construct.

The definition adopted for personalisation will be a more generic one as outlined by Aguirre, Mahr, Grewal, de Ruyter and Wetzels (2015) as a strategy that is customer focused and is intended to deliver the right products to the customer at the right time. This definition aligned with one presented by Zanker, Rookb and Jannach (2019) under the content dimension of personalisation research with an important bearing being content could be a product or service offering thus grounding the definition for personalisation this research study adopted. Zanker et al. (2019) presented other dimensions of personalisation being user interface and interaction process personalisation. As presented in their paper, the ultimate goal of personalisation is to reduced customer churn and increase customer lifetime value. The context for studying personalisation in this research study was the mobile telecommunications industry, thus, personalisation was considered in the context of mobile marketing through which telecommunications companies deliver personalised products on their mobile channels, in particular, unstructured supplementary service data (USSD) channels. As Tong, Luo and Xu (2020) noted, mobile marketing provides

opportunities for personalised marketing through use of mobile channels such as SMS, applications and push notifications. They proposed a framework for personalised mobile marketing founded on the premise that mobile gives marketers access to more data about customers such as demographic and purchase behaviours (Appendix 4, Figure 9). According to Tran, van Solt, and Zemanek (2020), personalisation increases the chances of customers finding products they may potentially want since it's based on the demographic data as well as historical preferences. However, they do attest that "too much" personalisation may lead to customer distrust and privacy concerns and this is a consistent view that was shared by Davenport et al. (2020) that personalisation may erode the necessary level of autonomy of choice that customers require and that it may lead to undesirable results. This research study therefore was well positioned both from a scholarly and business point of view to contribute answers to the questions raised around the construct of personalisation.

As noted by Vesanen (2007), the phenomenon of personalisation in marketing does date back to as far as the 1870s. However, as positioned in the previous chapter, there has been an increased adoption and revolutionising of personalisation in the digital economy as fuelled by big data. Zanker et al. (2019) attributed the increased adoption of personalisation to the end of the 1990s and beginning of the 2000s when "the concept of customer relationship management (CRM) gained momentum – leading to a new type of relationship-oriented marketing, in which highly personalised marketing offerings generate high levels of loyalty and engagement among clients" (Zanker et al., 2010, p. 162). The framework for personalisation proposed by Vesanen (2007) also positioned customer loyalty as one of the benefits of personalisation (Appendix 4, Figure 10). In the framework, the author argued personalisation has potential for benefiting the customer through better experience and service or products. The researcher also highlighted privacy risks that are inherent in the personalisation process. This research study therefore empirically investigated these propositions in the mobile telecommunications context. The benefits of personalisation were investigated through the viewpoint of the influence that personalisation has on customer loyalty, particularly behavioural and attitudinal loyalty. The privacy risk was also investigated from the customers' viewpoint of privacy concerns and the ultimate influence it had on the product personalisation-loyalty relationship. As argued by Walker and Moran (2019), the risks associated with

the use of customer information are not always recognised therefore, this research study's results aimed to help business practitioners understand the impact privacy concerns would have on achieving customer loyalty.

Aksoy, Kabadayi, Yilmaz and Alan (2021) positioned key questions for future research around the construct of personalisation, one of which is centred on understanding whether or not personalisation contributes to effective long-term relationships with customers. This research study responded to this invitation through the lens of product personalisation and customer loyalty relationship. Though Davenport et al. (2020) had raised questions around whether or not adoption of big data technologies which fuel personalisation would create dislikes from customers when autonomy of choice is lost due to personalisation, Aksoy (2021) somewhat argued there are benefits associated with personalisation for companies that want to create value for customers in the digital age thus emphasising the indispensability of personalisation in mobile marketing. This research study therefore contributed to this debate through an empirical assessment of the influence of product personalisation in the age of big data.

Personalisation is being delivered by big retailers such as Amazon through the use of recommender systems which as outlined by Marchand and Marxb (2020) are positioned to increase customer loyalty. Recommender systems are broadly designed to deliver automated decision aid to customers in their purchase journey by analysing previous trends and behaviours related to the customers, thus ultimately reducing the search costs (Marchand & Marxb, 2020). In the health setting, Kopalle and Lehmann (2021) argued though personalisation may be used to deliver marketing tactics to get customers to live a healthy life, it is still unclear on how the thresholds for personal health recommendation are being determined. Their view was rather more data about customer behaviour does not necessarily mean that behaviour ought to be changed. This research study did not focus on the mechanics used to deliver personalisation save the big data technological context prevailing in the organisations implementing these.

2.6.1 The direct relationship between personalisation and customer loyalty (attitudinal and behavioural)

As grounded in the reactance theory, White et al. (2008) noted since personalisation usually aims to deliver products through direct channels at prices usually lower than above the line (general channel) prices, businesses normally have to incorporate personal data about customers. Though their study was in the context of email personalisation, the generic view adopted for this research study was personalisation may lead to different reactions from that which was intended by marketing practitioners. As presented in the literature analysis by Martin and Murphy (2017), personalisation may in certain instances, deliver marketing intended reactions, whilst in certain cases it may not and this was argued in the context of consumer privacy concerns. A need was therefore clear for the researcher to empirically unlock findings on how personalisation would influence these customer behaviours through the study of attitudinal and behavioural loyalty constructs and how privacy concerns moderate the underlying relationships between personalisation and customer loyalty.

An early study by Ball et al. (2006) confirmed a relationship between personalisation and loyalty in the banking sector. However, their study focused on loyalty as a whole and a counter-argument was presented by Cossío-Silva et al. (2016) that customer loyalty should be looked at from a behavioural and attitudinal point of view as that bears more insightful considerations for organisations. Also, as presented in the limitations in the same study by Ball et al. (2006), banking markets are different from other markets in terms of differentiation of products possible for various reasons and as such, different results or strengths of the relationships thereof, could be obtained in other markets. Another study that confirmed the influence of personalisation on loyalty was done by Shanahan, Tran, & Taylor (2019) in the context of social media marketing where they found perceived personalisation significantly influences brand attachment which in turn influences loyalty to the brand. A hypothesis was thus deduced from these findings and this research study tested for the relationship between personalisation and customer loyalty from both an attitudinal and behavioural point of view. Table 1 below summarizes the key relationships the study explored relating to personalisation and customer loyalty.

Table 1: Summary of key personalisation-customer loyalty relationships

Relationship	Source	Key findings
Personalization-behavioral loyalty relationship Personalization-attitudinal loyalty relationship	(Ball, Coelho, & Vilares, 2006; Shanahan, Tran, & Taylor, 2019)	Personalisation positively influences brand attachment and customer loyalty

2.6.2 Moderating effect of personalisation on attitudinal-behavioural loyalty relationship

Earlier a relationship between attitudinal loyalty and behavioural loyalty was presented (Section 2.5.1) and the preceding Section 2.6.1 presented the relationship between personalisation and customer loyalty. Thus, another relationship worth testing was deduced, that being the moderating effect that personalisation has on the relationship between attitudinal loyalty and behavioural loyalty in the mobile telecommunications context. This added to the finding by Cossío-Silva et al. (2016) and Saini & Singh (2020) on the existence of a relationship between attitudinal loyalty and behavioural loyalty by examining the moderating effect of personalisation on the relationship.

This research study was focused on the telecommunications market which brought about the possibility of high differentiation due to the nature of the products i.e., more granularity was possible from a data and voice minutes allocation as well as validities attached to the products and the different behaviours exhibited by customers in usage which the telecommunications organisations were seemingly mining to design personalised products as already outlined in the introduction chapter.

2.7 Privacy concerns

Data privacy in marketing is rooted in the growing access to customer personal information that is used by businesses to craft personalised products for marketing purposes (Martin & Murphy, 2017). Malhotra, Kim and Agarwal (2004) however noted customers' lack of confidence in information privacy was slowing down business growth, particularly e-commerce as contextualised in their study. They further noted even though personal information about customers can help deliver personalised products, it may lead to threats such as privacy invasion if not well managed. Reactance theory captured this argument by positioning that too much personalisation may lead to customers lack of interest in the personalised products, particularly where privacy concerns are heightened (Clee & Wicklund, 1980; Chen, Jian, & Hongyan, 2021; Martin & Murphy, 2017). As Foxman and Kilcoyne (1993) noted, customers value their privacy and any marketing practices they perceive as intrusive create discomfort for them. Importantly for business, Foxman and Kilcoyne (1993) further noted the relationship between customers and businesses will degrade if customers feel the use of technology for marketing purposes by businesses degrades their privacy. This discussion brought upon an important input for the need to unpack the influence that privacy concerns have on business success. Thus, this research study was well placed to provide empirical evidence to contribute to both theoretical and business understanding around the construct of privacy concerns.

As Flavian and Guinalıu (2006) highlighted, the rise in computational and processing power brought about by new technologies have escalated the importance of privacy, which Martin and Murphy (2017) positioned as one of the issues associated with access to customers' personal information by organisations and that it has led to more research in academia. There was more reliance on data by marketing professionals for decision making however, customers' concerns about the nature of the data collected may impact the strategic intent that marketers have (Norberg & Horne, 2014). Norberg and Horne (2014) noted when concerns around data and marketing practices are heightened, customers may resort to omitting and falsifying data they provide to businesses in an attempt to retain some level of control. These practices would pose serious challenges for data-led marketing practices. Thus, it was really crucial for businesses to understand the influence that privacy concerns

have on customer behaviour and this research study unlocked that understanding in the context of customer loyalty. Privacy concerns are on the rise with questions asked around how consumers would react given that their personal information is widely available to marketers (Martin & Murphy, 2017).

Whilst there are many definitions for privacy given the extensive studies on the subject (Martin & Murphy, 2017), this research study adopted the grounding by Malhotra, Kim and Agarwal (2004) that privacy concern is subjective based on the individual's past experiences and externalities (such as culture and industry). For a precise definition of privacy concerns, Chen, Siu and Liu's (2021) definition was adopted which referred to privacy concerns as customers perception on whether the company they interact with protects their personal and private information or not. They argued a lot of the research has focused on the advantages of personalisation and little on the disadvantages.

There was an argument that whilst the big data revolution may have transformed customer shopping experience and engagement, there was a need to unpack the economic viability of such adoptions and unpack real-world questions that are relevant to business (Dekimpe, 2020). This study supported the call for answering questions relevant to business through assessment of the moderating effect of privacy concerns on the relationship between personalisation and customer loyalty.

2.7.1 The direct relationship between privacy concerns and customer loyalty

One of the factors that affect privacy is personalisation, which as Martin and Murphy (2017) argued, creates a trade-off on consumer behaviour which has been studied in privacy literature. This was consistent with the view by Tran et al. (2020) that personalisation raises privacy risks, that is, if customers believe their privacy is violated, they may be sceptical about purchase decisions and as such, may avoid taking-up personalised products. Aguirre et al. (2015) presented the privacy-personalisation paradox which outlined that personalisation worked in certain instances and did not work in others, particularly where customers felt that their personal data was being used without their consent. Though their study was done in an online retailing context tracking click-through rates on advertising, it provided a consideration upon which this research study was grounded as per the main

research question: What is the influence of personalisation on loyalty? It was evident business practitioners needed to approach personalisation with caution and this research study contributed to their understanding of how privacy concerns by customers influence loyalty. This research study further responded to a call for more research and empirical studies that will provide a better understanding of personalisation and the influence on customer behaviour which was made by prior researchers (Aguirre, Mahr, Grewal, de Ruyter, & Wetzels, 2015; Davenport, Guha, Dhruv, & Bressgott, 2020).

An argument by Martin and Murphy (2017) grounded in reactance theory stipulated privacy concerns increase reactance from customers, implying the more customers are concerned about privacy, the more the likely unintended behaviour. Thus, in the context of personalisation, which by design restricts choice, the more customers are concerned about privacy, the likely the lower preference for the personalised products. Martin and Murphy (2017) further noted the growing privacy concerns amongst different age groups thus highlighting the importance of understanding the construct. This research study therefore deduced relationships (see Table 2) between privacy concerns and attitudinal loyalty as well as between privacy concerns and behavioural loyalty which were then tested from the collected data.

Table 2: Summary of key privacy concerns-customer loyalty relationships

Relationship	**Source**	**Key findings**
Privacy concerns-behavioral loyalty relationship Privacy concerns-attitudinal loyalty relationship	(Martin & Murphy, 2017)	Privacy concerns lead to reactance from customers leading to behavior that is unfavorable for business

2.7.2 Moderating effect of privacy concerns on the personalisation-customer loyalty relationship

Chen, Siu and Liu's (2021) studied the moderating effect of privacy concerns on the relationship between web personalisation and loyalty. Their results showed customers with high privacy concerns have low trust which ultimately impacts purchase intention. This research study further added to this relationship articulation by examining the moderating effect of privacy concerns on the product personalisation and loyalty relationship (attitudinal and behavioural) in the mobile telecommunications industry. Chen, Siu and Liu's (2021) further called for more studies to explain the moderating effect of privacy concerns on brand-customer relationships given their study was conducted on Chinese consumers and they believe different cultural backgrounds could have different levels of privacy concerns orientation. This research study therefore contributed to these discussions initiated by other researchers around the construct of privacy concerns. The following table summarises the key relationships the study intended to explain as well as key literature upon which the relationships have been deduced.

Table 3: Summary of key privacy concerns-customer loyalty relationships

Relationship	Source	Key findings
Privacy concerns moderation effect on personalization-behavioral loyalty relationship Privacy concerns moderation effect on personalization-attitudinal loyalty relationship	(Xinyu, Jian, & Hongyan, 2021)	Privacy concerns negatively moderate the relationship between personalization and customer loyalty.

2.8 Big data

Big data was discussed in this study for contextual reasons owing to the fact that personalisation has been around for many years (Vesanen, 2007) however, according to Kshetri (2014), the internet growth has revolutionized big data providing customers and businesses with more information than before to unlock efficiencies. Chintagunta, Hanssens and Hauser (2016) ascertained those businesses are increasingly harnessing the data for their marketing and sales efforts. This view was supported by Bahrami, Kanaani, Turkina, Moin, and Shahbaz (2021) who noted the increase in commercial application of big data across industries including start-ups. These commercial applications of big data are unlocked through big data analytics for decision-making as per the view of De Luca1, Herhausen, Troilo, and Rossi (2021) who defined big data as “large-volume, high-velocity, and heterogeneous data that emerge from the increasing digitization of transactions, interactions, communications, and everyday experiences” (p. 791). The data was increasingly being generated in an unstructured manner through devices and it was becoming available at a more granular level thus, more research was emerging to be able to make sense of these complex data (Agarwal & Dhar, 2014; Kopalle & Lehmann, 2021). The enabler of the communication and network of these devices generating data was connectivity which the telecommunications industry was at the forefront of providing. Thus, it was conclusive that telecommunications companies are at the forefront of this big data revolution. This research study however, is not concerned with the extent to which telecommunications companies enable big data revolution but the context through which big data enables product personalisation.

As George, Haas and Pentland (2014) put it, "Big data is everywhere" (p. 321). They positioned big data as a tool that not only provides capabilities for analysing patterns in the data but also predict consumer choice through the use of techniques such as machine learning. They further highlighted some of the sources of big data being mobile transactions and purchase transactions. These considerations brought importance to the context within which big data was defined for this study. As highlighted in the introduction, the mobile telecommunications organisations in South Africa are generally using purchase and usage behaviours in their process of personalisation and that grounds context for big data presence in those organisations. This research study grounded the definition of big data on the detailed

nature of the data which shifts towards an individual (George et al. (2014). Other definitions of big data do exist in the literature, such as one by Günther, Mehrizi, Huysman, & Feldberg (2017) who grounded their definition on Laney's (2001) definition which identifies the volume, variety and velocity of the data as the key defining elements of big data, with an argument that advanced analytics technologies would be needed to process the data.

Big data provides marketing professionals more capabilities to optimize their marketing capabilities though emphasis was placed on ensuring that correct use-cases and applications are put in place to be able to generate the necessary returns (Fulgoni, 2013). The researchers noted big data does not always lead to desired results and they argued this from a point of view where targeted marketing on the basis of price discounts may eventually lead to a negative impact on loyalty when the companies have to change the strategy whilst customers are already accustomed to buying on discounts. This was consistent with a view shared by Umashankar et al. (2017) that repeat purchases (behavioural loyalty) does not necessarily translate to price inelasticity. Thus, in line with this research study, personalisation as a capability available to marketers in the age of big data needed to be explored in terms of how it influences customer loyalty.

Kshetri (2014) attributed big data to the advancements in telecommunications and other technologies as well as the associated reduction in costs. The researcher emphasized the importance of not only considering the benefits associated with big data but the social and economic costs as well. The benefits Kshetri (2014) discussed include ability to personalise services, improved access to social services and strengthening of security. The researcher further highlighted the costs associated with big data such as cases where through the use big data technologies, sensitive predictions can be made about individuals including sexual and financial matters. These maybe be too invasive to individuals' privacies and challenge ethics in societies. In line with this, a similar argument was presented by Kopalle and Lehmann (2021) that businesses should use data about their customers carefully in line with privacy concerns. The next section examines privacy concerns and in the context of this research study, to understand how these moderate the relationship between personalisation in the context of big data and customer loyalty from an attitudinal and behavioural point of view.

2.9 Conclusion

2.9.1 Direct relationship between attitudinal loyalty and behavioural loyalty

Key literature findings highlighted the importance of achieving both attitudinal and behavioral loyalty for businesses with an emphasis being that attitudinal loyalty is an important moderating factor in ensuring that behaviorally loyal customers are less price sensitive (a condition necessary for growing value out of repeat purchasers) (Umashankar, Bhagwat, & Kumar, 2017). Further to that, it was noted there was a positive relationship between attitudinal loyalty and behavioral loyalty as per the study by Cossío-Silva et al. (2016) in the personal care industry. This research study aimed to provide further understanding on the relationship between attitudinal loyalty and behavioral loyalty in the mobile telecommunications context, hence the formulation of the following research question:

Research Question 1 (RQ1): What is the relationship between attitudinal loyalty and behavioural loyalty?

2.9.2 Relationship between personalisation and customer loyalty (attitudinal and behavioural) and how that relationship is moderated by privacy concerns

Personalisation was grounded in relationship marketing theory as a tool for achieving customer loyalty and marketing professionals are delivering personalisation through use of customers' data which gives rise to privacy concerns (Bojei, Julian, Wel, & Ahmed, 2013; Sharifi & Esfidani, 2014; Norberg & Horne, 2014). A relationship between personalisation and customer loyalty was also found to exist as per study by Ball et al. (2006) in the banking sector. The study made further calls for more empirical studies in other industries. This research study further aimed to gain an understanding of the relationship between personalisation and customer loyalty, hence the following research question:

Research Question 2a (RQ2a): **What is the relationship between personalisation and customer loyalty (attitudinal and behavioural)?**

Chen, Siu and Liu's (2021) further articulated that heightened privacy concerns have a negative influence on the relationship between personalisation and loyalty and they called for further studies to provide more generalisations. This research study investigated the relationship between privacy concerns and customer loyalty further and hence the formulation of the following research question:

Research Question 2b (RQ2b): **What is the moderation effect of privacy concerns on the personalisation-loyalty relationship?**

2.9.3 The moderation effect of personalisation on the attitudinal-behavioural loyalty relationship

Following on existing relationships proven to exist between attitudinal loyalty and behavioural loyalty as cited in Section 2.9.1 as well as between personalisation and customer loyalty as cited in Section 2.9.2, the research study deduced a further research question:

Research Question 3 (RQ3): **What is the moderation effect of personalisation on the attitudinal-behavioural loyalty relationship?**

2.9.4 The direct relationship between privacy concerns and customer loyalty (attitudinal and behavioural)

The literature reviewed revealed privacy concerns may lead to lower customer loyalty and this was grounded in the reactance theory as well the privacy-personalisation paradox (Aguirre, Mahr, Grewal, de Ruyter, & Wetzels, 2015; Martin & Murphy, 2017). Therefore, the following research question was deduced:

Research Question 4 (RQ4) – What is the relationship between privacy concerns and customer loyalty (attitudinal and behavioural)?

3 CHAPTER 3: RESEARCH HYPOTHESES

Chapter 3 covers the research questions and hypotheses against the research purpose stated in Chapter 1 and the background outlined in the literature review (Chapter 2). The chapter concludes with a proposed conceptual model for the research study. The next chapter will deal with the details of the methodology towards testing the hypotheses and answering the questions stipulated in this chapter.

The research study did not control for plan type, where plan type can either be prepaid or contract. A prepaid plan entails paying upfront for the service without any contractual agreement whilst a contract plan entails an agreement between the user and the telecommunications company for a defined term, with the customer billed regularly. Thus, the research questions and hypotheses stipulated in this chapter ignore the plan type variable due to the limited data across the individual plan types for conducting hypotheses tests.

3.1 Research questions and hypotheses development

As outlined in the literature review (Section 2.5.1), Cossío-Silva et al. (2016) confirmed a positive relationship to exist between attitudinal loyalty and behavioural loyalty for personal care customers. This relationship is hypothesised in this study to further confirm the findings in the telecommunications context:

RQ1 – What is the relationship between attitudinal loyalty and behavioural loyalty?

- H1 – There is a direct, positive relationship between attitudinal loyalty and behavioural loyalty

Literature insights already presented also revealed empirical findings on the relationship between personalisation and customer loyalty in the banking sector (Section 2.6.1). These findings did not differentiate between behavioural and attitudinal loyalty. A call for further research was made by the researchers for research examining this relationship in other contexts. Hypotheses are therefore formulated in this study to

examine the relationship in the telecommunications context as well as differentiating between behavioural loyalty and attitudinal loyalty.

RQ2a: What is the relationship between personalisation and customer loyalty (attitudinal and behavioural)?

- H2a1 – There is a direct, positive relationship between personalisation and attitudinal customer loyalty
- H2a2 – There is a direct, positive relationship between personalisation and behavioural customer loyalty

Reactance theory and an empirical study by Chen, Siu and Liu's (2021) enabled the articulation of the negative moderation of privacy concerns on the relationship between personalisation and customer loyalty. Thus, the following research question and hypotheses as per literature presented under Section 2.7.2:

RQ2b: **What is the moderation effect of privacy concerns on the personalisation-loyalty (attitudinal and behavioural) relationship?**

- H2b1 – Privacy concern have a significant moderation effect on the relationship between personalisation and attitudinal loyalty
- H2b2 – Privacy concerns have a significant moderation effect on the relationship between personalisation and behavioural loyalty

RQ3: What is the moderation effect of personalisation on the attitudinal-behavioural loyalty relationship?

Given the articulation of H1 grounded in literature around the relationship between attitudinal loyalty and behavioural loyalty and the articulations in H2a1 and H2a2, further hypothesis was deduced in this study:

- H3 – Personalisation has a significant moderation effect on the relationship between customers level of behavioural and attitudinal loyalty

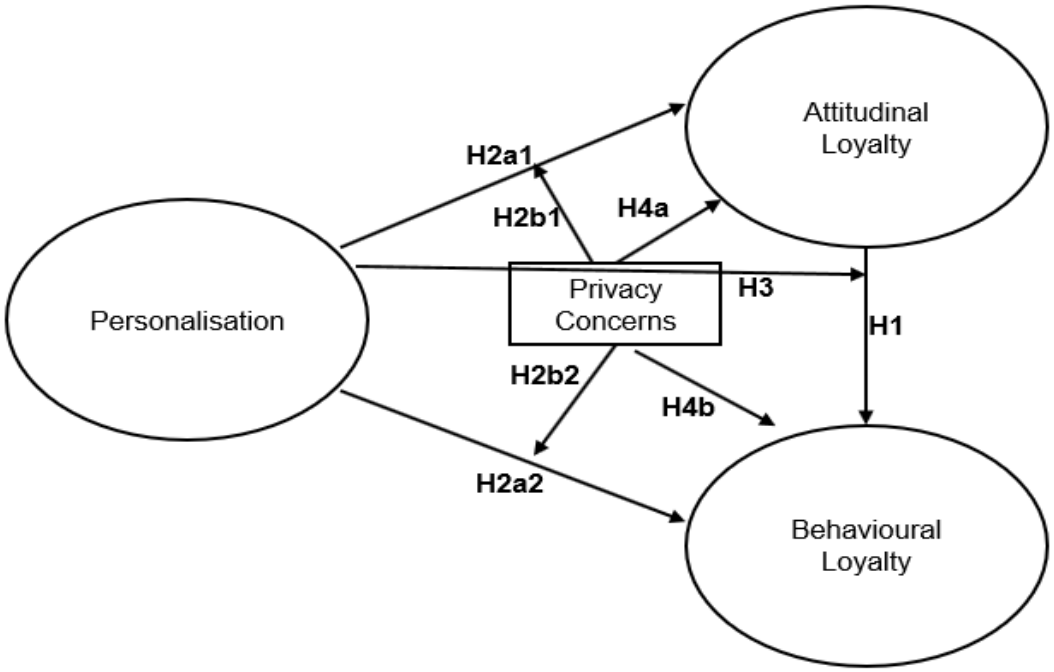
Under Section 2.7.1, reactance theory argued privacy concerns negatively affect the marketing results thus the following research question and hypotheses were deduced:

RQ4 – What is the relationship between privacy concerns and customer loyalty (attitudinal and behavioural)?

- H4a – There is a direct negative relationship between the level of privacy concerns and level of attitudinal customer loyalty
- H4b – There is a direct negative relationship between the level of privacy concerns and level of behavioural customer loyalty

3.2 Conceptual model

Figure 3: Conceptual model proposed in the study



Note. The path reflects the direction of the proposed relationships between the constructs of the study. Source: Source: Researcher's own.

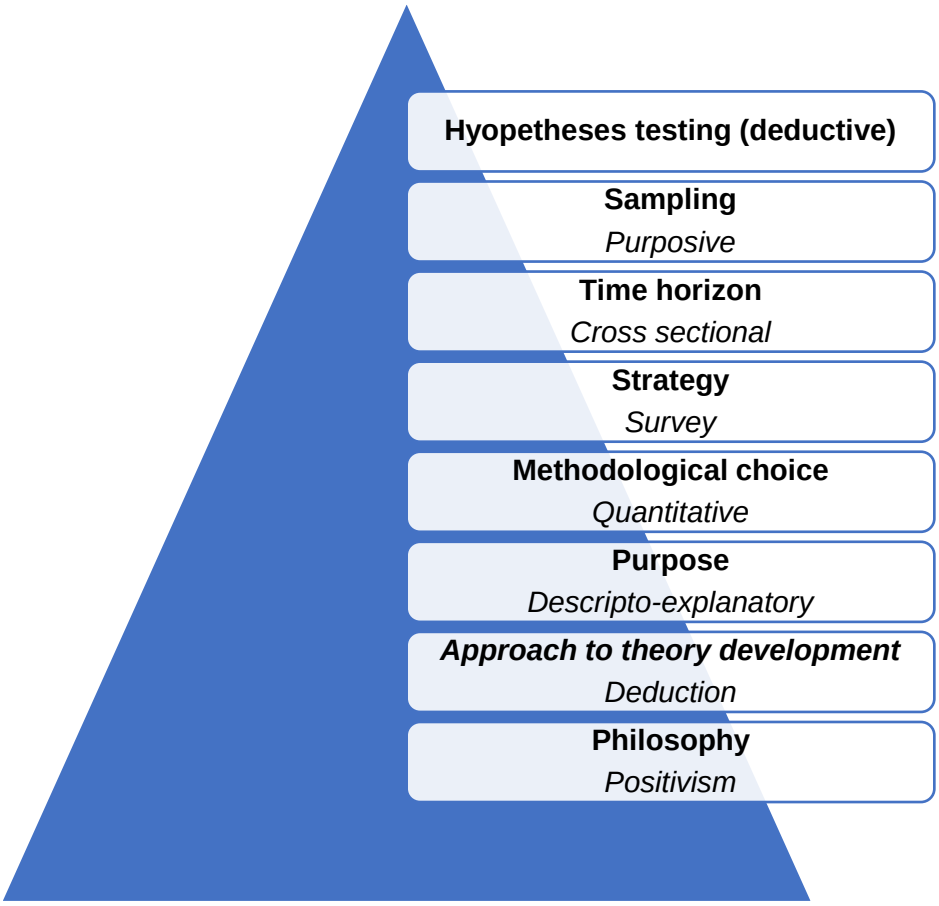
4 CHAPTER 4: RESEARCH METHODOLOGY

4.1 Introduction

This chapter outlines the methodology and design used to answer the research questions presented in the previous section. The research study was quantitative in nature and adopted a positivist philosophy to articulate relationships between personalisation and customer loyalty (both behavioural and attitudinal) under the moderating effect of privacy concerns. Data was collected through an online survey and analysed quantitatively to test the research hypotheses already positioned in the preceding section. Data quality issues were taken into consideration and managed. The limitations of the study are discussed at the end of this chapter.

4.2 Overview of Research Methodology

Figure 4: Research methodology overview



4.3 Research Design and Methodological Choices

The research questions raised in this study emphasized a need to evaluate relationships between personalisation and customer loyalty under the moderating effect of privacy concerns on their relationship. These relationships were grounded in the theoretical frameworks adopted for the study. Thus, a **positivist approach** was found to be ideal given that the researcher grounded the outcome on science and the intended outcome is unambiguous. As Bell, Bryman and Harley (2018) define it, positivism advocates for studying social reality through the application of methods of science. They also emphasize one of the main principles of positivism is that theory is used to generate hypotheses that will be tested to articulate explanations. This further supports the researcher's choice of the philosophy for this study, through which the researcher gathered empirical evidence to articulate relationships on customer loyalty.

The articulation of the relationships between personalisation and customer loyalty under the moderating effect of privacy concerns on their relationship was achieved through a **descripto-explanatory** research design. As outlined by Saunders and Lewis (2018), an explanatory study "focuses on studying a situation or a problem in order to explain relationships between variables" (p.118) and they highlight the relationships that an explanatory study attempts to discover are causal ones. This research study did not intend to discover cause-effect relationships but to describe and explain the influence of personalisation on customer loyalty. A descriptive study on the one hand focuses on describing events or persons. A combination of both descriptive and explanatory was therefore chosen, hence descripto-explanatory purpose of the research study.

A descriptive survey of mobile telecommunications customers who buy personalised products from Vodacom, MTN and Telkom was undertaken. The three mobile telecommunications companies account for more than 80% market share in South Africa (BusinessTech, 2019) and thus presented a good opportunity for surveying given that they have product personalisation offerings. According to Saunders and Lewis (2018), a **survey strategy** is useful for descriptive research, particularly for asking the "Who", "What" type of questions. As already positioned in the preceding section, this research study combined descriptive and explanatory purposes, hence

making the survey a strategy that was chosen for the study. Similar studies outlined in the literature by Coelho et al. (2006) and Chen et al. (2021) examining the relationship between personalisation and loyalty in other sectors also adopted a survey strategy which provided an alignment on methodological choices with this research study. On the same note, this research study, through the research questions, aimed to articulate relationships from empirical evidence. It was for this reason that a survey was also deemed appropriate to enable collecting data from many telecommunications customers.

A **deductive logic of inquiry** was chosen for this research study. Peer-reviewed academic journals were used (as outlined in the literature review section) to position the theory upon which the research study was grounded. In particular, the relationship marketing and reactance theories were used to ground the study. A deductive logic of inquiry is one where existing knowledge about a domain and its theoretical considerations are used to deduce hypotheses that must be scrutinized empirically (Bell, Bryman, & Harley, 2018). This study started with the existing theory on personalisation and customer loyalty, then deduced hypotheses to gather data to articulate the relationships in a clear manner and thus adding to existing research. The deductive logic of inquiry is usually associated with a positivist philosophy (Bell, Bryman, & Harley, 2018) and as already highlighted, a positivist philosophy was adopted for this research study. Chen et al. (2021) also used deduction, grounding their study on relationship between personalisation and loyalty on exchange and reactance theories.

A mono quantitative method was chosen for this study as was the case with Sahni et al. (2018) and Ball et al. (2006) research studies examining personalisation influence on loyalty, as covered in the literature review section. A quantitative method was found to be appropriate as it allowed for the testing of hypotheses formulated in this study from the empirical data collected. Due to the limitations imposed by the time required to complete this study as a requirement for the Master of Business Administration (MBA) course, a **cross-sectional time horizon** was imposed for this study by sending surveys once-off. Cross-sectional research is described by Saunders and Lewis (2018) as one that takes a snapshot view and studies the phenomena of interest at a particular point in time. Similarly, another study investigating the moderating effect of privacy concerns relationship between

personalisation and customer loyalty by Chen, Jian, & Hongyan (2021) as positioned in Chapter 2, was cross-sectional and it was acknowledged by the researchers that a cross-sectional study would not allow for deducing causalities between variables. This study's hypotheses were positioned to describe the existence or not of relationships between constructs as well as assessing the impact of moderating variables on those relationships. The research study did not intend to look at changes that occur over time.

4.4 Population

As Saunders & Lewis (2018) put it, a population is a complete set of members of a group. This study aimed to reach mobile telecommunications users who engage with personalised products from their network providers (Vodacom, MTN and Telkom) and are above 18. The telecommunications industry choice was motivated by the high adoption of personalisation marketing strategies amongst the top three mobile telecommunications companies in South Africa as already outlined in Chapter 1. Some articulation of the relationships between personalisation and loyalty has already been made in the banking sector as well as web personalisation contexts as outlined in the literature review however, this study adds to the articulations in the context of mobile telecommunications. The researcher's own experience of working in the telecommunications industry at the time of the research study also motivated the choice of telecommunications industry.

4.5 Sampling Method and Size

Time limitations and cost were taken into consideration in determining the sampling method to be adopted. The telecommunications industry in South Africa has millions of subscribers above 18 which made it challenging to obtain a sampling frame for the target population. Sampling frame is described by Saunders & Lewis (2018) as a complete list of the population members used for sampling. Therefore, for the reasons stated, the non-probability sampling method was adopted.

The research questions are founded on personalisation and customer loyalty constructs under the moderation of privacy concerns. Therefore, purposive sampling, which Taherdoost (2016) defines as a strategy in which the researcher includes

participants based on the belief, they warrant inclusion to obtain information that cannot be obtained from other choices was used. This strategy was adopted to include retail customers who use personalised products from telecommunications companies delivered through Vodacom's Just4U, MTN's MyMtn and Telkom's Mo'Nice platforms. These are the platforms the mentioned mobile telecommunications companies use to deliver product personalisation to their retail customers thus providing motivation for the sampling choices made (Vodacom, 2019; MTN, n.d.; Telkom, n.d.). By distributing the survey online, the researcher was able to reach out to his network through electronic media platforms such as WhatsApp, LinkedIn, Instagram and Facebook. The research survey included upfront screening questions for appropriate identification of respondents to ensure valid participation as per target population. The purposive nature of the sampling is also attributable to the researcher's background and knowledge of personalisation products in the telecommunications industry due to the researcher working in the same industry and the researcher's network in the industry given that South Africa has an oligopolistic telecommunications industry.

According to Taherdoost (2016), the absolute size of the sample is important relative to the research objectives as well as the statistical approach to be adopted in the data analysis. He emphasizes that size does matter in this context, to enable better generalization. However, he also does highlight there is a point of diminishing returns beyond which, additional data will not yield different results. A study by Chen et al. (2021) which was highlighted in Section 2.7.1 used a sample size of 270 participants to assess personalisation influence on loyalty under moderation of privacy concerns in the web context. This research study used this size as a benchmark but considered most importantly, the guidelines on sample size provided for Structural Equation Modelling (SEM) in literature at the time this research study was initiated. Hair, Black, Babin, and Anderson (2014) note that SEM is rather sensitive to sample size compared to other multivariate statistical analysis techniques. They provide a guideline for appropriate sample size for SEM which depends on a number of considerations including the normality adherence of the underlying data, estimation technique used in the model, model complexity and missing data. Their guideline ranges from 100 to 500 where the latter is for models with a lot of constructs and the former is for models with fewer than five constructs. Thus, with these considerations, the research had targeted a sample size of 200 valid responses and this was

achieved as the study managed to reach 237 valid responses and this is detailed in Chapter 5. Although SEM was not used eventually due to failure to confirm the measurement model as described in Section 4.12.1, the target of 200 was still found to have been appropriate for the subsequent methods that were adopted.

4.6 Unit of Analysis

The research study aimed to articulate relationships positioned in the hypotheses related to retail telecommunications customers and therefore, a unit of analysis was a retail telecommunications customer who used the personalisation products (Just4U, MyMtn and MoNice) and was above the age of eighteen. The research did not intend to compare different groups with regards to loyalty, but direct relationships involving personalisation and loyalty hence the choice of user of personalisation product as a unit of analysis. The choice of retail customers was motivated by the fact the personalisation products the telecommunications companies in South Africa were largely designed for the retail market. A unit of analysis is described by Hair, Page, & Brunsveld (2019) as encompassing the who or what the study intends to describe. The data in this research study was collected at an individual customer level in search of answers for the research hypotheses.

4.7 Measurement Instrument

According to Saunders & Lewis (2018), a questionnaire or structured interview instrument is typically used with a survey strategy. They define it as a tool that allows the same questions to be asked to several respondents. This study is descripto-explanatory in approach and there was an intention to ask different respondents the same questions to assess their perception or attitude on their loyalty towards telecommunications companies. Therefore, rating scale questions were used for the survey and the choice of the instrument was a five-point Likert-type scale questionnaire. This choice aligns to studies outlined in the literature by Coelho et al. (2006) and Chen et al. (2021) examining the relationship between personalisation and loyalty where Likert-scales were adopted to measure the constructs. According to Corbetta (2003), Likert-scale is a technique used most frequently in attitude assessment. Likert-scale data collected was treated as interval in nature as per the

recommendation by Wegner (2016). Measurement scales for the constructs were adopted from previous research and adjusted for this study's perspective.
Behavioural and Attitudinal loyalty measures were adopted from Shammout (2018) whilst measures related to personalisation were adopted from Ball et al. (2006). The privacy concern measures will be adopted from Malhotra, Kim and Agarwal (2004). (Table 4 presents the constructs measuring.)

The survey comprised a few demographic questions followed by 21 Likert-scale questions covering the constructs of the study with five questions each for product personalisation, attitudinal loyalty and behavioural loyalty constructs. The privacy concerns constructs were measured on six questions. The questions were on a five-point Likert-scale ranging from "strongly disagree" to "strongly agree", similar to a study by Chen et al. (2021) on assessing relationship between web personalisation and loyalty. See Appendix 3 for the full survey.

Table 4: Construct measurement

Construct	**Item**	**Source**
Product Personalisation (PP)	My network provider's product offers me products that satisfy my specific need (PP1)	(Ball, Coelho, & Vilares, 2006)
	My network provider offers me products and services that I could not find with other network providers (PP2)	
	If I changed a network provider, I would not get products as personalised as I have now (PP3)	
	My network provider can provide me with personalised products/services tailored to my activity context (PP4)	
	My network provider can provide me with the kind of products/services that I might like (PP5)	

Attitudinal Loyalty (AL)	I recommend my network service provider to those who seek my advice on such topics (AL1) I would encourage my friends and family to use my network service provider (AL2) I would say positive things about my network provider to other people (AL3) I intend to continue using my present network provider (AL4) I intend to do more business with my network provider (AL5)	(Shammout, 2018)
Behavioural Loyalty (BL)	I use my network provider on a regular basis (BL1) My network provider incentivises me to stay (BL2) I have used this network provider for a number of years (BL3) I rarely consider switching for another network provider (BL4) As long as the present service continues, I doubt that I will change network provider (BL5)	(Shammout, 2018)
Privacy Concerns (PC)	I am concerned about the threats to my privacy (PC1) Compared to other issues, personal privacy is very important (PC2) All things considered; mobile network providers could cause serious privacy problems (PC3) Compared to others, I am more concerned about the way mobile network providers handle my personal information (PC4)	(Malhotra, Kim, & Agarwal, 2004)

	I believe other people are too much concerned with data privacy issues (PC5) To me, it is the most important thing to keep my privacy intact from mobile network providers (PC6)

The advantages of using a Likert-scale include the ability to gather data from a large number of participants quicker, across geographies and at a relatively lower cost (Zikmund, Babin, Carr, & Griffin, 2010). Zikmund, el al. (2010) however, further argue there could be limitations in a study where data are collected via a survey, in particular, a questionnaire given the researcher is the primary expert who determines what must be included in the questions and thus the ultimate results can be influenced by researcher's own bias which must be avoided to ensure objectivity.

This research study used previously tested instruments for the constructs with no added questions from researcher except re-wording to ensure context fit where needed. Additionally, by collecting demographics, the researcher was able to assess sampling bias as Zikmund et al. (2010) argue that sampling bias can be introduced if the research only covers certain demographics of the population.

Screening questions were used to assess if the respondents met the criteria of being 18 years and older, using one of the personalisation platforms (Just4U, MoNice and MyMtn). This helped determine if the respondents should be part of the survey or not i.e., if one of the two stated criteria were not met, then the respondent were sent to exit page of the survey and thanked for their participation. Respondents who passed the criteria moved on to the sections that followed which were made mandatory for the completion of the survey.

4.8 Pre-test

Given the survey was an online one, pre-testing was essential and this entailed sending out surveys to a small group to ensure that it works and participants will not have challenges answering it (Saunders & Lewis, 2018). A study by Cossío-Silva et al. (2016) which was covered in the literature review on the relationship between attitudinal loyalty and behavioural loyalty also did pre-testing prior to confirming the

final and definitive questionnaire to utilise in the study. This research study adopted the same approach by sending out online surveys to seven participants in the researcher's network who met the profile of users targeted for the study and the low number of participants chosen was due to limitations of time. This pre-test was done post the ethical clearance which is covered in Section 4.12.

The participants provided feedback via email which included consensus it did not take more than the time was stipulated for the survey in the consent. Grammatical errors were also flagged including spelling and spacing as well as sentence's structure. The grammatical errors were subsequently fixed as well as other sentence structure issues incorporated where it did not change the meaning of the item being measured since the items were based on previous literature per construct. There was input around adding a question on how often customers buy personalised products. The researcher reflected on this as other literature demonstrates the use of purchase frequency to measure behavioural loyalty (Labeaga, Lado, & Martos, 2007). However, the researcher believed the current items in the constructs are sufficient as they have also been adopted directly from previous studies where behavioural loyalty was measured on a Likert-scale. Post the fixes and updates, the final approval on ethics, the researcher then proceeded to data gathering.

4.9 Data Gathering Process

An online survey tool, SurveyMonkey, was used to collect the data. This provided an opportunity to even distribute the link via social media platforms for extended reach. Once a test survey as well changes outlined in Section 4.8 had been completed and ethics approval obtained, the survey instrument was distributed via the internet particularly through WhatsApp, Facebook, Instagram and Email. This was also due to the travel restrictions imposed by COVID-19 regulations at the time the study was conducted as well as the limited time of the study. Thus, social media enabled wider reach of participants within the researcher's network. The participants would access a link which took them to the landing page (see Appendix 3) outlining the consent to participate with an option to quit participation provided. The researcher further made an invitation to the participants reached to distribute the survey further to their networks and this contributed significantly to the volumes.

4.10 Analysis Approach

The starting point was to manage the raw data by ensuring any obvious flaws are dealt with (Bell, Bryman, & Harley, 2018). To do this, the raw data was cleaned and checked in Excel. According to Berchtold (2019), most quantitative studies suffer from missing data which he classifies as one of missing completely at random (MCAR), missing at random (MAR), and missing not at random (MNAR). The data collected did not have the missing data problem except for responses that were disqualified for not meeting minimum criterion for participation. The survey was designed in a way that made the questions compulsory for the participants once they had started the survey.

The questionnaires were also numbered to ensure referencing and exact questionnaire location. These first steps were designed to get the data ready for transfer into the IBM Statistical Package for Social Sciences (SPSS). The data collected was then encoded into numeric values to ensure statistical analysis can be performed. The coding was on the scale items using integers from 1 to 5, where 1 is "Strongly Disagree" and 5 is "Strongly Agree" with everything in between assigned to the remaining integers in their order for all items, except for PC5 which was negatively worded and thus reverse coded during the coding process. As noted by Malhotra (2010), Likert scale items coding needs to ensure consistency such that a high or low score consistently represents a favourable response. Therefore, care was taken to ensure that for PC5, 1 would represent "Strongly Agree" and 5 represent "Strongly Disagree" with everything in between consistently reverse coded.

Post data coding, the sample demographics were explored to identify if there could be any sample biases the researcher needed to be aware of. Descriptive statistics using mean and standard deviation were then determined. This was to assess:

- If there are any outliers in the observations so treatment can be put in place;
- What the central tendency and variability of the data is (Malhotra, 2010).

Reliability and validity on the measurement instruments were subsequently tested as outlined in Section 4.13.

Given the nature of the survey data which comprised multiple variables, there was a need to reduce the observed variables into smaller groups. Therefore, factor analysis was performed through statistical techniques. Confirmatory factor analysis (CFA) and exploratory factor analysis (EFA) were considered (see Section 4.12). CFA was considered first given the research study adopted scale items from previous studies and as such, the researcher chose to first confirm factorizability of the items into the research study constructs (Malhotra, 2010). Given lack of overall goodness of fit of the CFA mode, the research study then defaulted to EFA (see Section 4.12 for the details).

Post assessment of whether the scales captured the constructs in the research objectives through reliability (Section 4.13.1) and validity (Section 4.13.2) as well as factor analysis (Section 4.12), the scales where then summated per construct via the mean. To examine relationships, Pearson correlation was then used to measure the correlation between constructs. Hierarchical multiple regression (HMR) was utilised for determining the moderation effects on relationships. Section 4.14 presents the details on the hypotheses testing. A key determinant of the type of statistical tests to be used was the underlying assumptions of the test as well as the nature of the data. As Thode (2002) puts it, the absence or presence of normality in the underlying data can influence the inferential procedures used in the data analysis.

4.11 Statistical Assumptions

Multivariate inferential statistical procedures require a set of assumptions to be met and this research study makes those overarching assumptions relating to normality and linearity (Hair, Black, Babin, & Anderson, 2014). Other assumptions specific to particular statistical tests are discussed in the hypothesis's tests section 4.14. Hair et al. (2014) guide that no clear guideline exists for testing for multivariate normality and most research would test for univariate normality on the individual variable such that if its holds for all then departure from normality would be rare for the combination of variables. To test univariate normality of the variables, the research study adopted a guideline by Kline (2011) of examining the skewness and kurtosis with a guideline provided that the values must lie between -2 and 2. The skewness and kurtosis values provide a guideline as to whether the distribution is deviates from a normal distribution or not (Malhotra, 2010). Normality for the summated scales was further

determined post the factorisation process and this was done using more robust statistical testing through Shapiro- Wilk test which determines the statistical significance of deviation from a normal distribution (Hair et al.,2014; Thode,2002).

All statistical techniques for examining associations between variables, including multiple regression, make an assumption of linearity (Hair et al., 2014). Linearity was assessed via scatterplots in the correlation analysis of the variables as well as the residuals in the multiple regression analysis (Hair et al., 2014).

4.12 Factor Analysis

Given the number of items or variables being measured across the constructs, factor analysis was adopted to reduce the number of variables. Factor analysis is a technique that finds the interdependence and underlying structure amongst variables thus deducing a group of variables known as factors which represent the underlying data (Hair, Black, Babin, & Anderson, 2014). Hair et al. (2014) recommend ten times the number of variables to be analysed as the more acceptable minimum sample size for conducting factor analysis, a requirement the collected data for this study met given the 237 responses against the 21 scale items to be analysed through factor analysis. The approach was thus deemed appropriate. The proposed factor analysis methods by Hair et al. (2014) are confirmatory factory analysis and exploratory factor analysis.

4.12.1 Confirmatory Factor Analysis

CFA provides guidelines on how well the items measured in the data represent the constructs they belong to and it can further provide insights into the quality of the measures if combined with construct validity measures as well as being an important part of the initial steps in SEM that designs the measurement model reflecting relationships between items and their constructs (Hair et al., 2014). Construct validity measures are covered in subsequent sections. The researcher used the AMOS analysis tool to perform CFA by first specifying the measurement model based on the constructs of the research study and the items corresponding to them as these were taken from previous literature. An important consideration the researcher took into account was fixing the constructs to variance of one in AMOS as per guidance

of Hair et al. (2014) cautioning that failure to do this would lead to inability of the model to estimate the parameters. Hair et al (2014) further provide guidelines in terms of the assessment of the model fit which provides guidance on how well the observed variability is captured by the modelled or predicted variability. Thus, the researcher first tested the measurement model via CFA (see Section 5.7 for results) and to assess CFA model performance, the researcher adopted the following guidelines from Hair et al. (2014): Chi-squared goodness of fit's p-value which should be greater than 0.05 for good fit; root mean square error of approximation (RMSEA) should be less than 0.08 for good fit; comparative fit index (CFI) which should be greater than 0.90 for good model fit and standardised root mean residual (SRMR) where a value less than 0.08 indicates good fit as Hair et al (2014) caution that value more than one would be a bad fit. An assessment of the measurement model validity via Chi-squared goodness of fit, RMSEA, CFI and SRMR allowed the researcher to determine whether to proceed to testing the structural model or not (Hair et al, 2014).

Construct validity was examined and consequently the research study dropped items that were not meeting the construct validity criteria as detailed in Section 4.13.2. The guideline for dropping items was based on Hair et al. (2014) that deletion of items should not result in loss of more than 10% of the data. The items deleted were thus excluded from further analysis post CFA.

4.12.2 Exploratory Factor Analysis

EFA was performed as a default factor analysis approach following the lack of goodness of fit of the measurement model as per CFA results. This is in line with the recommendation by Malhotra (2010) that when lack of fit in CFA model occurs, ideally research should default to an exploratory approach. EFA assists in identifying the underlying latent variables that capture the variability or correlations among a number of variables (Malhotra, 2010).

The criterion used for the factor extraction was a latent root criterion, which Hair et al. (2014) describe as one that considers factors with eigenvalues greater than 1 as being significant. Thus, the extractions were done in SPSS through principal component analysis (PCA) specifying the eigenvalues greater than 1 for factors as the extraction basis and number of iterations for convergence set to 25. Given the

intent of the factor analysis being variable reduction for further analysis, orthogonal rotation was applied on the factors using VARIMAX criterion to determine the factor loadings (Hair et al., 2014).

4.13 Quality Controls

Survey research is prone to random error and measurement error which Fink and Litwin (1995) define as unpredictable error that all research encounters and error that occurs during the measurement process respectively. As Hair et al (2014) put it, assessing quality of the measures is a critical step in research as one cannot make valid conclusions if the measurements are not valid.

4.13.1 Reliability

To assess the reproducibility of the survey data, reliability measures were needed. They indicate the level (good or bad) of performance of the measurement instrument on a given population (Fink & Litwin, 1995). As Emma, Bryman, and Harley (2018) put it, stability is a key consideration of reliability i.e., whether or not the measurement scale is stable over time such that it will produce the same findings if repeated. Fink and Litwin (1995) suggest that a commonly used measure of reliability is internal consistency reliability which indicates how well the different items in a scale measure the same theme. They position Cronbach's alpha coefficient as a statistic that is used to measure internal consistency and thus, this research study determined reliability using Cronbach's alpha. According to Hair, Black, Babin and Anderson (2014), Cronbach's alpha is expressed as a number between 0 and 1 and they suggest a value between 0.60 and 0.70 as an acceptable lower limit level. Therefore, this research study used a Cronbach's alpha value above 0.60 as an acceptable level of reliability.

A similar study by Cossío-Silva et al. (2016) on the relationship between attitudinal and behavioural loyalty outlined in the literature also adopted what the researchers referred to as a less demanding criterion for Cronbach's alpha of 0.60. Consistently, Malhotra (2010) also provides 0.60 criterion as cut-off for Cronbach alpha. The results of this research study's reliability are presented in Chapter 5, Table 10.

Studies by Cossío-Silva et al. (2016) and Chen et al. (2021) also examined composite reliability (CR) measured through CFA. Thus, the researcher, to further ensure reliability of the research study, also examined composite reliability. As Hair et al. (2014) guide, to ensure reliability, the research study must explore a number of techniques and they specify CR as one of them. CR measures the true score variability in proportion to the total score variability (Malhotra, 2010). A guidance provided on CR and adopted for this research study is that a value of 0.70 or higher is desirable for reliability (Malhotra, 2010).

4.13.2 Validity

As Fink & Litwin (1995) put it, there is a need to measure validity over and above item scale's reliability. According to Emma et al. (2018), validity indicates whether the scale items measure the concept they are intended to measure. That is over and above determining the internal consistency of the scale, there needs to be an assertion the scale is capturing the truth i.e., it is capturing the research questions. The researcher thus assessed validity by examining the correlations between the items and their overall construct mean, the correlation results of which are presented in Appendix 5, Table 27 (Malhotra, 2010). The results of validity assessments are presented in Section 5.6.

Post confirming validity through correlations, the researcher further pursued convergent and discriminant validities through the CFA process outlined in section 4.12.1. Convergent validity measures the extent to two items of the same construct are correlated whilst discriminant validity measures the extent to which two constructs that are conceptually similar are distinct (Hair et al., 2014). A general guideline provided by Hair et al. (2014) on construct validity is that the standardised factor loadings should be greater than 0.5 and the average variance extracted greater than 0.5 to confirm convergent validity. Further to that, to confirm discriminant validity Hair et al. (2014) guide that the AVE of two factors should be greater than the squared correlation between the factors. Where validity could not be met, researcher adopted recommendation by Malhotra (2010) and Hair et al. (2014) of examining the factor loadings and paying attention to those that are less than 0.5 as candidates for deletion. Malhotra (2010) guides that deletion of items should not result in loss of more than 10% of the data whilst Hair et al. (2014) guides on 20% of

the data. The researcher thus adopted the 20% recommendation and items with lowest loading were iteratively removed without compromising the integrity of the constructs. Where construct validity could not be confirmed, the researcher referenced the composite reliability as per Malhotra (2010) that construct validity less than the 0.5 threshold can be ignored if composite reliability meets the criteria of more than 0.7.

4.14 Hypotheses Tests

Product moment correlation, particularly Pearson correlation, was adopted for examining the relationships between constructs. As Malhotra (2010) puts it, product moment correlation is useful for examining the strength of a relationship between two interval variables. The constructs in this research study were measured using Likert-scale items which Wegner (2016) argue to be interval in nature. Thus, the summated scales for the constructs were conclusively interval making the Pearson correlation appropriate for the determining relationships. The value of Pearson correlation (r) measures a linear association between two variables and it lies between -1 and +1 where a value of -1 indicates a strong negative correlation and value of +1 indicates a strong positive correlation (Malhotra, 2010; Wegner, 2016). According to Pallant (2013), the other key assumptions associated with Pearson correlation are:

- Normality and linearity of the variables as already articulated in section 4.11;
- Homoscedasticity which relates to the equal variance between the variables of comparison.

Where linearity was not met, the study defaulted to Spearman's rho, which is an alternative non parametric measure of correlation when the assumptions for Pearson correlation are violated (Pallant, 2013).

The research study also conducted moderation effect analysis on the relationships between constructs and this was done via hierarchical multiple regression (HMR). HMR is a stepwise multiple regression approach that allows the researcher to enter or remove independent variables in steps and make an assessment of the impact on the prediction of the dependent variable (Pallant, 2013). Multiple linear regression models the relationship between one dependent variable and at least two dependent

variables (Malhotra, 2010), thus the multiple regression approach was chosen since the research study was examining one dependent variable and at least two independent variables. Through HMR, the researcher started with the dependent variable and independent variables specified in the relationship upon which moderation effect was to be assessed. This was followed by addition of the moderating independent variable and its moderation term which is the product of the moderating independent variable and other independent variable (Pallant, 2013).

The change in co-efficient of multiple determination (R^2) and the F-test were used to examine significance of the moderation when the variables were added thus using the incremental F-test to examine if the addition of variables is significant to the preceding relationship or not (Mahlotra, 2010).

Multiple linear regression makes a number of assumptions and these are:

- There is no multicollinearity in the dependent variables thus, multicollinearity was assessed by examining the correlations between dependent variables such that the correlation must be less than 0.9 (Pallant, 2013);
- Normality and linearity of the variables as already articulated in section 4.11. These were further examined via the examination of the residual plots in SPSS (Pallant, 2013); and discussed in Chapter 5.
- Homoscedasticity which relates to the equal variance levels across the dependent variables and this was again examined via residual plots in SPSS and discussed in Chapter 5.

All hypothesis tests in this research study were conducted at 5% (0.05) level of significance.

4.15 Research Ethics

Critical to the Gordon Institute of Business Science (GIBS) procedures is the ethical clearance that must be obtained from the ethics committee before data collection. As such, the research study first obtained ethical clearance from the GIBS ethics committee (Appendix 2). A consent statement was included as part of the data

gathering instrument assuring participants of their confidentiality and anonymity and that participation was voluntary with an option to withdraw at any time without penalties (Appendix 3).

4.16 Limitations

Despite the intended input and contribution from this research study, there were several limitations similar to other studies seen in the literature. Firstly, the context of this research study was the South African mobile telecommunications industry thus there could be different results in other contexts which calls for careful consideration from other researchers who could cite this study once completed. The researcher's bias was further dominated by quantitative methods given the researcher's background.

The study used a questionnaire and Saunders and Lewis (2018) put it that one of the drawbacks of a questionnaire is that it might miss out on some of the key insights the researcher would have not thought about when drafting the questionnaire. The subjectivity of the non-probability sampling introduced a complication that limits the generalizability of the study. Also running the survey only online introduced a selection bias. There was also a risk of the sampling method leaving the key question unanswered if the instrument did not capture the constructs of the research study well. As outlined in Section 4.14, this research study used the correlation co-efficient to enable the articulation of relationships between research constructs. However, communication of relationships will not outline the causal components of the relationship. As seen in the study by Sahni et al. (2018), the study adopted an experimental strategy to better position the cause-effect relationship.

4.17 Chapter Summary

This chapter reviewed the methodological choices that were made in this research study. The study was quantitative with a descripto-explanatory purpose and a deductive approach to theory development. Purposive sampling was deployed on the mobile telecommunications customers who buy personalised products from Vodacom, MTN and Telkom and are above 18 years of age. Highlights of the sample pre-test were provided as well as the learnings from the pre-test results that were

adopted into the final survey. The chapter further provided details on the measurement instrument, with a clear indication that the research study adopted all the measurement items for the constructs from previous studies. Reliability and validity measures were highlighted as adopted in the research study with much emphasis on how the research study ensured validity and reliability of the measures. The chapter concluded with details on the hypothesis tests approach taken in the research study as well as the assumptions of those tests and how they were tested.

Chapter 5 presents the research study results including sample descriptive stats, reliability and validity as well as hypotheses tests results.

5 CHAPTER 5: RESULTS PRESENTATION

5.1 Introduction

This chapter presents the results of the study from the data collected. Context into the data is first provided followed by descriptive statistics of the variables. Reliability and validity tests of the constructs measured via the Likert-scale are also covered in this chapter which then concludes with hypotheses testing regarding the hypotheses outlined in Chapter 3 through inferential statistics. The chapter concludes with a summary of the hypotheses as well as the results of the associated tests.

5.2 Chapter layout decision

The general layout of this chapter has been structured in a manner that follows the analysis and methodological steps in the order they were followed as presented in Chapter 4. The hypotheses results are structured as per the layout of the research questions presented in Chapter 3.

5.3 Research sample obtained

The data collected through online survey had 401 responses, 237 of which were valid and complete. Almost all the invalid responses were due to disqualification from the eligibility to participate that was outlined in the previous chapter. 132 participants answered “no” to either of the questions on whether they are above 18 years of age or they have used personalisation platforms defined for the population of this study (Vodacom Just4U, MyMTN offers, Telkom MoNice) thus, were disregarded. 32 participants had none of the research questions answered and thus were disregarded as well. Eventually the study had reached the sample size target of 200 and this chapter presents findings on the 237 valid responses. Table 5 presents the summary of the sample obtained.

The sample had a female bias 77%. The predominant age group was 25-35 years contributing 68% of the total responses with 36-45 years and 18-24 years showing 21% and 9% contribution respectively. From an education point of view, the majority had a degree/diploma completed at around 43% contribution followed by

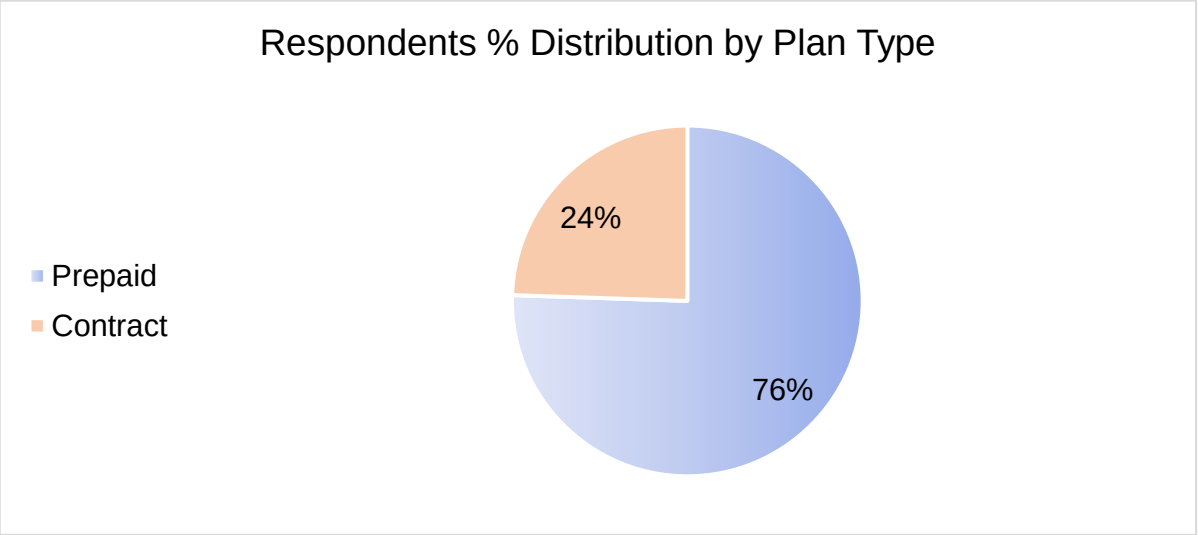
postgraduate at 32%. One respondent who had specified their education level as higher certificate was classified into some tertiary education. The majority of the participants were also notably in full time employment at 72% followed by the unemployed participants at 11% (see Table 5).

The split of the responses by plan type as seen in Figure 5 was in line with what was expected given the South African mobile market is predominantly prepaid (Statista, 2021). The almost 80/20 split between prepaid and contract in the valid responses conforms to the general market within which the research study was conducted.

Table 5: Respondent demographics

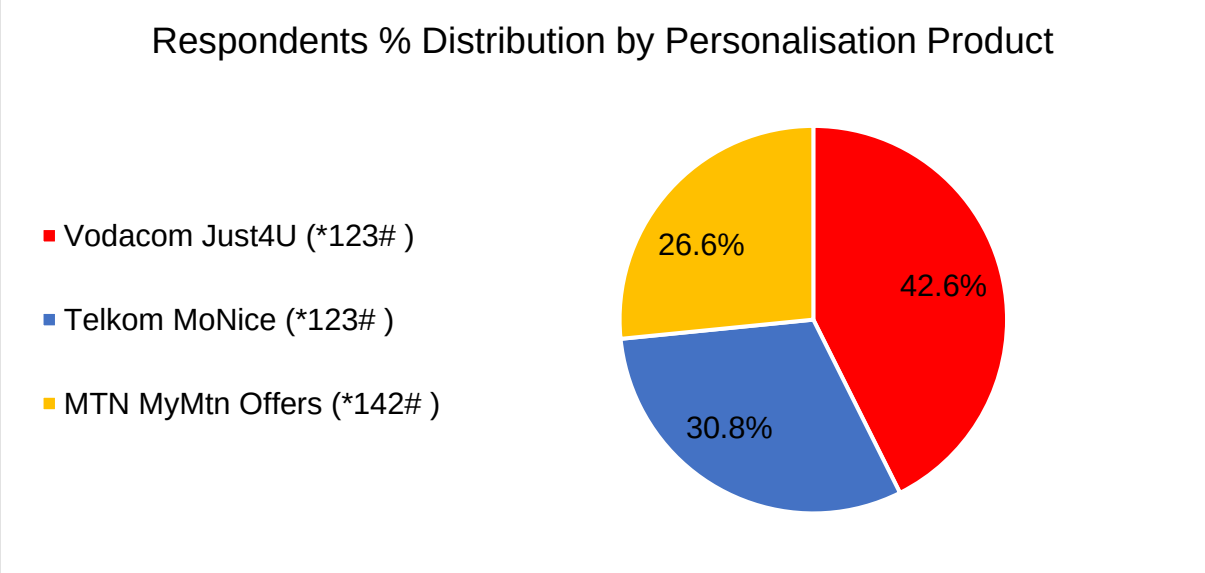
Variable		**Frequency**	**Percentage**
Gender	Female	182	77%
	Male	55	23%
Age	18-24	21	9%
	25-35	160	68%
	36-45	50	21%
	46 years and older	6	3%
Education	Matric completed	24	10%
	Some Tertiary education	32	14%
	Diploma/degree completed	104	44%
	Postgraduate	77	32%
Employment Status	Student	17	7%
	Unemployed	25	11%
	Part time employment	12	5%
	Full time employed	171	72%
	Self employed	10	4%
	Stay at home wife or husband	2	1%

Figure 5: Respondents' distribution by plan type



The personalisation product split in Figure 5 does not entirely reflect the mobile telecommunications market share dynamics in South Africa where Vodacom is a leader in the market followed by MTN and then Telkom. Instead, Telkom led MTN in the mix of the valid responses from the survey.

Figure 6: Respondents' distribution by Personalisation Product



5.4 Descriptive statistics

5.4.1 Product personalisation

The participants tended towards agreeing their network provider can provide them with products or services they might like. There was a general indifference amongst the respondents with regards to whether they would not get the same personalised products if they switched their mobile network provider. This might be reflective of the general multi-sim and switching behaviour observed in the mobile market where customers generally try to find best products and services continuously for their needs across the different network providers.

Table 6: Product personalisation descriptive statistics

Variable	Mean	Standard Deviation
My network provider offers me products that satisfy my specific need	3.47	1.03
My network provider offers me products and services that I could not find with other network providers	3.04	1.11
If I changed a network provider, I would not get products as personalised as I have now	2.96	1.15
My network provider can provide me with personalised products/services tailored to my activity context	3.46	0.96
My network provider can provide me with the kind of products/services that I might like	**3.69**	0.83

5.4.2 Behavioural loyalty

In the context of the personalisation product, the respondents had a greater agreement they have used their network provider for a number of years. There was also an assertion they use their network provider regularly. The respondents also provided an assertion they rarely consider switching network providers and they doubt they would consider switching as long as their current service continues.

Table 7: Behavioural loyalty descriptive statistics

Variable	Mean	Standard Deviation
I use my network provider on a regular basis	**4.42**	0.85
My network provider incentivizes me to stay	3.16	1.17
I have used this network provider for a number of years	**4.52**	0.82
I rarely consider switching for another network provider	**3.80**	1.28
As long as the present service continues, I doubt that I will change network provider	**3.73**	1.14

5.4.3 Attitudinal loyalty

From an attitudinal loyalty point of view, the respondents provided an assertion of an intention to continue using their present network provider. Other attitudes captured, though with a weaker assertion, tended towards recommendation of the respondents' network to those that needed advice from them and saying positive things about their network to others. Relative to behaviours, there were weaker assertions across the items related to attitudes. Table 8 presents the results. As noted earlier in literature, both attitudes and behaviours are needed for businesses to achieve sustainable loyalty from customers.

Table 8: Attitudinal loyalty descriptive statistics

Variable	Mean	Standard Deviation
I recommend my network service provider to those who seek my advice on such topics	3.57	1.05
I would encourage my friends and family to use my network service provider	3.56	1.06
I would say positive things about my network provider to other people	3.58	0.99
I intend to continue using my present network provider	**3.95**	0.95
I intend to do more business with my network provider	3.51	1.06

5.4.4 Privacy concerns

In as far as privacy concerns are concerned, there was an assertion from respondents that personal privacy is an important subject to them. The respondents also tended towards agreeing there is risk that mobile network providers could cause serious privacy problems. The respondents further provided an assertion of the importance of keeping their privacy intact from mobile network operators. There was somewhat a weaker assertion from respondents around their concern in relation to how mobile network operators handle their personal information. Table 9 presents the results. The manner in which the scales were used and checked for reliability is detailed in sections 5.4 and 5.5.

Table 9: Privacy concerns descriptive statistics

Variable	Mean	Standard Deviation
I am concerned about the threats to my privacy	3.05	1.23
Compared to other subjects, personal privacy is very important	**4.44**	0.79
All things considered; mobile network providers could cause serious privacy problems	**4.00**	0.98
Compared to others, I am more concerned about the way mobile network providers handle my personal information	**3.69**	1.07
I believe other people are too much concerned with data privacy issues	2.51	1.15
To me, it is the most important thing to keep my privacy intact from mobile network providers	**4.29**	0.85

5.5 Reliability

The constructs in the study were assessed for reliability using Cronbach's alpha. Privacy concerns showed Cronbach's alpha of 0.49 (see Appendix 5, Figure 11), upon which, the individual questions were assessed via item statistics leading to deletion of the fifth question (PC5). Finally, the Cronbach's alpha ranged from 0.66 for the behavioural loyalty and privacy concerns constructs to 0.91 for the attitudinal loyalty. As can be seen in Table 10, all constructs in the study met the 0.6 criterion set by Hair et al. (2014) who set a criterion of 0.60 to 0.70 as the lower limit for acceptable reliability. Composite reliability is discussed in section 5.7.1 which provides further validation.

Table 10: Cronbach alpha per construct

Construct	Cronbach Alpha
Product personalisation	0.77
Behavioural Loyalty	0.66
Attitudinal Loyalty	0.91
Privacy concerns	0.69

5.6 Validity

The examination of the Pearson correlations between each item and its construct total reflected significant correlations for all items or questions as detailed in Appendix 5, Table 27. The correlations varied between 0.48 and 0.89. Thus, based on this assessment, validity was confirmed. Further to this, the results of convergent validity and discriminant validity are presented in section 5.6.1.

5.7 Factor analysis

Given the assumption of an existing structure that underlies the data, intercorrelations amongst the variables in each construct were assessed to ensure that all variables have correlation greater than 0.3 with at least one variable for factor analysis to be adopted (see Table 28, Appendix 5). As outlined in section 4.10, factor analysis comprises two approaches namely exploratory factor analysis and confirmatory factor analysis.

5.7.1 Confirmatory factor analysis

Table 11: CFA metrics

Measure		Value
Chi-squared(X^2)		
	Chi-squared	541.92
	Degrees of freedom	164
	p-value	0.00
Absolute Fit Measures		
	RMSEA	0.099
	SRMR	0.077
Incremental Fit Index		
	CFI	0.818

Based on the p-value being less than 0.05 level of significance, the Chi-squared test suggested lack of overall fit of the CFA model i.e., the observed covariance matrix in the sample does not match the fitted covariance matrix in the model. Examining the RMSEA also resulted in a value that suggested lack of good fit as the value was above the guideline of 0.08 where a value below is desirable for good fit. The model further failed the SRMR test as the value was above the 0.08 guideline and again, a value lower than 0.08 is desirable for good fit. Looking at the incremental fit index, the CFI is below the 0.9 guideline thus reflecting further failure of the model. (See Figure 12, Appendix 5 for the CFA model)

The construct validity of the measurement model was assessed via convergent validity and discriminant validity which were determined via AMOS through CFA. The researcher also assessed composite reliability (CR) of the constructs. The initial results yielded lack of composite reliability for the behavioural loyalty construct. Convergent and discriminant validities were only achieved for the attitudinal loyalty construct (see Appendix 5, Table 29 and 30). Given these results, Malhotra (2010) and Hair et al. (2014) recommended examining the factor loadings with a guideline that items with non-significant factor loadings can be dropped and the significant ones could be candidates for dropping if they have factor loadings less than 0.5. BL3

was found to be insignificant and therefore dropped. Examining the factor loadings shows seven items below 0.5. Adopting the 20% guideline on the number of items to be deleted without compromising integrity of the data, items with lowest loading were iteratively removed, namely BL2 and BL1.

As seen in Table 12, all constructs met the composite reliability (CR) requirement of greater than 0.7. Attitudinal loyalty and behavioural loyalty constructs further met the convergent validity requirement based on their AVE. However, Malhotra (2010) guided that if composite reliability is met and the AVE is less than 0.5, the CR condition can overwrite the AVE requirement for convergent validity. The researcher thus concluded that convergent validity was met for all constructs. Behavioural loyalty and privacy concerns didn't meet the composite reliability (CR) requirement of greater than 0.7. Similarly, discriminant validity was found for the attitudinal loyalty, behavioural loyalty and privacy concerns constructs (see Table 13). Consequently, the study defaulted to exploratory factor analysis (EFA) with items BL1, BL2, BL3 and PC5 removed from further analysis.

Table 12: Item loadings, composite reliability and AVE

Construct	Item	Loadings	CR	AVE
Product Personalisation	PP1	**0.57**	0.77	0.41
	PP2	**0.72**		
	PP3	**0.67**		
	PP4	**0.62**		
	PP5	**0.63**		
Attitudinal Loyalty	AL1	**0.84**	0.87	0.69
	AL2	**0.87**		
	AL3	**0.85**		
	AL4	**0.81**		
	AL5	**0.78**		
Behavioural Loyalty	BL4	**0.67**	0.71	0.66
	BL5	**0.93**		
Privacy Concerns	PC1	0.47	0.71	0.34
	PC2	0.41		
	PC3	**0.69**		
	PC4	**0.79**		
	PC6	0.45		

Table 13: Discriminant validity statistics (correlations and square root of AVE in brackets)

Construct		1	2	3	4
1	Product Personalisation	(0.64)			
2	Attitudinal Loyalty	0.73	(0.83)		
3	Behavioural Loyalty	0.66	0.75	(0.81)	
4	Privacy Concerns	-0.08	-0.04	0.02	(0.58)

5.7.2 Exploratory factor analysis

To support the application of factor analysis, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was used to assess sample adequacy and Bartlett's test of sphericity used for assessing the statistical significance of the presence of correlations amongst the items in the constructs. The results of these tests can be seen in Table 14. The Bartlett's tests of sphericity were statistically significant across all constructs thus confirming the presence of statistically significant correlations amongst the items in the constructs. All sampling adequacies were above 0.60 which as per Hair et al. (2014), represents results above miserable sampling adequacy. Specifically, product personalisation and behavioural loyalty were interpreted as mediocre adequacy, privacy concerns as middling and attitudinal loyalty as meritorious. Thus, all constructs were above the acceptable threshold in terms of sampling adequacy. These results imply factorizability for all the constructs thus, PCA was then conducted to extract the factors.

Table 14: Exploratory factor analysis results

Construct	KMO	Bartlett's test of sphericity	Components extracted	Variance Explained
Product personalisation	0.68	0.00	1	52.97%
Behavioural Loyalty	0.72	0.00	1	81.22%
Attitudinal Loyalty	0.85	0.00	1	75.15%
Privacy concerns	0.73	0.00	2	58.96%

Three constructs namely product personalisation, attitudinal loyalty and behavioural loyalty loaded onto one factor each explaining 52.97% ,75.15% and 81.22% of their

variances respectively whilst privacy concerns loaded onto two factors each explaining 58.96% of the variance as seen in Table 13 (see Appendix 5, Figure 13). Thus, the researcher subdivided the privacy concerns construct into separate factors namely Privacy Concern and Privacy Importance. Table 15 provides the spilt together with the factor loadings. The naming of the new constructs was based on the ranking of the items included in each factor by factor loading as recommended by Hair et al. (2014).

Table 15: Privacy concerns latent factors

Construct	Included Items (Ranked by factor loading)	Factor Loading
Privacy Concern	I am concerned about the threats to my privacy	0.82
	Compared to others, I am more concerned about the way mobile network providers handle my personal information	0.77
	All things considered; mobile network providers could cause serious privacy problems	0.67
Privacy Importance	Compared to other subjects, personal privacy is very important	0.82
	To me, it is the most important thing to keep my privacy intact from mobile network providers	0.78

5.8 Normality

A test for normality was first examined by observing the skewedness and kurtosis of the items in each construct as per guideline that recommends values between -2 and 2. Table 31 in Appendix 5 presents the results and it was found the variables had little or no deviation from normality based on this approach on the non-deleted items. This warranted an assumption for normality in the study. Once the final factors for use in analysis were determined through the CFA and EFA processes outlined in the prior sections, further tests for normality were done on the summated scales and the

results can be seen in Table 16. All constructs failed the normality test based on the two tests conducted however, as per Maxwell, Delaney, & Kelley (2017), analysis can still continue even if normality fails. Hair et al. (2014) also noted the importance of sample size in determining the likely effects of non-normality and they argued for sample sizes greater than 200, departure from normality should have minimal effects on the statistical analysis. Thus, the tests conducted in this research made the assumption of normality.

Table 16: Normality tests

Construct	**Kolmogorov-Smirnov**			**Shapiro-Wilk**		
	Statistic	df	Sig.	Statistic	df	Sig.
Personalisation	0.10	237	0.00	0.98	237	0.00
Attitudinal Loyalty	0.08	237	0.00	0.96	237	0.00
Privacy Concern	0.10	237	0.00	0.97	237	0.00
Privacy Importance	0.12	237	0.00	0.90	237	0.00
Behavioural Loyalty	0.17	237	0.01	0.97	237	0.00

5.9 Research hypotheses

5.9.1 Research question 1

Direct relationship between attitudinal loyalty and behavioural loyalty

The first research question of the research study related to examining the relationship between attitudinal loyalty and behavioural loyalty as articulated in the following hypothesis:

- H1 – There is a direct, positive relationship between customers level of attitudinal loyalty and behavioural loyalty

The first hypothesis dealt with the relationship between attitudinal loyalty and behavioural loyalty which were tested using Pearson's correlation coefficient due to the assumptions of normality. Normality was assumed and linearity was confirmed by examining the scatter plots (Appendix 5, Figure 14) which highlighted customers

with more attitudinal loyalty tend to have more behavioural loyalty. One-tailed tests were run given the direction of correlation between the variables of interest is specified to be greater than zero (Malhotra, 2010). Table 17 presents the correlation results (see Appendix 5, Figure 15 for SPSS output)

Table 17: Correlation between attitudinal loyalty and behavioural loyalty

Attitudinal Loyalty Vs:	**N**	**Pearson Correlation Coefficient**	**p-value (1-tailed)**
Behavioural Loyalty	237	0.65	0.00**

**Correlation significant at 5% level (one-tailed)

Attitudinal loyalty has a significant positive relationship with behavioural loyalty (r=0.63 and p=0.00). Thus, as a result of the statistically significant relationship between attitudinal loyalty and behavioural loyalty, hypothesis 1 was supported.

5.9.2 Research question 2

Direct relationship between personalisation and customer loyalty (attitudinal and behavioural)

The first part of the second research question of the research study related to examining the direct relationships between personalisation and attitudinal as well as personalisation and behavioural as articulated in the following hypotheses:

- H2a1 – There is a direct, positive relationship between personalisation and attitudinal customer loyalty
- H2a2 – There is a direct. positive relationship between personalisation and behavioural customer loyalty

Table 18: Correlation between personalisation and customer loyalty (attitudinal and behavioural)

Personalisation Vs:	N	Pearson Correlation Coefficient	p-value (1-tailed)
Attitudinal Loyalty	237	0.63	0.00**
Behavioural Loyalty	237	0.43	0.00**

**Correlation significant at 5% level (one-tailed)

Examination of the scatterplots in Appendix 5 (Figure 14) highlighted the existence of a linear relationships between personalisation and attitudinal loyalty as well as between personalisation and behavioural loyalty. Thus, linearity was confirmed.

Due to further assumptions on normality being made, Hypotheses 2a1 and 2a2 were assessed via Pearson's correlation coefficient in order to uncover the relationship between personalisation and attitudinal loyalty as well as relationship between personalisation and behavioural loyalty. A positive relationship was discovered between personalisation and attitudinal loyalty (r=0.63 and p=0.00) as well as between personalisation and behavioural loyalty (r=0.43 and p=0.00). The relationship between personalisation and attitudinal loyalty was stronger as compared to that between personalisation and behavioural loyalty. Table 18 presents the results, with the full SPSS output located in Appendix 5, Figure 15. Hypotheses 2a1 and 2a2 were thus supported.

Moderation effect of privacy concerns on the relationship between personalisation and customer loyalty (attitudinal and behavioural)

The second part of the second research question was to examine the moderation effect of privacy concerns on the relationship between attitudinal loyalty and behavioural loyalty as captured in the following first hypothesis:

- H2b1 – Privacy concerns have a significant moderation effect on the relationship between personalisation and attitudinal loyalty

- H2b2 – Privacy concerns have a significant moderation effect on the relationship between personalisation and behavioural loyalty

Privacy concerns were examined at the level of two factors namely privacy concern and privacy importance which have been obtained via EFA as already outlined. Hierarchical Multiple Regression (HMR) was chosen for examining the moderating effect of privacy concerns between personalisation and customer loyalty (attitudinal and behavioural). An analysis was done to check for multicollinearity, linearity, normality and homoscedasticity.

Multicollinearity was assessed by examining the correlations between dependent variables and confirmed to be non-existent (see Appendix 5, Figure 15). Deviations from normality were also found to not be major by examining the Normal Probability Plot despite the Shapiro-Wilk test having confirmed non normality. Hypothesis 2b1 was examined first. To examine the moderation of privacy concern (PC2), the relationship between personalisation and attitudinal loyalty was examined first with PC2 and its moderation added as a follow up step to examine the impact. Tables 19 presents the results where attitudinal loyalty was the dependent variable (see Appendix 5, Figure 16 for the SPSS output). The R^2 change and the corresponding F-test were examined. The same process was repeated with privacy importance (PI) being the moderator and the results shown in Table 20 (see Appendix 5, Figure 17 for the SPSS output).

Table 19: HMR results on privacy concern (PC2) moderation on PP-AL

Model	**Predictors**	**R**	**R^2**	**Adj. R^2**	**Std. Error**	**Change Statistics**				
						ΔR^2	ΔF	df1	df2	Sig. F Change
1	PP	0.63	0.39	0.39	0.69	0.39	153.78	1	235	0.00
2	PP, PC2, PC2_MOD	0.63	0.39	0.39	0.69	0.00	0.43	2	233	0.93

Table 20: HMR results on privacy importance (PI) moderation on PP-AL

Model	Predictors	R	R^2	Adj. R^2	Std. Error	Change Statistics				
						ΔR^2	ΔF	df1	df2	Sig. F Change
1	PP	0.63	0.39	0.39	0.69	0.39	153.78	1	235	0.00
2	PP, PI, PI_MOD	0.64	0.41	0.40	0.68	0.01	3.11	2	233	0.05

As seen in Table 19, the first model (Model 1) had an R^2 of 39% meaning product personalisation (PP) accounted for about 39% of the variance in attitudinal loyalty. When privacy concern and its moderator through an interaction term (PC2 and PC2_MOD) were added, the R^2 remained almost flat at 39%. Examining the F-test significance of adding PC2 and PC2_MOD, a p-value greater than 5% was found. The addition of PC2 was therefore insignificant to the relationship between personalisation and attitudinal loyalty.

As seen in Table 20, the addition of PI and PI_MOD had a significant effect on the relationship between PP and attitudinal loyalty. Thus, privacy importance was a significant moderator of the relationship between personalisation and attitudinal loyalty. However, since the PC2 latent factor had a higher variance extracted compared to PI in the factorisation, it was concluded t the original privacy concerns construct does not have a moderation effect on the relationship between personalisation and attitudinal loyalty. Therefore, hypothesis 2b1 was not supported. A similar process was repeated for hypothesis 2b2 and as seen in Tables 21 and 22 (see Appendix 5, Figure 18 & 19 for the SPSS output). The additions of PC2 and PI individually did not have significant moderating effects on the relationship between personalisation and behavioural loyalty. Hypothesis 2b2 was also thus, not supported.

Table 21: HMR results on privacy concern (PC2) moderation PP-BL relationship

Model	Predictors	R	R^2	Adj. R^2	Std. Error	Change Statistics				
						ΔR^2	ΔF	df1	df2	Sig. F Change
1	PP	0.43	0.18	0.18	0.98	0.18	54.45	1	235	0.00
2	PP, PC2, PC2_MOD	0.44	0.19	0.18	0.98	0.00	0.90	2	233	0.41

Table 22*: HMR results on privacy importance (PI) moderation PP-BL relationship*

Model	Predictors	R	R^2	Adj. R^2	Std. Error	Change Statistics				
						ΔR^2	ΔF	df1	df2	Sig. F Change
1	PP	0.43	0.18	0.18	0.98	0.18	54.45	1	235	0.00
2	PP, PI, PI_MOD	0.44	0.19	0.18	0.98	0.00	0.81	2	233	0.44

5.9.3 Research question 3

Moderation effect of personalisation on the relationship between attitudinal and behavioural loyalty

The third research question related to the moderation effect on the relationship between attitudinal loyalty and behavioural loyalty as captured in the following hypothesis:

- H3 – Personalisation has a significant moderation effect on the relationship between customers level of behavioural and attitudinal loyalty

Table 23: HLMR results on personalisation moderation on AL-BL relationship

Model	Predictors	R	R^2	Adj. R^2	Std. Error	Change Statistics				
						ΔR^2	ΔF	df1	df2	Sig. F Change
1	AL	0.65	0.42	0.42	0.83	0.41	169.30	1	235	0.00
2	AL, PP, PP_MOD	0.65	0.42	0.41	0.83	0.00	0.36	2	233	0.69

Similar to Section 5.8.3, multicollinearity was assessed by examining the correlations between dependent variables and confirmed to be non-existent (see Appendix 5, Figure 15). Deviations from normality were again found to not be major by examining the Normal Probability Plot (Appendix 5, Figure 20) despite Shapiro-Wilk test having confirmed non normality. Normality was therefore assumed. Through HMR, the addition of personalisation (PP) and its moderator PP_MOD did not yield significant moderation effects on the relationship between attitudinal loyalty and behavioural loyalty Hypothesis 3 was therefore not supported.

5.9.4 Research question 4

Direct relationship between privacy concerns and customer loyalty (attitudinal and behavioural)

The fourth research question related to examining the direct relationship between privacy concerns and attitudinal loyalty as well as between privacy concerns and behavioural loyalty as captured in the following hypotheses:

- H4a – There is a direct, negative relationship between the level of privacy concerns and level of attitudinal customer loyalty
- H4b – There is a direct, negative relationship between the level of privacy concerns and level of behavioural customer loyalty

The privacy concerns construct was shown to load into two factors, namely privacy concern and privacy importance through EFA as outlined in section 5.6.2. Thus, for

the purposes of testing the relationships that involve the privacy concerns construct, the privacy concern and privacy importance latent factors were examined individually in relation to attitudinal loyalty and behavioural loyalty. Examining the scatter plots did not reflect existence of any relationship (Appendix 5, Figure 14). Linearity could therefore not be confirmed. The statistical test adopted was therefore Spearman's rho. Tables 24 and 25 presents the findings based on Spearman's rho assessment (see Appendix 5, Figure 21 for SPSS output).

Table 24: Correlation between privacy concern (PC2) and customer loyalty (attitudinal and behavioural)

Privacy Concern (PC2) Vs:	**N**	**Spearman's rho**	**p-value (1-tailed)**
Behavioural Loyalty	237	-0.05	0.24
Attitudinal Loyalty	237	-0.09	0.07

Table 25: Correlation between privacy importance (PI) and customer loyalty (attitudinal and behavioural)

Privacy Importance (PI) Vs:	**N**	**Spearman's rho**	**p-value (1-tailed)**
Behavioural Loyalty	237	0.07	0.15
Attitudinal Loyalty	237	0.13	0.02*

*Correlation significant at 5% level (one-tailed)

The results in Table 24 show though there was a negative relationship between privacy concern and attitudinal loyalty with Spearman's rho of -0.09, that relationship was insignificant based on p-value of 0.07. Table 25 shows there was a significant relationship between privacy importance and attitudinal loyalty but that relationship was positive based on Spearman's rho of 0.13. Thus, the latent factors of privacy concerns (PC2 and PI) did not have a statistically significant direct negative relationship with attitudinal loyalty. As a result, hypothesis 4a was not supported.

Similarly, Table 24 shows there was an insignificant relationship between PC2 and behavioural loyalty whilst Table 25 shows there was an insignificant relationship between PI and behavioural loyalty. However, there appeared to be a significant relationship between privacy importance and attitudinal loyalty. Thus, the latent factors of privacy concerns (PC2 and PI) did not have a statistically significant direct negative relationship with behavioural loyalty and this led to hypothesis 4b not being supported.

5.9.5 Chapter Summary

This chapter began with a review of the demographics followed by descriptive stats. The usability of the scales was reviewed with the scales demonstrating first hand reliability and validity. However, CFA revealed weaknesses with some of the scales around convergent and discriminant validities and it was also concluded the measurement model was not a good fit. The research study then defaulted to EFA, out of which, summated scales were determined to test the relationships. Table 26 summarises the hypotheses testing findings.

Table 26: Summary of hypotheses

Hypothesis	Relationship in model	Supported/Not Supported
Hypothesis1	Attitudinal loyalty influences behavioural loyalty	Supported
Hypothesis 2a1	Personalisation influences attitudinal loyalty	Supported
Hypothesis 2a2	Personalisation influences attitudinal loyalty	Supported
Hypothesis 2b1	Privacy concerns moderate the relationship between personalisation and attitudinal loyalty	Not Supported
Hypothesis 2b2	Privacy concerns moderate the relationship between personalisation and behavioural loyalty	Not Supported
Hypothesis 3	Personalisation moderates the relationship between attitudinal and behavioural loyalty	Not Supported
Hypothesis 4a	Privacy concerns influence attitudinal loyalty	Not Supported
Hypothesis 4b	Privacy concerns influence behavioural loyalty	Not Supported

6 CHAPTER 6: RESULTS DISCUSSION

6.1 Introduction

This chapter discusses the extent to which the model proposed in Chapter 3 was validated through the research study results presented in Chapter 5. The research study findings are discussed in detail connecting the literature covered in Chapter 2 which formed the basis for the model proposed in Chapter 3. The discussions in this chapter provide an understanding of the relationship between product personalisation and customer loyalty in the mobile telecommunications industry in South Africa.

6.2 Research Process Review

Through literature, a conceptual model was developed that would explain the attitudes and behaviours of customers when offered personalised products and theoretical groundings were made using Relationship Marketing Theory and Reactance Theory. Relationship Marketing Theory asserted that personalisation would positively influence the attitudinal loyalty as well as behavioural loyalty. On the contrary, Reactance Theory argued personalisation, which by design, constrains the customer choice and might lead to unintended consequences from a customer loyalty point of view, particularly when customers have heightened privacy concerns. Evidence in the empirical studies reviewed in Chapter 2 confirmed the theoretical groundings.

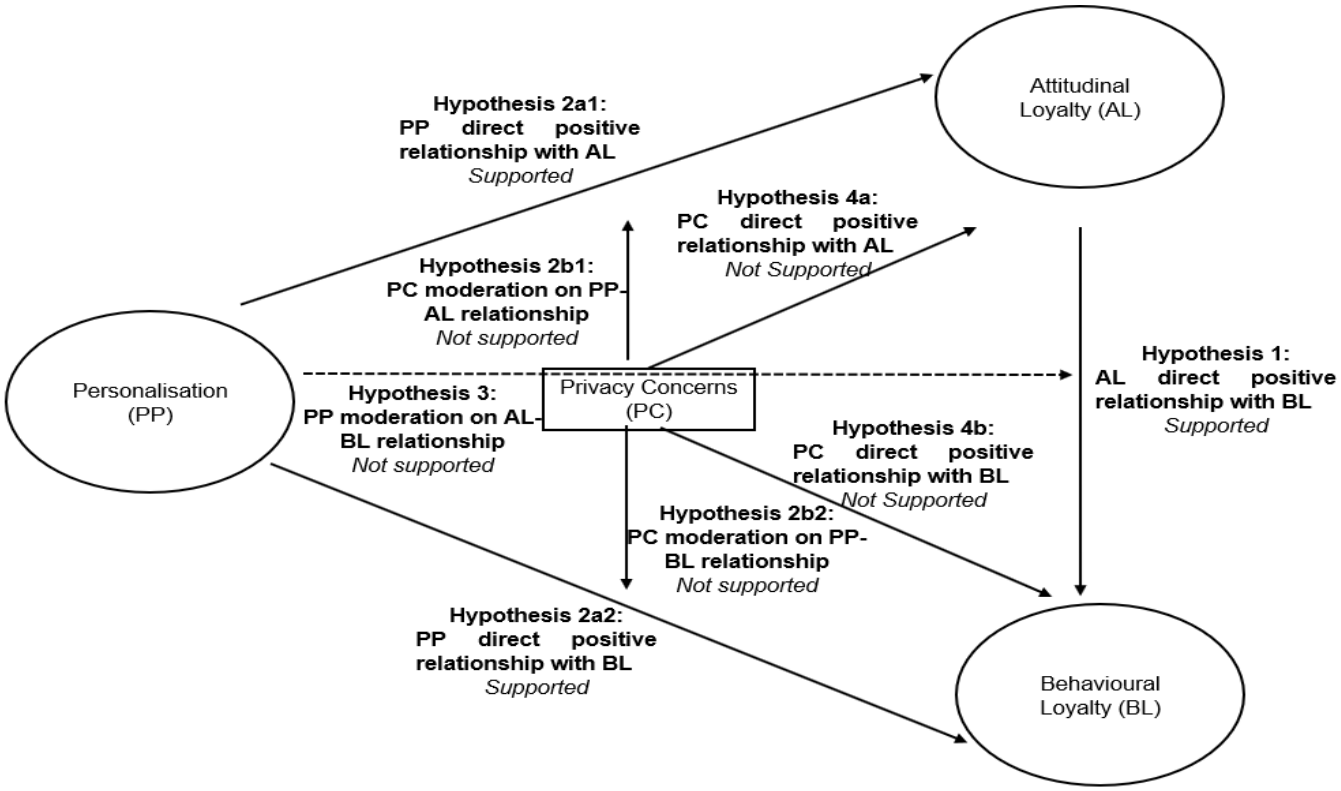
A descripto-explanatory study design was used on a valid sample of 237 mobile telecommunication customers in South Africa who purchased personalised products from Vodacom, MTN and Telkom. These were chosen subscribers as they would represent population from the mobile companies that have almost 85% of the market share in South Africa. Also, these mobile companies were the ones that have been driving personalisation in the market thus the sample would be an ideal one to provide perceptions on personalisation. The constructs were measured through previous research instruments covering personalisation, attitudinal loyalty, behavioural loyalty and privacy concerns. Personalisation is a growing marketing

practice in the big data era thus, the relationships studied in this research would provide further understanding on the influences of personalisation.

6.3 Overview of Research Findings

The research findings on the basis of the model that was proposed in Chapter 3 (Figure 3) are better summarised by Figure 6 below. The research study results found support for the main research objective relating to the influence of personalisation on customer loyalty (attitudinal and behavioural). There was however no finding on the moderation capability of privacy concerns on the relationship between personalisation and customer loyalty (attitudinal and behavioural). Other additional hypothesised relationships except for relationship between attitudinal loyalty and behavioural loyalty were not supported but do reveal some key insights for research and business which are discussed further in this chapter.

Figure 7: Research findings model



Two relationships that were not directly captured by the model were found and supported. These were a positive moderating effect of privacy importance (a latent construct found in the study for privacy concerns) on the relationship between PP and AL as well as a direct positive relationship between privacy importance and AL.

6.4 Research Question 1 Discussion

What is the relationship between attitudinal loyalty and behavioural loyalty?

The first research question sought to explain the relationship between the two constructs of customer loyalty: attitudinal loyalty and behavioural loyalty and this was done through the hypothesis 1.

- H1 – There is a direct, positive relationship between attitudinal loyalty and behavioural loyalty

The research study results found there is a significant positive relationship between attitudinal loyalty and behavioural loyalty. This was evidenced by Pearson's correlation of 0.65 as seen in Tables 17 of Chapter 5. Participants who had higher assertions of attitudinal loyalty were more likely to have higher assertions on behavioural loyalty.

This finding aligns to the finding in the study by Cossío-Silva et al. (2016) who found the existence of a significant positive relationship between attitudinal loyalty and behavioural loyalty. Their study was done in the personal care industry thus, this research study, which was done in the mobile telecommunications context further supports the articulation of an existence of a relationship between attitudinal loyalty and behavioural loyalty. On the same note, Saini & Singh (2020) provided a similar assertion of the relationship between attitudinal loyalty and behavioural loyalty through their study that found attitudinal loyalty to be a predictor of repeat purchases.

Behavioural loyalty was discussed in the literature review as a phenomenon that is evidenced by repeat purchases leading to more revenue for businesses. However, Watson et al. (2015) argued that behavioural loyalty may well be a result of the prevailing conditions and limitations (e.g., lack of alternatives in certain locations)

and it ignores the psychological components associated with loyalty. This consideration is particularly important in the mobile telecommunications industry in South Africa where availability of coverage varies per company across different areas i.e., there would be locations where other companies don't have coverage and thus leaving customers with few alternatives. In such conditions, care should be given not to interpret repeat purchases as ultimate loyalty as the picture may change as competition enters the said locations.

It was also noted in the literature that repeat purchases do not imply price inelasticity, a concept that most businesses seem to misunderstand. This was evidenced in the practices of increasing prices for the behaviourally loyal customers i.e., repeat purchasers in search of revenue growths opportunities. On the same note, businesses from time to time find themselves in situations where they have to increase prices to keep up with the inflation and other rising costs. These may induce unintended customer churn as the behaviourally loyal customers are found in literature to be more price aware and price sensitive.

Thus, the literature found attitudinal loyalty was necessary to ensure there is less price sensitivity from customers and thus strengthening behavioural loyalty (Umashankar, Bhagwat, & Kumar, 2017). Therefore, the pursuit of attitudinal loyalty should be a priority for businesses in search of ultimate loyalty that would enable the needed growth in revenues and market share. It has further been noted in literature the costs of acquiring new customers outweigh the costs of maintaining existing relationships. Thus, as businesses pursue pricing strategies that impact existing customers, care should be given to not only observe behavioural loyalty but consider attitudinal loyalty as well. This would avoid a trap where businesses lose repeat purchasers who are high value customers and attempting to close the gaps through acquisitions which are far more costly than to maintain existing customer relationships.

The recommendation for business is that attitudinal loyalty of the customers should be understood and pursued as a pre-requisite for behavioural loyalty. Thus, businesses should focus on brand and marketing initiatives that help drive attitudinal loyalty, particularly for existing customers that are currently generating revenues.

Businesses should further recognise it is not only behavioural loyalty that's observed in the business through volumes that encapsulates true customer loyalty.

The mobile telecommunications market in South Africa is saturated. Businesses thus need to fall back on searching for sustainable competitive advantage. Switching costs are also low in the market and intensified by multi-sim behaviour where customers maintain more than one mobile sim card. Further to this, literature noted customers can display loyalty to more than one business. Finding strategies that would improve customer attitudinal loyalty versus competitors would be an ideal pursuit for mobile telecommunications companies.

Thus, clear initiatives targeted at improving the customer experience should be prioritised. This may have a direct influence on the customers' attitudes towards the business which has been found to be a predictor of the needed behavioural loyalty from customers. Attitudinal loyalty would also create positive word of mouth for the business thus creating channels that would lead to acquisitions at no direct cost and this would be a saving for businesses given the high costs of acquisition through traditional programmes and channels. Felix (2014) however noted customers may display the same level of attitudinal loyalty to the different businesses emphasizing the need for businesses to differentiate their value proposition in pursuit of attitudinal loyalty and stay ahead of the competition.

6.4.1 Conclusion on Research Question 1

Key findings out of the research study in this context were that a direct positive relationship exists between attitudinal loyalty and behavioural loyalty. Thus, when businesses achieve attitudinal loyalty from customers that may translate to behavioural loyalty and hence repeat purchases, revenue would ultimately be driven upwards.

The research study therefore contributed to the articulation of an existence of a relationship between attitudinal loyalty and behavioural loyalty through the assessment of that relationship in the mobile telecommunications context. Thus, in light of behavioural loyalty which is not enough on its own to create sustainable

advantage, insights were provided that businesses should prioritize efforts that increase customer attitudinal loyalty which may then improve behavioural loyalty.

The literature insights advocated for the existence of both attitudinal loyalty and behavioural loyalty in order to achieve the true benefits of customer loyalty. Thus, the key finding from this research question was that when business achieve attitudinal loyalty from customers that may translate to behavioural loyalty.

6.5 Research Question 2 Discussion

RQ2a: What is the relationship between personalisation and customer loyalty (attitudinal and behavioural)?

The first part of the second research question related to the main research question and it sought to understand the influence that personalisation has on customer loyalty, both attitudinal loyalty and behavioural loyalty. The hypotheses relating to this research question were:

- H2a1 – There is a direct, positive relationship between personalisation and attitudinal customer loyalty
- H2a2 – There is a direct, positive relationship between personalisation and behavioural customer loyalty

The research study revealed a direct, positive relationship between personalisation and attitudinal loyalty evidenced by Pearson's correlation of 0.63 and as seen in Table 18 of Chapter 5. Respondents who had a higher perception of personalisation from their mobile telecommunications company were more likely to exhibit attitudinal loyalty towards the company. The research study also revealed a direct positive relationship between personalisation and behavioural loyalty evidenced by Pearson's correlation of 0.43 and as seen in Table 18 of Chapter 5. Respondents who had higher perception of personalisation from their mobile telecommunications company were more likely also to exhibit behavioural loyalty towards the company. Examination of the strengths of the relationships revealed personalisation had a stronger relationship with attitudinal loyalty as per Pearson's correlation in comparison to relationship with behavioural loyalty.

Customer loyalty has been found in literature to comprise attitudinal loyalty and behavioural loyalty. This research study pursued to study the construct of customer loyalty from attitudinal loyalty and behavioural loyalty viewpoints as per recommendation by Watson et al. (2015). Given the existence of relationships between personalisation and the categories of customer loyalty (attitudinal and behavioural) as found in this research study's results, a relationship was therefore confirmed to exist between personalisation and customer loyalty. This supports the study by Ball et al. (2006) and Shanahan et al. (2019) as outlined in the literature review where the researchers found personalisation positively influences customer loyalty. Relationship Marketing Theory also provided insights into the influence of personalisation on customer loyalty.

This research study makes further contribution by enhancing the explanation of the relationship between personalisation and customer loyalty from an attitudinal and behavioural loyalty point of view. Studies reviewed in literature had examined customer loyalty as a holistic construct in relation to personalisation and made no distinction between attitunal and behavioural loyalty.

As discussed in the literature review, the importance of customer loyalty cannont be understated for business. Achieving customer loyalty helps businesses sustain their advantage over competitors (Cossío-Silva et al., 2016). Relationship Marketing Theory provided guidance that personalisation as a tool for marketing would help businesses achieve customer loyalty. Reviewing the study by Gremler et al. (2020) revealed a significant relationship between customer loyalty and switching costs. Thus, in a mobile telecommunications context where switching costs are low, businesses should look to other drivers of achieving customer loyalty. This research study therefore positions personalisation as the driver that businesses can adopt to drive customer loyalty.

Where we have seen attitudinal loyalty to positively influence behavioural loyalty as per study findings for Research Question 1, this research study further made an important contribution highlighting personalisation strongly predicts attitudinal loyalty as compared to behavioural loyalty. Thus, it is recommended that in search of attitudinal loyalty, businesses should employ personalisation at scale as this would

influence attitudinal loyalty which then influences behavioural loyalty and may lead to growth in revenues through repeat purchases as well as extended word of mouth that creates a pipeline for new customers at lower acquisition costs.

Personalisation is noted in literature to be growing across industries with some of the giant global companies such as Amazon deploying personalisation via recommender systems. Thus, retail businesses that are lagging behind need to catch up as personalisation is expected to create the next frontier of marketing in the digital age. Thus, the allocation of resources in businesses, particularly marketing and information technology resources, should prioritise big data tools and analytical skills needed to drive personalisation at scale. Marketing personnel should also embrace a shift from traditional above the line targeting to more personalised targeting thus, businesses will also need to invest in re-skilling of some of the identified marketing professionals to drive the narrative of personalisation.

Despite the benefits associated with personalisation, Reactance Theory however, has provided a counter-argument in literature that too much personalisation may lead to undesired results, particularly when customers have privacy concerns. This research study therefore went on to examine the moderating effect of privacy concerns on the relationship between personalisation and customer loyalty.

RQ2b: **What is the moderation effect of privacy concerns on the personalisation-loyalty (attitudinal and behavioural) relationship?**

The hypotheses tested under the second part of Research Question 2 were:

- H2b1 – Privacy concerns have a significant moderation effect on the relationship between personalisation and attitudinal loyalty
- H2b2 – Privacy concerns have a significant moderation effect on the relationship between personalisation and behavioural loyalty

As seen in Table 15 of Chapter 5, the privacy concern construct was factorised into two latent constructs, namely privacy concern (PC2) and privacy importance (PI). Thus, the examination of the moderation effect of privacy concerns was done at the level of PC2 and PI respectively. The research study results revealed that PC2 does

not moderate the relationship between personalisation and attitudinal loyalty. This is evidenced in Table 19 of Chapter 5 where it can be seen the addition of privacy concern to moderate the relationship between personalisation and attitudinal loyalty had non-significant impact on the R^2. Interestingly though, PI was found to have a significant moderation effect on the relationship between personalisation and attitudinal loyalty as seen in Table 20 of Chapter 5. This provides an important contribution to the theoretical understanding of how privacy concerns moderate relationships between personalisation and attitudinal loyalty. However, given the study's original construct of privacy concerns, the conclusion was privacy concerns do not have a moderation effect on the relationship between personalisation and attitudinal loyalty. Similarly, examining Tables 21 and 22 of Chapter 5 showed that PC2 and PI had no moderating effect on the relationship between personalisation and behavioural loyalty. Thus, overall, this implies privacy concerns do not moderate the personalisation-loyalty relationship. Customers' level of privacy concern wouldn't impact their attitude and behaviour in relation to personalisation.

The results were unexpected given the grounding of Reactance Theory in literature as well as the study by Xinyu et al. (2021) covered in literature which asserted that privacy concerns negatively moderate the relationship between personalisation and loyalty. A possible reason for this lies in the cultural backgrounds and industry as Xinyu et al. (2021) noted the construct of privacy concerns will have different meaning for different cultural contexts. Reactance Theory also says too much personalisation may erode loyalty given privacy concerns (White, Zahay, Thorbjørnsen, & Shavitt, 2008). The phrase too much is not well defined could be that in the customers' perception there isn't too much personalisation happening.

Table 6 in Chapter 5 also showed there were no strong assertions from the respondents in as far as personalisation questions were concerned, thus different learnings would have to be drawn in different contexts.

However, the study revealed new insights through indirect results in relation to the privacy importance (PI) construct which was found to have a moderating effect on the personalisation-attitudinal loyalty relationship and moderation was positive as seen in Table 20 of Chapter 5. Thus, when customers have positive attitudinal loyalty which this research study has demonstrated to influence behavioural loyalty, the

behavioural loyalty would be influenced more when privacy importance is emphasized. This is in line with Xinyu et al. (2021) who articulated trust plays an important role in ensuring personalisation influences the customer particularly in situations where customers have low privacy concerns.

Therefore, a recommendation for business is privacy importance should be emphasized for the customers by demonstrating compliance to the regulations such as POPIA and GDPR. The regulatory landscape around privacy requires business to comply with specified standards with regards to the use of customer personal information. Thus, businesses should invest in initiatives that drive compliance to these regulations across the board. The benefits will not only be regulatory compliance but may translate to creating stronger attitudinal loyalty for customers that are targeted with personalised products. Thus, although the hypothesis stipulated in the original model is not accepted, learning has emerged on the latent construct of privacy importance which presents an opportunity for future research as well.

6.5.1 Conclusion on Research Question 2

RQ2a: What is the relationship between personalisation and customer loyalty (attitudinal and behavioural)?

Key findings of this research study in context of the relationship between personalisation and customer loyalty (attitudinal and behavioural) revealed customers who get personalised products from a business may consequently display positive attitudes and behaviours towards the business. This existence of a positive, direct relationship between personalisation and the categories of customer loyalty supported previous studies. The findings of this research study have therefore contributed to further understanding of the influence that personalisation has on customer loyalty.

Examining the strengths of the relationships revealed that personalisation and attitudinal loyalty have a stronger relationship as compared to personalisation and behavioural loyalty. Whilst the research question 1 context revealed a statistically

significant relationship between attitudinal loyalty and behavioural loyalty, it did not provide specificity in terms of the tool to use in pursuit of attitudinal loyalty. In light of the findings in the research question 2 context, it is recommended that businesses in their efforts to improve attitudinal loyalty of their customers should use personalisation as a tool which may then ultimately influence behavioural loyalty both directly and indirectly via attitudinal loyalty.

RQ2b: **What is the moderation effect of privacy concerns on the personalisation-loyalty (attitudinal and behavioural) relationship?**

In the context of the moderation effect of privacy concerns on the relationship between personalisation and attitudinal loyalty as well as between personalisation and behavioural loyalty, surprising results were found that privacy concerns moderate none of the relationships. Where attitudinal loyalty is influencing behavioural loyalty, the emergence of customer privacy concerns influences that position. These findings contrasted previous empirical studies that had found privacy concerns negatively moderate the relationship between personalisation and customer loyalty. However, these findings would need to be examined in different contexts as it has been noted in literature that privacy concerns vary from one culture to the next and are influenced by context. The mobile telecommunications industry may have not necessarily presented a context where privacy concerns are an issue.

The theoretical backing of the moderation of privacy concerns on the relationship between personalisation and customer loyalty as positioned in Reactance Theory did not provide a guideline as to a what level personalisation is deemed “too much” such that it would lead to reactance. It may have been the mobile telecommunications context in South Africa does not present “too much” personalisation for reactance to take cause.

The insights however, revealed further important findings though not captured in the research study’s original model. A new construct derived in the research study, privacy importance, was found to have a positive moderating effect on the relationship between personalisation and attitudinal loyalty. Thus, this provided important learnings for both research and business. Further research would have to investigate whether or not the moderating capability of privacy importance on the

relationship between personalisation and attitudinal loyalty is influenced by whether or not the business of interest has privacy protection practices prioritised.

The key findings thus were that businesses need not be concerned about customers privacy concerns in relation how these may influence the relationship between attitudes and behaviour. However, importantly, regulation requires protection of privacy as constituted in the likes of GDPR and POPIA. Thus, the prioritisation of protection of privacy practices by businesses still becomes important though not as a direct finding of this study.

6.6 Research Question 3 Discussion

RQ3: What is the moderation effect of personalisation on the attitudinal-behavioural loyalty relationship?

The third research question sought to explain the moderation effect of personalisation on the relationship between attitudinal loyalty and behavioural loyalty via the hypothesis:

- H3 – Personalisation has a significant moderation effect on the relationship between customers level of attitudinal and behavioural loyalty

A significant moderation effect of personalisation on the relationship between attitudinal loyalty and behavioural loyalty was not present. This is evident in Table 23 of Chapter 5 where the addition of personalisation through HMR did not lead to significant change in R^2 that explains the variability of behavioural loyalty captured by attitudinal loyalty. Thus, once customer attitudinal loyalty is present and its influence on behavioural loyalty has been achieved, personalisation will not improve that influence.

Literature that was reviewed did not explicitly express moderation effect of personalisation on the relationship between attitudinal loyalty and behavioural loyalty. However, based on the findings by Cossío-Silva et al. (2016) and Saini & Singh (2020) covered in literature on the existence of a relationship between

attitudinal loyalty and behavioural loyalty as well as findings by Ball et al. (2006) and Shanahan et al. (2019) on the existence of a direct relationship between personalisation and loyalty, this research study had sought to explore further insights around the relationships involving personalisation and loyalty. The insights revealed are rather new given previous literature reviewed has not explored the moderation of personalisation on attitudinal-behavioural loyalty relationship and that moderation has been found to not exist.

This is an interesting finding given this research study had first established that when customers have positive attitudes towards a business, their behaviour is likely to be influenced leading to behavioural loyalty. Secondly, the research study found personalisation directly influenced customer attitudes in a positive way implying where personalisation is used in marketing, it may lead to attitudinal loyalty which may ultimately lead to behavioural loyalty as per hypothesis 1.

Hypothesis 3 however, found where a relationship has been achieved between attitude and behaviour, personalisation will not influence that relationship. Thus, a recommendation for business is personalisation as a marketing strategy should be prioritised for customers who have lower attitudinal loyalty to try and directly influence attitudinal loyalty. This consideration is important given businesses are normally faced with limited resources and budgets thus being able to prioritise leads is critical. The learnings of this research study highlight that focus should be on low attitudinal loyalty customers first by implementing personalisation strategies that may influence their attitudes directly through which the behaviour may also be influenced. Thus, though personalisation did not moderate the relationship between attitudinal loyalty and behavioural loyalty, it may well be a supportive tool to maintain a strong attitude-behaviour bond for customers who already display positive attitudes.

6.6.1 Conclusion on Research Question 3

The research study concluded personalisation does not moderate the relationship between attitudinal loyalty and behavioural loyalty. Thus, where attitudinal loyalty has established an influence on customer behaviour, personalisation may not strengthen or weaken than influence. This insight can provide an understanding into how to

position personalisation as a strategic tool for businesses. The priority should be on using personalisation to directly influence attitudinal loyalty as it had already been shown in Section 6.4. This would indirectly then influence behavioural loyalty through attitudinal loyalty. Directly as well, benefits towards behavioural loyalty may emerge.

6.7 Research Question 4 Discussion

What is the relationship between privacy concerns and customer loyalty (attitudinal and behavioural)?

The fourth and last research question in the research study sought to explain the direct relationship between privacy concerns and attitudinal loyalty as well as between privacy concerns and behavioural loyalty through the following hypotheses:

- H4a – There is a direct, negative relationship between the level of privacy concerns and level of attitudinal customer loyalty
- H4b – There is a direct, negative relationship between the level of privacy concerns and level of behavioural customer loyalty

The privacy concerns construct was factorised into two latent factors, PC2 and PI as already outlined in Chapter 5 (Table 15). Thus, to test relationships involving privacy concerns, an assessment was made in terms of PC2 and PI respectively and then making a conclusion based on the results. As per Section 5.8.5, the research study found PC2 and PI did not have a significant direct, negative relationship with attitudinal loyalty. Thus, privacy concerns had no significant direct negative relationship with attitudinal loyalty leading to lack of support for hypothesis 4a. This meant customers who are concerned about their privacy in relation to a business may not exhibit negative attitudes towards that business. Similarly, it was found PC2 and PI did not have a significant direct, negative relationship with behavioural loyalty and thus there was no evidence to support hypothesis 4b. Customer who are concerned about their privacy in relation to a business may not necessarily reduce their purchases from that business.

The absence of a direct, negative relationship between privacy concerns and attitudinal loyalty as well as between privacy concerns and behavioural loyalty was

unexpected. Reactance Theory positioned in literature had argued privacy concerns heighten reactance from customers implying the more customers have privacy concerns, the more they show behaviour that is unfavourable for businesses (Martin & Murphy, 2017). It was on this basis the research study had deduced to test for relationship between privacy concerns and customer loyalty (attitudinal and behavioural). There was no literature found that sought to explain the direct relationship between privacy concerns and customer loyalty. For example, Xinyu et al. (2021) studied the influence of privacy concerns on customer loyalty via the moderation effect of privacy concerns on the relationship between personalisation and customer loyalty. As already noted in Section 6.3.2, privacy concerns are a construct that could mean different things for different contexts such as cultural backgrounds and industry and this could be the possible reason for the lack of relationship between privacy concerns and loyalty. More studies in other contexts would unpack further insights for the business and research fraternity.

Thus, though the negative relationship between privacy concerns and customer loyalty is not supported, privacy is still an important consideration for businesses given the regulatory requirements. For example, in South Africa, POPIA requires businesses to adhere to certain privacy requirements governing the use of customer personal data. Therefore, it is still recommended for business to prioritise their privacy and security agenda in order to comply with POPIA irrespective of the existence or not of an influence of privacy concerns on customer loyalty. However, based on this research study and its constructs, businesses should not expect that less customer privacy concerns would lead to customer loyalty, both from an attitudinal and behavioural view point.

An interesting additional finding of the research study was with regards to the latent privacy importance construct which was found to have a statistically significant relationship with attitudinal loyalty although not in the original model positioned in Chapter 3. This can be seen in Table 25 of Chapter 5 where a positive, significant relationship was found to exist between privacy importance (PI) and attitudinal loyalty based on Spearman's rho. Thus, customers who find privacy an important subject to them would display positive attitudes towards a business. What the research study fails to reveal however, is whether this relationship is influenced by presence or lack thereof of strong privacy in business. Thus, research would need to explore if,

through emphasis of privacy by business such as adherence to POPIA in the South African context, customers who find privacy important may exhibit any more or less attitudinal loyalty towards the business.

6.7.1 Conclusion on Research Question 4

The research study concluded privacy concerns do not have a direct relationship with attitudinal loyalty as well as with behavioural loyalty. Thus, when privacy concerns arise, they may not directly influence customer attitudes and behaviour.

Importantly, privacy importance as a latent construct of privacy concerns was found to have a direct, positive relationship with attitudinal loyalty. This insight can provide motivation for businesses to ensure the use of customer information is appropriate despite the assertion that privacy concerns do not influence attitudes, privacy importance does.

6.8 Chapter Summary

This chapter covered the results discussion based on the analysis of the data presented in Chapter 5 in response to the hypotheses presented in Chapter 3. The results have been presented in context of the literature that was presented in Chapter 2. Few deviations from literature findings have been noted, particularly the insignificance of the moderation effect of privacy concerns on the relationship between personalisation and customer loyalty from an attitudinal and behavioural viewpoint. Other relationships have been confirmed in line with literature articulations particularly the relationship between attitudinal loyalty and behavioural loyalty as well as the relationship between personalisation and customer loyalty (attitudinal and behavioural). A new latent construct than was defined as privacy importance has been found to influence attitudinal loyalty. Business considerations were presented. The next chapter concludes with the implications as well as closing recommendations for both business and research.

7 CHAPTER 7: CONCLUSION

7.1 Introduction

Chapter 1 one presented the context of the research study which was the mobile telecommunications industry in South Africa. Insights were provided around the digital era which is leading to transformation in marketing practices across industries as fueled by Big Data. The South African mobile telecommunications industry was found to be one such industry that is transforming marketing practices through personalisation. Given the importance of achieving customer loyalty in a saturated mobile telecommunications industry where switching costs are low, this research study focused on:

"Product personalisation in the era of big data: the influence on customer loyalty"

The purpose of the research study was to empirically explain the relationship between product personalisation and customer loyalty (attitudinal and behavioral) as well as explaining the existence or not of the moderation effect of privacy concerns on the relationship between personalisation and customer loyalty (attitudinal and behavioral) in the mobile telecommunications industry in South Africa.

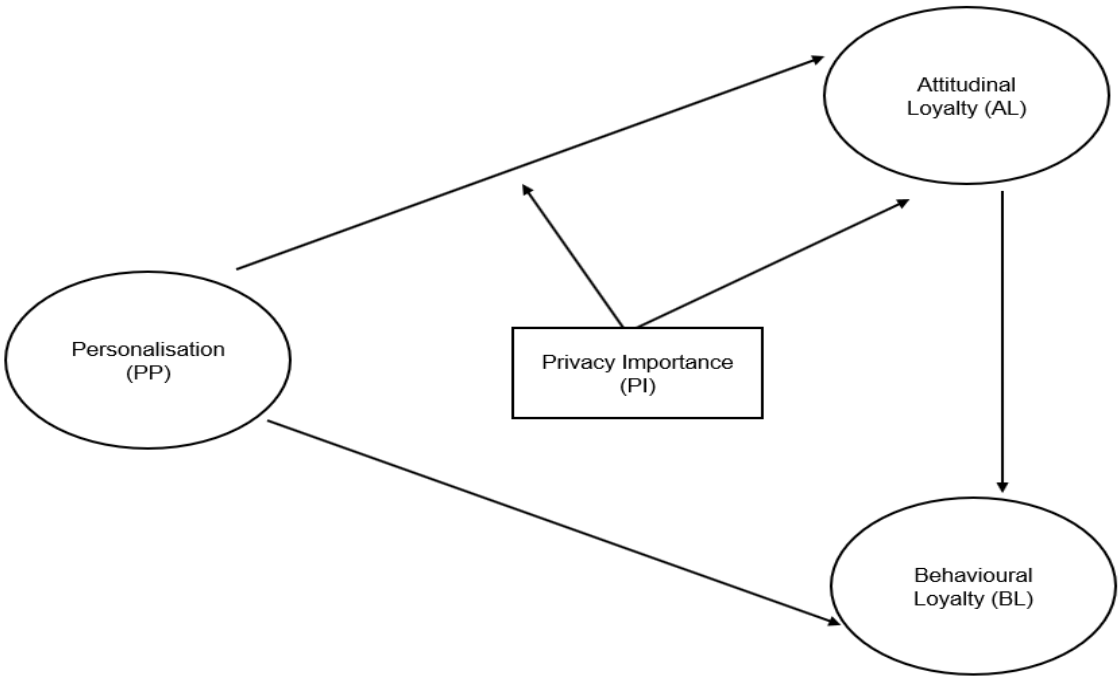
The main objectives of the research study were to: understand whether there is a relationship between personalisation and customer loyalty (attitudinal and behavioural) and how that relationship is moderated by privacy concerns; explain the direct relationship between privacy concerns and customer loyalty (attitudinal and behavioural); explain the direct relationship between attitudinal loyalty and behavioural loyalty and explain the moderating effect of personalisation on the relationship between attitudinal loyalty and behavioural loyalty. The research study met the objectives by commissioning online surveys targeted at mobile telecommunications customers in South Africa who are above the age of 18 and buy personalised products from the network providers. Hypotheses tests then followed using Pearson's correlation as well as Spearman's rho and hierarchical multiple regression.

This chapter offers conclusions based on key highlights of the findings from the hypotheses of this research study as discussed in Chapter 6. It starts by reformulating the model based on the research study's findings. This is followed by key findings as well as the implications of the research study's results for both academia and business. It offers recommendations for both business and academia. The chapter concludes with limitations of the research study.

7.2 Model Reformulation

The findings presented in Chapter 5 and discussed in Chapter 6 provide for a reformulation of the model that was proposed in Chapter 3 based on the literature discussed in Chapter 2. AL was found to have a direct positive relationship with BL. PP influenced AL as well as BL. The PC's latent construct PI was found to influence AL as well as having a moderating effect on the PP-AL relationship. The reformulated model is presented in Figure 8 below.

Figure 8: Reformulated model



7.3 Key Findings and Implications

7.3.1 Theoretical Implications

The findings of this research study add to the existing knowledge with regards to the relationship between personalisation and customer loyalty by explaining relationships based on the categories of customer loyalty i.e., attitudinal loyalty and behavioral loyalty. This provided key insights as extant studies had mostly focused on the relationship between personalisation and customer loyalty holistically (Ball, Coelho, & Vilares, 2006; Shanahan, Tran, & Taylor, 2019) . Thus, the importance of personalisation as grounded in Relationship Marketing Theory has been demonstrated by this research study.

The research study revealed insights into the relationship between personalisation and customer loyalty from an attitudinal loyalty and behavioral loyalty perspective as grounded in the research study's main objective and purpose where a positive, direct relationship had been found to exist between personalisation and attitudinal loyalty as well as between personalisation and behavioral loyalty.

Privacy concerns were not found to be moderating the relationship between personalisation and attitudinal loyalty as well as between personalisation and behavioral loyalty. Extant research however, had articulated the existence of a moderation effect of privacy concerns on the relationship between personalisation and customer loyalty (Xinyu, Jian, & Hongyan, 2021). Reactance was also not observed in the research study as asserted in extant research that too much personalisation may lead to reactance through privacy concerns (White, Zahay, Thorbjørnsen, & Shavitt, 2008). This implies that emergence of privacy concerns when personalisation is being used as a marketing tool will not impact customer attitudes and behaviour.

The research study however, discovered two constructs for privacy concerns being privacy importance and privacy concern. This is a direct contribution to academia, in particular, to the privacy literature. The research study further revealed privacy importance moderates the relationship between personalisation and attitudinal loyalty. The implication is therefore, when the importance of privacy is increased for

customers and personalisation and being used for marketing, it can strengthen attitudinal loyalty.

The categories of customer loyalty namely attitudinal loyalty and behavioral loyalty, have been found to have a direct positive relationship and this supported extant research which found the existence of a direct, positive relationship between attitudinal loyalty and behavioral loyalty (Cossío-Silva, Revilla-Camacho, Vega-Vázquez, & Palacios-Florencio, 2016). This implied when customers have positive attitudes towards a business, they can increase their purchases from the business through repeat purchases. Thus, this research study added to the articulations within the loyalty research from a mobile telecommunications context.

The research study further provided insights into the absence of a direct relationship between privacy concerns and attitudinal loyalty as well as between privacy concerns and behavioral loyalty. This implied when privacy concerns arise, they may not influence customers' attitudes as well as customers' behaviors.

This was unexpected as per extant research grounded in Reactance Theory which says that privacy concerns may influence customer loyalty (Martin & Murphy, 2017). However, further insight revealed by the research study was the latent privacy importance construct can directly influence attitudinal loyalty. This is another direct contribution the research study makes to academia and it implies that for customers who find privacy more important, their attitude towards a business can be strengthened.

Furthermore, personalisation was found to not have a moderating effect on the relationship between attitudinal loyalty and behavioral loyalty. This finding has not been widely articulated in extant research as the extant research has mostly focused on the direct relationship between personalisation and other constructs (Ball, Coelho, & Vilares, 2006; Shanahan, Tran, & Taylor, 2019) . Thus, this finding implied when personalisation is adopted as a marketing tool for customers with set attitudes, it may not influence behavioral loyalty. The research study therefore provided new insights to academia in the context of relationship marketing and personalisation.

7.3.2 Implications for Business

Marketing

The research study provides further implications for marketing personnel, in particular, direct marketing and customer relationship/value management.

Firstly, marketing should focus efforts on achieving attitudinal loyalty from customers through marketing strategies that strengthen the brand resonance as well as strengthen the attitudes of customers towards the business. The research study revealed behavioral loyalty can be achieved when customers have positive attitudes towards the business. Behavioural loyalty therefore, translates into revenue through repeat purchases thus increasing the lifetime value of the customers (Umashankar, Bhagwat, & Kumar, 2017). The findings of this research study revealed marketing personnel can achieve revenue growth from customers by focusing on marketing and customer experience initiatives that will improve the attitudes of their customers towards the business.

Secondly, marketing should scale on relationship marketing through personalisation. Personalisation has been shown to positively influence customer attitudinal loyalty as well as behavioral loyalty. In particular, the personalisation influence on attitudinal loyalty had been found to be stronger than the influence on behavioral loyalty. Therefore, as personalisation is adopted at scale, it can influence customer attitudes which have been shown to influence behavioral loyalty.

It has been argued with the increasing choices as well as lower switching costs, businesses face challenges of achieving customer loyalty (Narvanen, Kuusela, Paavola, & Sirola, 2020; Watson IV, Beck, Henderson, & Palmatier, 2015).The finding of this research study can therefore help marketing personnel in the future in the formulation of strategies to both grow revenue as well as strengthening customers attitudes towards their business, thus achieving customer loyalty.

IT and Governance

Thirdly, the importance of privacy should be strengthened by IT and governance processes across the customer touchpoints. The findings of this research study revealed when privacy importance is strengthened and personalisation is used for marketing, it can lead to improvement of customers' attitudes towards the business. Further to this, privacy importance was found to directly influence attitudinal loyalty in a positive way. Thus, these findings can help businesses achieve positive attitudes from customers as they adopt personalisation strategies by strengthening privacy importance. Privacy importance cannot be understated given the regulations across territories that emphasize data privacy. In the South African context in particular, POPIA stipulates guidelines along which businesses should manage customer personal information (Deloitte, 2021). Thus, given businesses in South Africa are required to comply with POPIA, the findings of this research study should provide motivation to IT teams that when privacy importance is prioritized, it can translate to attitudinal loyalty. The finding can further act as an input into a business case thus helping IT and governance teams justify the investments needed to be made into strengthening privacy controls.

Customers want to be understood, with their products and services tailored according to their needs as per the research study findings. The research study has further noted privacy concerns did not dominate the attitudes and behaviors of customers in the context of personalisation. Importantly though, privacy importance emerged to be influencing the attitudes of customers. This highlights a critical finding of the research study in that customers assert to the use of their personal data for personalisation of products and services as long as their personal information is not used for unintended purposes since privacy is important for them. Therefore, this articulation of the finding should help IT teams in their support to marketing teams to ensure the data being used for personalisation is the right data for its purpose. Also, the positioning of marketing offers to customers should ensure that privacy is maintained given its importance to customers as this may help strengthen positive attitudes from customers.

7.4 Limitations of the Study and Suggestions for Future Research

- Firstly, the conceptual model in this research study specifies the interrelationships between personalisation, privacy concerns, attitudinal loyalty and customer loyalty. Given the cross-sectional survey the study adopted, causality between the variables could not be determined. Therefore, future research should consider an experiment as a strategy that would provide insights into the causal links amongst the constructs.

- Secondly, the mobile telecommunications industry in South Africa was the focus of the current research study due to the adoption of personalisation in the industry. The extent to which customers can alter attitudes and behaviour in other contexts is questionable thus extending the context of the research study would be ideal. Careful consideration should therefore be taken into account when generalising this research study to other contexts i.e., industries and countries. The construct of privacy could mean different things in different contexts and backgrounds (Xinyu, Jian, & Hongyan, 2021). Also as noted by Cossío-Silva et al. (2016), the influence of personalisation on loyalty may be different in other contexts. As this research study was done in the South African mobile telecommunications context, this raises caution when the privacy insights are being generalised from this study to other contexts. Therefore, as a suggestion for future research, samples from different countries and industries should be collected to provide more generalization of this research study and other extant research in line with personalisation and loyalty.

- Thirdly, almost 80% of the respondents were female thus highlighting the research study results are biased towards female. This is not representative of the demographics of South Africa where the gender split is almost 50/50 (Statista, 2021) . Also, more than 70% of the respondents had either a degree/diploma or postgraduate whilst 72% were in full time employment, 68% between the age of 25 and 35. These statistics were also not representative of South Africa's demographics (Statista,2021). This could be a result of the purposive sampling the research study employed to reach out

to the researcher's network. Given the research study was grounded on Reactance Theory and Relationship Marketing Theory which may be influenced by demographics, this may have affected the relationships between the constructs (Woller, Buboltz, & Loveland, 2007; Ranganathan, Seo, & Babad, 2006). Therefore, future research studies should consider expanding the sample to be more representative of the South African demographics to provide further validations of the generalizations from this research study.

- Fourthly, the research study discovered privacy importance influences attitudinal loyalty. What has not been uncovered by the research study is the role adherence to implementation of regulatory standards (POPIA, GDPR) by business plays on the relationship between privacy importance and attitudinal loyalty. For example, does customer awareness of the business's compliance to POPIA strengthen this relationship? Thus, future research studies could consider investigating how the level of compliance to customer privacy standards by business moderate the relationship between privacy importance and attitudinal loyalty.

- Finally, the research study showed personalisation influences attitudinal loyalty and behavioural loyalty. However, personalisation can be deployed via different strategies for relationship marketing such as USSD, Application and Website (Zanker, Rookb, & Jannach, 2019). Also, personalisation has different dimensions which this research study has not considered (Xinyu, Jian, & Hongyan, 2021). Therefore, future research studies should consider expanding personalisation across its dimensions and explore the influence the different dimensions have on loyalty through privacy concerns. Similarly, future research studies should also explore how the different strategies of personalisation influence customer loyalty as well as privacy concerns.

7.5 Conclusion

This study enriched the understanding related to the interrelations between personalisation, attitudinal loyalty, behavioral loyalty and privacy concerns using Relationship Marketing Theory, Reactance Theory and the Technology in Marketing

Framework as theoretical groundings. This provides contribution to the loyalty and privacy literature. The research study further demonstrated the validation and reformulation of the conceptual model proposed for the research study.

Attitudinal loyalty had been found to influence behavioral loyalty. Thus, marketing can focus efforts on improving attitudinal loyalty of customers to drive a positive improvement in customer behavioral loyalty. Key constructs namely personalisation and attitudinal loyalty, have been found to have a direct, positive relationship.

Similarly, personalisation and behavioral loyalty have been found to have a direct, positive relationship. Thus, personalisation, if prioritized and scaled, should help marketing teams drive both attitudinal and behavioral benefits from customers. Privacy concerns were not found to have moderating capability on the relationship between personalisation and attitudinal loyalty as well as between personalisation and behavioral loyalty. Similarly, privacy concerns were not found to directly influence attitudinal loyalty and behavioral loyalty. Importantly though, the research study found privacy importance moderates the relationship between personalisation and attitudinal loyalty positively. On the same note, privacy importance was found to directly influence attitudinal loyalty. Based on researcher's knowledge and the research study conducted, this finding is one of its kind in the context of privacy and loyalty. Therefore, managerial IT and governance decisions around privacy should ensure that regardless of the customer acceptance to the use of their data for personalisation, privacy importance is still emphasized and filters through the customer touch points. Not only does this deliver attitudinal loyalty benefits, but it should serve as further motivation for compliance to regulatory requirements around the use of customer personal data such as POPIA and GDPR.

Another articulation of its kind this research study made was personalisation does not moderate the relationship between attitudinal loyalty and behavioral loyalty. Therefore, marketing should adopt personalisation for direct influence, particularly on customers' attitudes.

References

Agarwal, R., & Dhar, V. (2014). Big Data, Data Science, and Analytics: The Opportunity and Challenge for IS Research. *Information Systems Research, 25*(3), 443-448.

Aguirre, E., Mahr, D., Grewal, D., de Ruyter, K., & Wetzels, M. (2015). Unravelling the personalization paradox: The effect of information collection and trust-building strategies on online advertisement effectiveness. *Journal of Retailing*, 34-49.

Aksoy, N. C., Kabadayi, E. T., Yilmaz, C., & Alan, A. K. (2021). A typology of personalisation practices in marketing in the digital age. *Journal of Marketing Management, 37*(11-12), 1091-1122.

AnalyticsSteps. (2020, March 11). *Blogs*. Retrieved from AnalyticsSteps Web site: https://www.analyticssteps.com/blogs/top-10-big-data-technologies-2020

Bahrami, F., Kanaani, F., Turkina, E., Moin, M. S., & Shahbazi, M. (2021). Key Challenges in Big Data Startups: An Exploratory Study in Iran. *Iranian Journal of Management Studies, 14*(2), 273-289.

Ball, D., Coelho, P. S., & Vilares, M. J. (2006). Service personalization and loyalty. *Journal of services marketing*.

Bell, E., Bryman, A., & Harley, B. (2018). *Business Research Methods.* Oxford University Press.

Berchtold, A. (2019). Treatment and reporting of item-level missing data in social science research. *International Journal of Social Research Methodology*, 431-439.

Bojei, J., Julian, C. C., Wel, C. A., & Ahmed, Z. U. (2013). The empirical link between relationship marketing tools and consumer retention in retail marketing. *Journal of Consumer Behaviour, 12*, 171-181.

Boudet, J., Gregg, B., Rathje, K., Stein, E., & Vollhardt, K. (2019). *The future of personalization—and how to get ready for it.* McKinsey&Co.

BusinessTech. (2019, May 05). *News:Mobile*. Retrieved from Business Tech Web site: https://businesstech.co.za/news/mobile/319378/mobile-market-share-2019-vodacom-vs-mtn-vs-cell-c-vs-telkom/

BusinessTech. (2020, 11 03). *News:telecommunications*. Retrieved from Business Tech Web site:

https://businesstech.co.za/news/telecommunications/445484/telkom-solidly-third-biggest-mobile-operator-in-south-africa/

Chen, X., Jian, S., & Hongyan, L. (2021). Balancing web personalization and consumer privacy concerns:Mechanisms of consumer trust and reactance. *Journal of Consumer Behaviour*.

ChiefMarketer. (2018, December 12). Retrieved from ChiefMarketer Web site: https://www.chiefmarketer.com/data-privacy-concerns-on-rise-report/

Chintagunta, P., Hanssens, D. M., & Hauser, J. R. (2016). Marketing Science and Big Data. *Marketing Science*, 341-342.

Clee, M. A., & Wicklund, R. A. (1980). Consumer Behavior and Psychological Reactance. *Journal of Consumer Research, 6*(4), 389-405.

Corbetta, P. (2003). *In Social research : Theory,methods and techniques.* SAGE Publications.

Cossío-Silva, F.-J., Revilla-Camacho, M.-Á., Vega-Vázquez, M., & Palacios-Florencio, B. (2016). Value co-creation and customer loyalty. *Journal of Business Research*, 1621-1625.

Davenport, T., Guha, A., Dhruv, G., & Bressgott, T. (2020). How artificial intelligence will change the future of marketing. *Journal of the Academy of Marketing Science*, 24-42.

Davenport, T., Guha, A., Grewal, D., & Bressgott, T. (2020). How artificial intelligence will change the future of marketing. *Journal of the Academy of Marketing Science*(48), 24-42.

De Luca1, L. M., Herhausen, D., Troilo, G., & Rossi, A. (2021). How and when do big data investments pay off? The role of marketing affordances and service innovation. *Journal of the Academy of Marketing Science, 49*, 790-810.

Dekimpe, M. G. (2020). Retaining and retailing research in age of big data analytics. *International Journal of Research in Marketing*, 3-14.

Deloitte. (2017). Retrieved from Deloitte Web site: https://www2.deloitte.com/content/dam/Deloitte/za/Documents/technology-media-telecommunications/Deloitte-Global-Mobile-Report-Mobile-V3.pdf

Deloitte. (2021). *Pages:risk:articles.* Retrieved from Deloitte Web site: https://www2.deloitte.com/za/en/pages/risk/articles/popia-go-live.html

Deloitte. (n.d.). *Risks:topics:gdpr*. Retrieved from Deloitte Web site: https://www2.deloitte.com/ch/en/pages/risk/articles/the-gdpr-areas-of-attention-and-practical-guidance.html

Emma, B., Bryman, A., & Harley, B. (2018). *Business research methods.* Oxford university press.

Felix, R. (2014). Multi-brand loyalty: when one brand is not enough. *Qualitative Market Research: An International Journal, 17*(4), 461-480.

Fink, A., & Litwin, M. S. (1995). *How to measure survey reliability and validity.* Sage.

Flavian, C., & Guinalıu, M. (2006). Consumer trust, perceived security and privacy policy Three basic elements of loyalty to a web site. *Industrial management & data Systems.*

Forbes. (2020, December 14). *Sites*. Retrieved from Forbes Web site: https://www.forbes.com/sites/forbestechcouncil/2020/12/14/the-rising-concern-around-consumer-data-and-privacy/?sh=2a8622e2487e

Foxman, E. R., & Kilcoyne, P. (1993). Information Technology, Marketing Practice, and Consumer Privacy: Ethical Issues. *Journal of Public Policy & Marketing, 12*(1), 106-119.

Fulgoni, G. (2013). Big Data: Friend or Foe of Digital Advertising? Five Ways Marketers Should Use Digital Big Data to Their Advantage. *Journal of Advertising Research, 53*(4), 372-376.

Gartner. (n.d.). *Information Technology Glosary*. Retrieved from Gartner Web site: https://www.gartner.com/en/information-technology/glossary/big-data

George, G., Haas, M. R., & Pentland, A. (2014). *Academy of Management Journal, 57*(2), 321-326.

Gremler, D. D., Van Vaerenbergh, Y., Brüggen, E. C., & Gwinner, K. P. (2020). Understanding and managing customer relational benefits in services: a meta analysis. *Journal of the Academy of Marketing Science, 48*(3), 565-583.

Grewal, D., Hulland, J., Kopalle, P. K., & Karahanna, E. (2019). The future of technology and marketing: a multidisciplinary perspective. *Journal of the Academy of Marketing Science*, 1-8.

Günther, W. A., Mehrizi, M. H., Huysman, M., & Feldberg, F. (2017). Debating big data: A literature review on realizing value from big data. *Journal of Strategic Information Systems*, 191-209.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis: Pearson new international edition.* Essex: Pearson Education Limited.

Hair, J. F., Page, M., & Brunsveld, N. (2019). *Esentials of business research methods.* Routledge.

Kim, J. J., Steinhoff, L., & Palmatier, R. W. (2021). An emerging theory of loyalty program dynamics. *Journal of the Academy of Marketing Science, 49*(1), 71-95.

Kopalle, P. K., & Lehmann, D. R. (2021). Big Data, Marketing Analytics, and Public Policy: Implications for Health Care. *Journal of Public Policy & Marketing, 40*(4), 453-456.

Kshetri, N. (2014). Big data'simpactonprivacy,securityandconsumerwelfare. *TelecommunicationsPolicy, 38*, 1134-1145.

Labeaga, J. M., Lado, N., & Martos, M. (2007). Behavioural loyalty towards store brands. *Journal of Retailing and consumer services, 14*(5), 347-356.

Lafley, A., & Martin, R. (2017, January). Customer Loyalty Is Overrated. *Harvard Business Review*, p. 7.

Malhotra, N. K. (2010). *Marketing Research: An applied orientation .6th global ed.* Upper Saddle Rive,NJ.

Malhotra, N. K., Kim, S. S., & Agarwal, J. (2004). Internet Users' Information Privacy Concerns (IUIPC): The Construct, the Scale, and a Causal Model. *Information Systems Research, 15*(4), 336-355.

Marchand, A., & Marxb, P. (2020). Automated Product Recommendations with Preference-Based Explanations. *Journal of Retailing, 96*(3), 328-343.

Maxwell, S. E., Delaney, H. D., & Kelley, K. (2017). *Designing experiments and analyzing data: A model comparison perspective.* Routledge.

Martin, K. D., & Murphy, P. E. (2017). The role of data privacy in marketing. *Journal of the Academy Marketing Science, 45*, 135-155.

McKinsey & Company. (2019, June 18). *Our Insights*. Retrieved from McKinsey & Company Web site: https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/the-future-of-personalization-and-how-to-get-ready-for-it

McKinsey&Company. (2019, November 7). *Our Insights*. Retrieved from McKinsey Web site: https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/consumer-data-privacy-and-personalization-at-scale

McKinsey&Company. (2020, April 27). *Our Insights*. Retrieved from McKinsey Web site: https://www.mckinsey.com/business-functions/risk/our-insights/the-consumer-data-opportunity-and-the-privacy-imperative#

McKinsey&Company. (2020, April 28). *Our Insights*. Retrieved from McKinsey Web site: https://www.mckinsey.com/industries/retail/our-insights/personalizing-the-customer-experience-driving-differentiation-in-retail

Morgan, B. (2020, February 18). Retrieved from Forbes Web site: https://www.forbes.com/sites/blakemorgan/2020/02/18/50-stats-showing-the-power-of-personalization/?sh=533378202a94

Morgan, R. M., & Hunt, S. D. (1994). The Commitment-Trust Theory of Relationship Marketing. *Journal of marketing, 58*(3), 20-38.

MTN. (n.d.). *Pages: MyMTN-Offers*. Retrieved from MTN Web site: https://www.mtn.co.za/Pages/MyMTN-Offers.aspx

MyBroadband. (2020, May 09). *News:Telecoms*. Retrieved from MyBroadband Web site: https://mybroadband.co.za/news/telecoms/347479-the-future-of-mobile-networks-in-south-africa.html

Narvanen, E., Kuusela, H., Paavola, H., & Sirola, N. (2020). A meaning-based framework for customer loyalty. *International Journal of Retain and Distribution Management*, 825-843.

Norberg, P. A., & Horne, D. R. (2014). Coping with information requests in marketing exchanges: an examination of pre-post affective control and behavioral coping. *Journal of the Academy Marketing Science, 42*, 415-429.

Oyatoye, E. O., Adebiyi, S. O., & Amole, B. B. (2015). Modeling the Switching Behavior of Multiple-SIM GSM Subscribers in Nigeria Using Markov Chain Analysis. *IUP Journal of Operations Management, 14*(1).

Pallant, J. (2013). *SPSS survival manual.* UK: McGraw-hill education.

Ranganathan, C., Seo, D., & Babad, Y. (2006). Switching behavior of mobile users: do users' relational investments and demographics matter? *European Journal of Information Systems, 15*(3), 269-276.

Sahni, N. S., Wheeler, C. S., & Pradeep, C. (2018). Personalisation in Email Marketing : The Role of Non-Informative Advertising Content. *Marketing Science*.

Saini, S., & Singh, J. (2020). A Link Between Attitudinal and Behavioral Loyalty of Service Customers. *Business Perspectives and Research, 8*(2), 205-215.

Saunders, M., & Lewis, P. (2018). *Doing Research in Business and Management.* United Kingdom: Pearson Education Limited.

Shammout, A. B. (2018). An empirical investigation of relational bonds on attitudinal and behavioral customer loyalty for Arabic luxury hotel customers. *International Journal of Hospitality & Tourism Administration*, 221-241.

Shanahan, T., Tran, T. P., & Taylor, E. C. (2019). Getting to know you: Social media personalization as a means of enhancing brand loyalty and perceived quality. *Journal of Retailing and Consumer Services, 47*, 57-65.

Shankar, V., Kalyanam, K., Setia, P., Golmohammadi, A., Tirunillai, S., Douglass, T., . . . Waddoups, R. (2021). How Technology is Changing Retail. *Journal of Retailing, 97*(1), 13-27.

Sharifi, S. S., & Esfidani, M. R. (2014). The impacts of relationship marketing on cognitive dissonance, satisfaction, and loyalty. The mediating role of trust and cognitive dissonance. *International Journal of Retail & Distribution Management, 42*(6), 553-575.

Song, Y. W., Lim, H. S., & Oh, J. (2021). “We think you may like this”: An investigation of electronic commerce personalization for privacy-conscious consumers. *Psychology & Marketing*.

Statista. (2021). *Statistics*. Retrieved from Statista Web site: https://www.statista.com/statistics/1074422/prepaid-vs-post-paid-mobile-cellular-voice-subscriptions-in-south-africa/

Statista. (2021). *Statistics*. Retrieved from Statista Web site: https://www.statista.com/statistics/1115589/distribution-of-educational-attainment-in-south-africa/

Taherdoost, H. (2016). Sampling Methods in Research Methodology; How to choose a sampling technique for research. *International Journal of Academic Research in Management*, 18-27.

Telkom. (n.d.). *Telkom for Me*. Retrieved from Telkom Web site: https://apps.telkom.co.za/today/shop/plan/monice/#!plan-detail-41246

Thode, H. C. (2002). *Testing for normality* (Vol. 164). CRC press.

Tong, S., Luo, X., & Xu, B. (2020). Personalized mobile marketing strategies. *Journal of the Academy of Marketing Science, 48*, 64-78.

Tran, T. P., van Solt, M., & Zemanek, J. E. (2020). How does personalization affect brand relationship in social commerce? A mediation perspective. *Journal of Consumer Marketing, 37*(5), 473-486.

Umashankar, N., Bhagwat, Y., & Kumar, V. (2017). Do loyal customers really pay more for services? *Journal of the Academy of Marketing Science, 45*, 807-826.

Van der Merwe, M. C. (2015). A comparison between switching intention and switching behaviour in the South African mobile telecommunication industry. *University of Pretoria*. Retrieved from https://repository.up.ac.za/handle/2263/53007

Vesanen, J. (2007). What is personalization? A conceptual framework. *European Journal of Marketing*.

Vlacic, B., Corbo, L., Costa e Silva, S., & Dabic, M. (2021). The evolving role of artificial intelligence in marketing: A review and research agenda. *Journal of Business Research, 128*, 187-203.

Vodacom. (2019, June 03). *Articles*. Retrieved from Vodacom now Web site: https://now.vodacom.co.za/article/these-data-deals-are-just4you

Vodacom. (n.d.). *Delivering on our strategy*. Retrieved from Vodacom Reports Web site: http://www.vodacom-reports.co.za/integrated-reports/ir-2017/best-technology.php

Walker, K. L., & Moran, N. (2019). Consumer Information for Data-Driven Decision Making: Teaching Socially Responsible Use of Data. *Journal of Marketing Education, 41*(2), 109-126.

Watson IV, G. F., Beck, J. T., Henderson, C. M., & Palmatier, R. W. (2015). Building, measuring, and profiting from customer loyalty. *Journal of the Academy of Marketing Science, 43*(6), 790-825.

Wedel, M., & Kannan, P. K. (2016). Marketing analytics for data-rich environments. *Journal of Marketing, 80*(6), 97-121.

Wegner, T. (2016). *Applied Business Statistics : Methods and Excel-based Applications* (4th ed.). Claremont: Juta and Company Ltd.

White, T. B., Zahay, D. L., Thorbjørnsen, H., & Shavitt, S. (2008). Getting too personal: Reactance to highly personalized email solicitations. *Marketing Letters*, 39-50.

Woller, K. M., Buboltz, W. C., & Loveland, J. M. (2007). Psychological reactance: Examination across age, ethnicity, and gender. *The American journal of psychology*, 15-24.

Wolter, J. S., Bock, D., Smith, J. S., & Cronin Jr, J. J. (2017). Creating Ultimate Customer Loyalty Through Loyalty Conviction and Customer-Company Identification. *Journal of Retailing, 93*(4), 458-476.

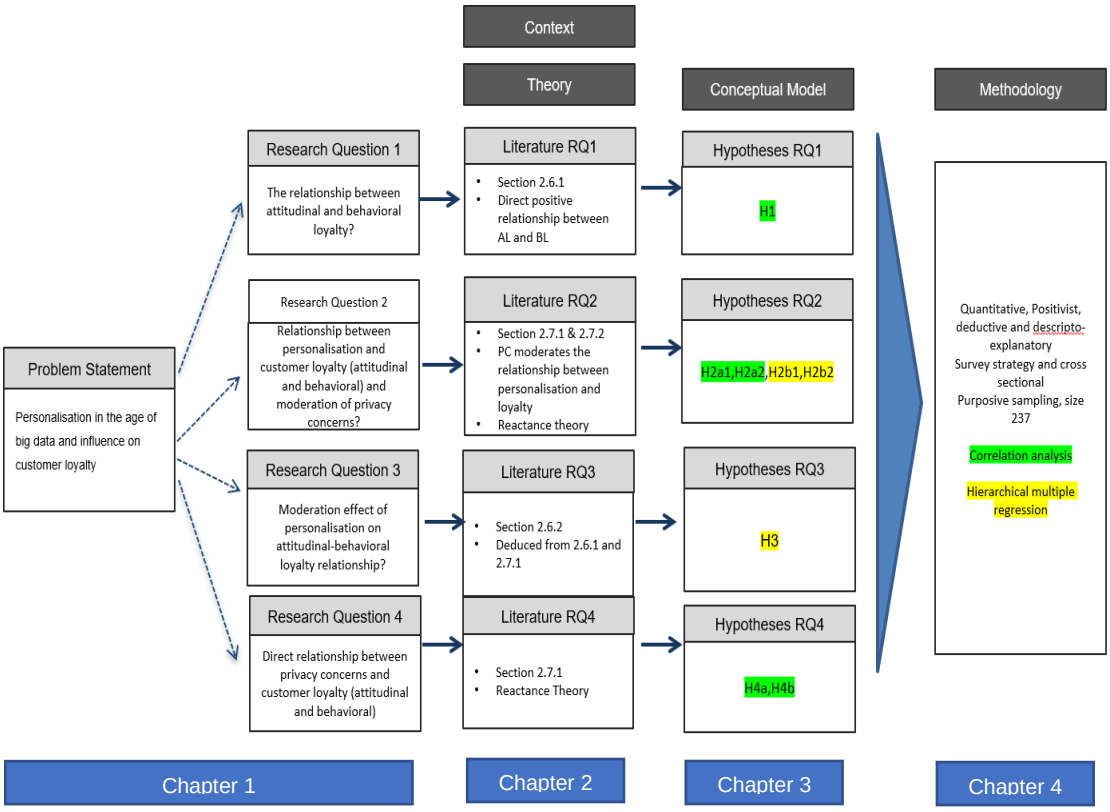
Xinyu, C., Jian, S., & Hongyan, L. (2021). Balancing web personalization and consumer privacy concerns: Mechanisms of consumer trust and reactance. *Journal of Consumer Behaviour* .

Zanker, M., Rookb, L., & Jannach, D. (2019). Measuring the impact of online personalisation: Past, present and future. *International Journal of Human-Computer Studies, 131*, 160-168.

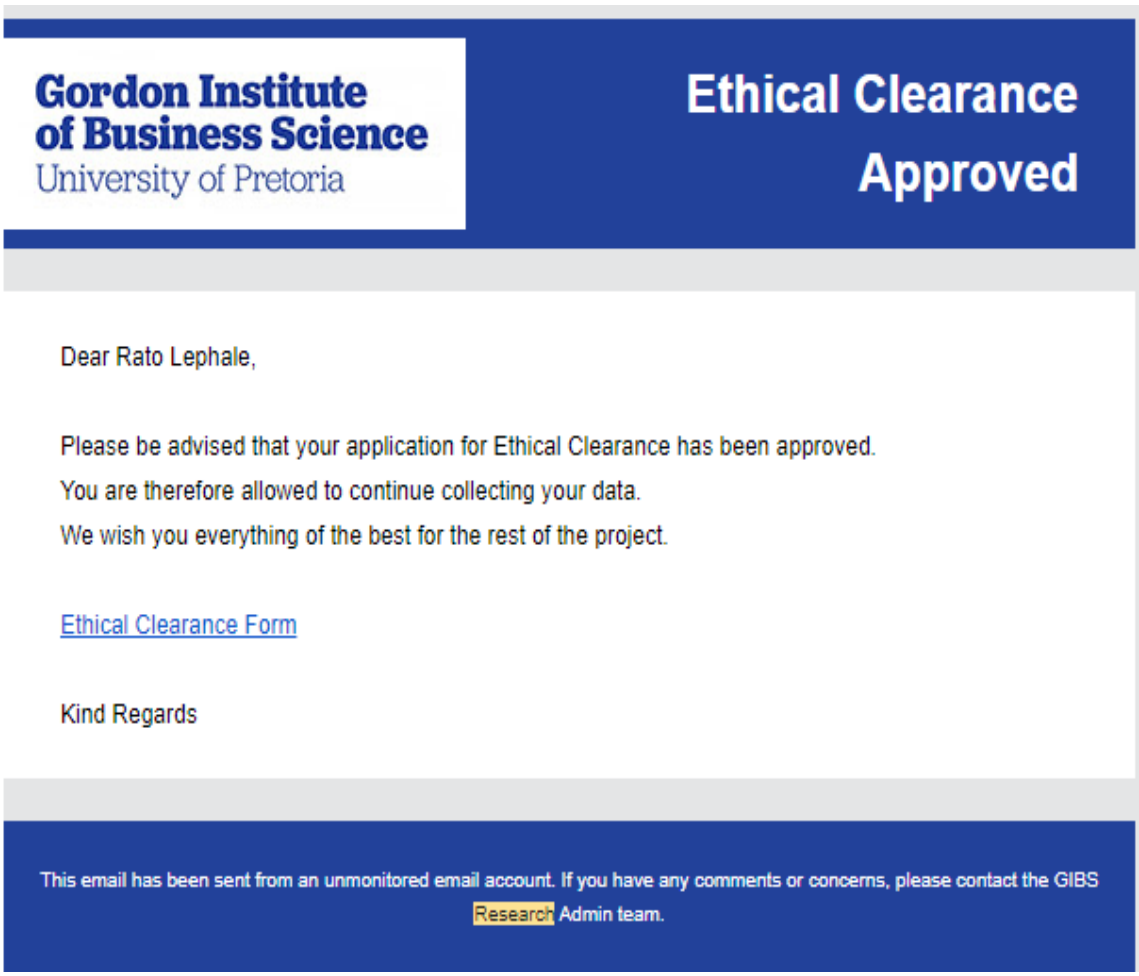
Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2010). *Business research methods (8th edition).* South-Western, Canada: CENGAGE Learning.

Appendices

Appendix 1 – Research Golden Thread



Appendix 2 – Ethical Clearance



Gordon Institute of Business Science
University of Pretoria

Ethical Clearance Approved

Dear Rato Lephale,

Please be advised that your application for Ethical Clearance has been approved.
You are therefore allowed to continue collecting your data.
We wish you everything of the best for the rest of the project.

Ethical Clearance Form

Kind Regards

This email has been sent from an unmonitored email account. If you have any comments or concerns, please contact the GIBS Research Admin team.

Appendix 3 – Survey questionnaire

Good day,

I am currently a student at the University of Pretoria's Gordon Institute of Business Science and completing my research in partial fulfilment of an MBA.

I am conducting research on product personalisation and its influence on customer loyalty in the telecommunications sector in South Africa. The purpose of this survey is to get your input on the topic and to that end, I would greatly appreciate your participation in the survey. The survey should take no more than 15 minutes of your time.

Your participation is voluntary, and you can withdraw at any time without a penalty. Your participation is anonymous and only aggregated data will be reported. By completing the survey, you indicate that you voluntarily participate in this research. If you have any concerns, please contact my supervisor or me. Details are provided below:

Researcher's Name	Rato Lephale	**Supervisor's Name**	Dr Sonja Fourie
Email	15311262@mygibs.co.za	**Email**	sonja@customersciencelab.com
Phone No.	081 588 5529	**Phone No.**	079 514 0622

Screening questions

i. **Are you above 18 years of age?**

Yes	
No	

ii. **Do you use one of these personalisation products (Vodacom Just4U, Telkom MoNice and MTN MyMtn Offers)?**

Yes	
No	

If the respondent answers "No" to any of the two questions above, the survey will be terminated and they will be presented with below thank you note:

Thank you for taking time to participate in this survey, your participation is highly appreciated.

SECTION A – Demographics

Please provide us with demographic details in order to gain an aggregated view of the respondents to this research

1. **Gender**

Male	
Female	
Other	

2. **Age**

18-24 years	
25-35 years	
36-45 years	
46 years and older	

3. **Highest education level**

Matric	
Some Primary School education	
Primary School completed	
Some High School Education	
Stay at home wife or husband	
Matric completed	
Some Tertiary education	
Diploma/degree completed	
Postgraduate	

Other, please specify below	

4. **Employment status**

Unemployed	
Part time employment	
Retired	
Student	
Stay at home wife or husband	
Northern Cape	
Full time employed	
Self employed	

SECTION B – Personalisation products

Please provide us with personalisation product details in order to gain an aggregated view of the type of products used by the respondents

5. **Which of the following personalisation products do you use of the most?**

Telkom MoNice (*123#)	
Vodacom Just4U (*123#)	
MTN MyMtn (*142#)	

6. **Which of the following plan types do you mostly use for your personalisation products?**

Prepaid	
Contract	

7. **Do your personalised products include data and voice bundles?**

Yes	
No	
Not sure	

8. **Which one of the following personalised product types do you make use of the most?**

Data	
Voice or minutes	
Streaming bundles	
Social media bundles	
Other, please specify below	

9. **Considering the personalisation product you use the most, please indicate the extent to which you agree with each of the below statements on a scale of 1 to 5, where: 1 is "Strongly Disagree" and 5 is "Strongly Agree".**

My network provider's product offers me products that satisfy my specific need	5-point Likert scale
My network provider offers me products and services that I could not find with other network providers	5-point Likert scale
If I changed a network provider, I would not get products as personalised as I have now	5-point Likert scale
My network provider can provide me with personalised products/services tailored to my activity context	5-point Likert scale
My network provider can provide me with the kind of products/services that I might like	5-point Likert scale

SECTION C – Behavioural loyalty

10. **Considering the personalisation product you use the most, please indicate the extent to which you agree with each of the below statements on a scale of 1 to 5, where: 1 is "Strongly Disagree" and 5 is "Strongly Agree".**

I use my network provider on a regular basis	5-point Likert scale
My network provider incentivises me to stay	5-point Likert scale

I have used this network provider for a number of years	5-point Likert scale
I rarely consider switching for another network provider	5-point Likert scale
As long as the present service continues, I doubt that I will change network provider	5-point Likert scale

SECTION D – Attitudinal loyalty

11. **Considering the personalisation product, you use the most, please indicate the extent to which you agree with each of the below statements on a scale of 1 to 5, where: 1 is "Strongly Disagree" and 5 is "Strongly Agree".**

I recommend my network service provider to those who seek my advice on such topics	5-point Likert scale
I would encourage my friends and family to use my network service provider	5-point Likert scale
I would say positive things about my network provider to other people	5-point Likert scale
I intend to continue using my present network provider	5-point Likert scale
I intend to do more business with my network provider	5-point Likert scale

SECTION E – Privacy

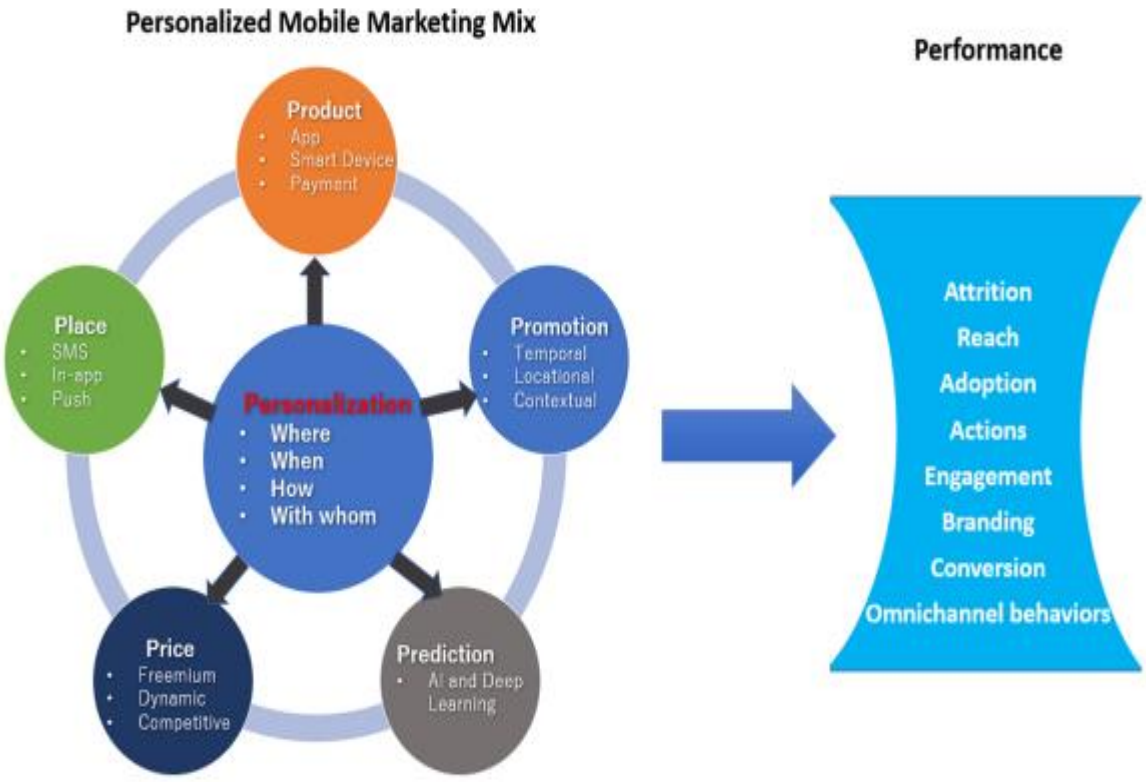
12. **Considering the personalisation product, you use the most, please indicate the extent to which you agree with each of the below statements on a scale of 1 to 5, where: 1 is "Strongly Disagree" and 5 is "Strongly Agree".**

I am concerned about the threats to my privacy	5-point Likert scale
Compared to other issues, personal privacy is very important	5-point Likert scale
All things considered; mobile network providers could cause serious privacy problems	5-point Likert scale

Compared to others, I am more concerned about the way mobile network providers handle my personal information	5-point Likert scale
I believe other people are too much concerned with data privacy issues	5-point Likert scale
To me, it is the most important thing to keep my privacy intact from mobile network providers	5-point Likert scale

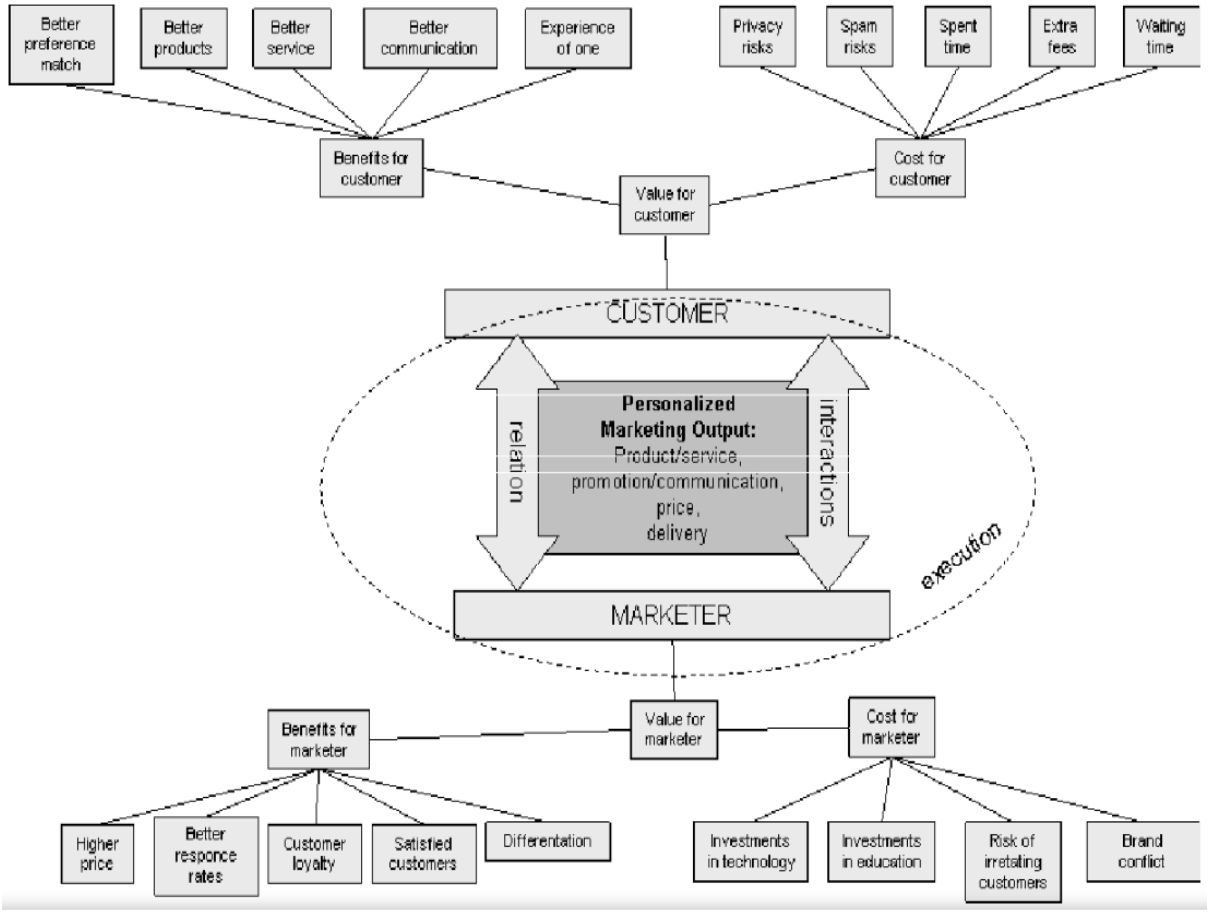
Appendix 4 – Frameworks

Figure 9: Personalised mobile marketing framework



Note. The figure shows the marketing mix elements that affect personalisation. From "Personalised mobile marketing strategies," by Tong et al.,2020, Journal of the Academy of Marketing Science,48,p.66.Copyright 2020 by Springer.

Figure 10: The framework of personalisation



Note. The figure shows the costs and benefits of personalisation for customers and marketers. From “What is personalization? A conceptual framework,” by Vesanen,2007, European Journal of Marketing,p.414.

Appendix 5 – Statistics

Table 27: Item and item total correlations

Item	**p-value**	**Pearson's Correlation**
		Product Personalisation Total
PP1	0.00	0.68
PP2	0.00	0.80
PP3	0.00	0.73
PP4	0.00	0.72
PP5	0.00	0.69
		Behavioural Loyalty Total
BL1	0.00	0.62
BL2	0.00	0.60
BL3	0.00	0.48
BL4	0.00	0.75
BL5	0.00	0.78
		Attitudinal Loyalty Total
AL1	0.00	0.87
AL2	0.00	0.89
AL3	0.00	0.88
AL4	0.00	0.84
AL5	0.00	0.84
		Privacy Concerns Total
PC1	0.00	0.65
PC2	0.00	0.56
PC3	0.00	0.73
PC4	0.00	0.79
PC6	0.00	0.60

Figure 11: SPSS output: Privacy concerns reliability

Reliability Statistics

Cronbach's Alpha	N of Items
.490	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I am concerned about the threats to my privacy	18.93	6.834	.359	.374
Compared to other subjects, personal privacy is very important	17.55	8.706	.281	.436
All things considered; mobile network providers could cause serious privacy problems	17.99	7.182	.478	.320
Compared to others, I am more concerned about the way mobile network providers handle my personal information	18.30	6.565	.532	.270
I believe other people are too much concerned with data privacy issues	19.47	11.064	-.227	.688
To me, it is the most important thing to keep my privacy intact from mobile network providers	17.70	8.541	.279	.434

Table 28: Item correlations

Item Correlations						
		PP1	PP2	PP3	PP4	PP5
Personalisation	PP1	1.00	0.44	0.24	0.36	0.43
	PP2	0.44	1.00	0.67	0.39	0.33
	PP3	0.24	0.67	1.00	0.35	0.29
	PP4	0.36	0.39	0.35	1.00	0.61
	PP5	0.43	0.33	0.29	0.61	1.00
		AL1	AL2	AL3	AL4	AL5
Attitudinal Loyalty	AL1	1.00	0.79	0.72	0.62	0.64
	AL2	0.79	1.00	0.76	0.69	0.62
	AL3	0.72	0.76	1.00	0.65	0.68
	AL4	0.62	0.69	0.65	1.00	0.71
	AL5	0.64	0.62	0.68	0.71	1.00
		BL1	BL2	BL3	BL4	BL5
Behavioural Loyalty	BL1	1.00	0.19	0.50	0.27	0.29
	BL2	0.19	1.00	0.07	0.22	0.35
	BL3	0.50	0.07	1.00	0.17	0.12
	BL4	0.27	0.22	0.17	1.00	0.62
	BL5	0.29	0.35	0.12	0.62	1.00
		PC1	PC2	PC3	PC4	PC6
Privacy Concerns	PC1	1.00	0.11	0.30	0.42	0.15
	PC2	0.11	1.00	0.28	0.29	0.40
	PC3	0.30	0.28	1.00	0.54	0.32
	PC4	0.42	0.29	0.54	1.00	0.32
	PC6	0.15	0.40	0.32	0.32	1.00

Figure 12: CFA Measurement model

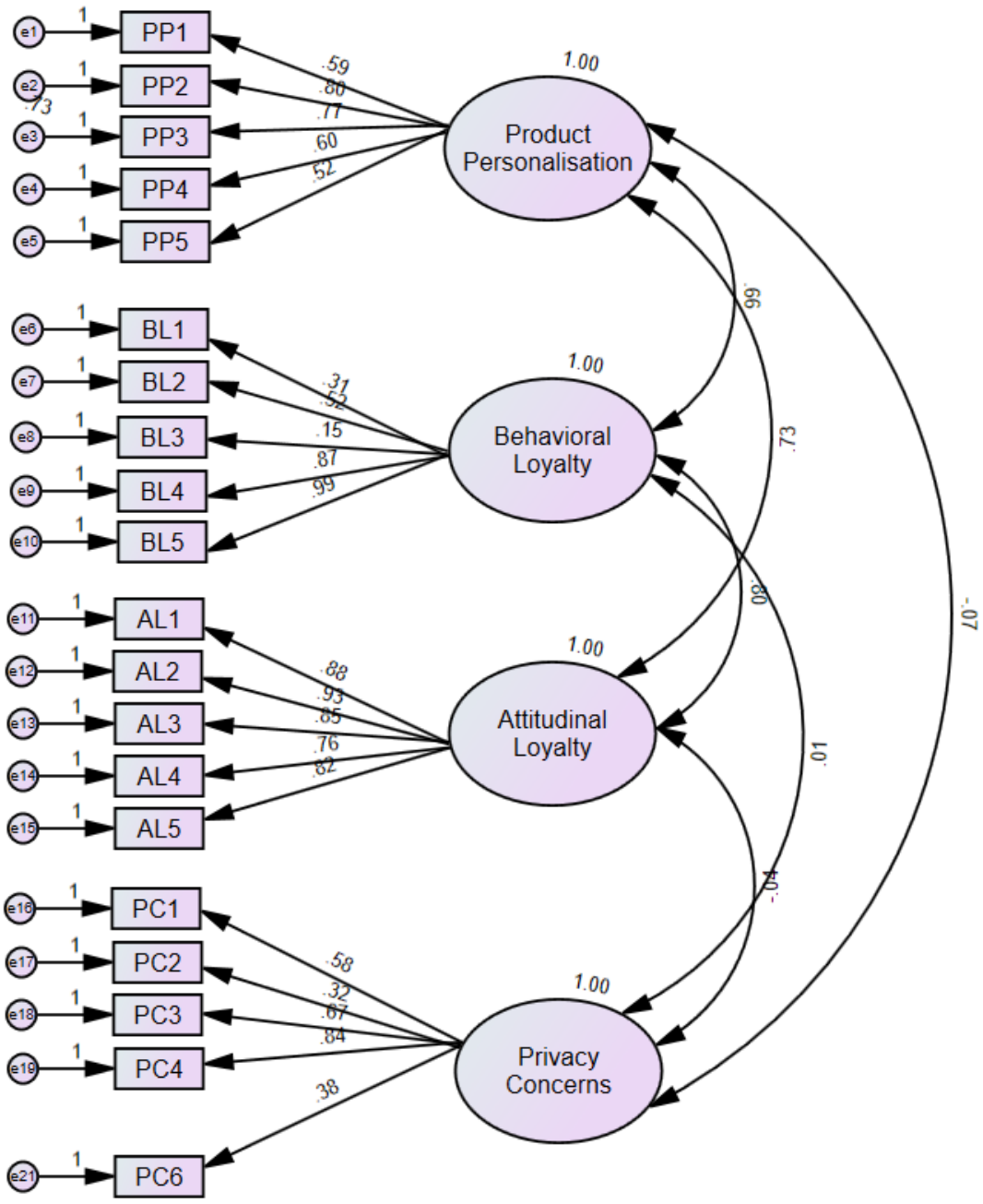


Table 29: Preliminary Item loadings, composite reliability and AVE

Construct	Item	Loadings	CR	AVE
Product Personalisation	PP1	0.57	0.77	0.41
	PP2	0.72		
	PP3	0.67		
	PP4	0.62		
	PP5	0.63		
Attitudinal Loyalty	AL1	0.84	0.87	0.69
	AL2	0.87		
	AL3	0.85		
	AL4	0.81		
	AL5	0.78		
Behavioural Loyalty	BL1	0.37	0.65	0.32
	BL2	0.45		
	BL3	0.19		
	BL4	0.68		
	BL5	0.87		
Privacy Concerns	PC1	0.47	0.71	0.34
	PC2	0.41		
	PC3	0.69		
	PC4	0.79		
	PC6	0.45		

Table 30: Preliminary Discriminant validity statistics (correlations and square root of AVE in brackets)

Construct		1	2	3	4
1	Product Personalisation	(0.64)			
2	Attitudinal Loyalty	0.73	(0.83)		
3	Behavioural Loyalty	0.66	0.80	(0.56)	
4	Privacy Concerns	-0.08	-0.04	0.01	(0.58)

Table 31: Measures of shape

Item		N	Skewness	Kurtosis
PP1		237	-0.43	-0.24
PP2		237	-0.03	-0.54
PP3		237	0.09	-0.74
PP4		237	-0.60	0.04
PP5		237	-0.73	1.08
AL1		237	-0.53	-0.27
AL2		237	-0.56	-0.13
AL3		237	-0.50	0.03
AL4		237	-1.05	1.23
AL5		237	-0.35	-0.30
BL1		237	-1.91	4.34
BL2	Deleted	237	-0.18	-0.83
BL3		237	-2.26	5.83
BL4		237	-0.87	-0.36
BL5		237	-0.68	-0.21
PC1		237	0.07	-1.03
PC2		237	-1.42	2.02
PC3		237	-0.82	0.19
PC4		237	-0.39	-0.62
PC5	Deleted	237	-0.32	-0.68
PC6		237	-1.38	2.22

Figure 13: SPSS output: EFA results for privacy concerns

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.285	45.698	45.698	2.285	45.698	45.698	1.768	35.369	35.369
2	1.028	20.564	66.262	1.028	20.564	66.262	1.545	30.893	66.262
3	.654	13.079	79.341						
4	.601	12.019	91.360						
5	.432	8.640	100.000						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component	
	1	2
I am concerned about the threats to my privacy	.822	-.105
Compared to other subjects, personal privacy is very important	.085	.823
All things considered; mobile network providers could cause serious privacy problems	.672	.379
Compared to others, I am more concerned about the way mobile network providers handle my personal information	.777	.317
To me, it is the most important thing to keep my privacy intact from mobile network providers	.171	.783

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Figure 14: Scatter plots for summated scales

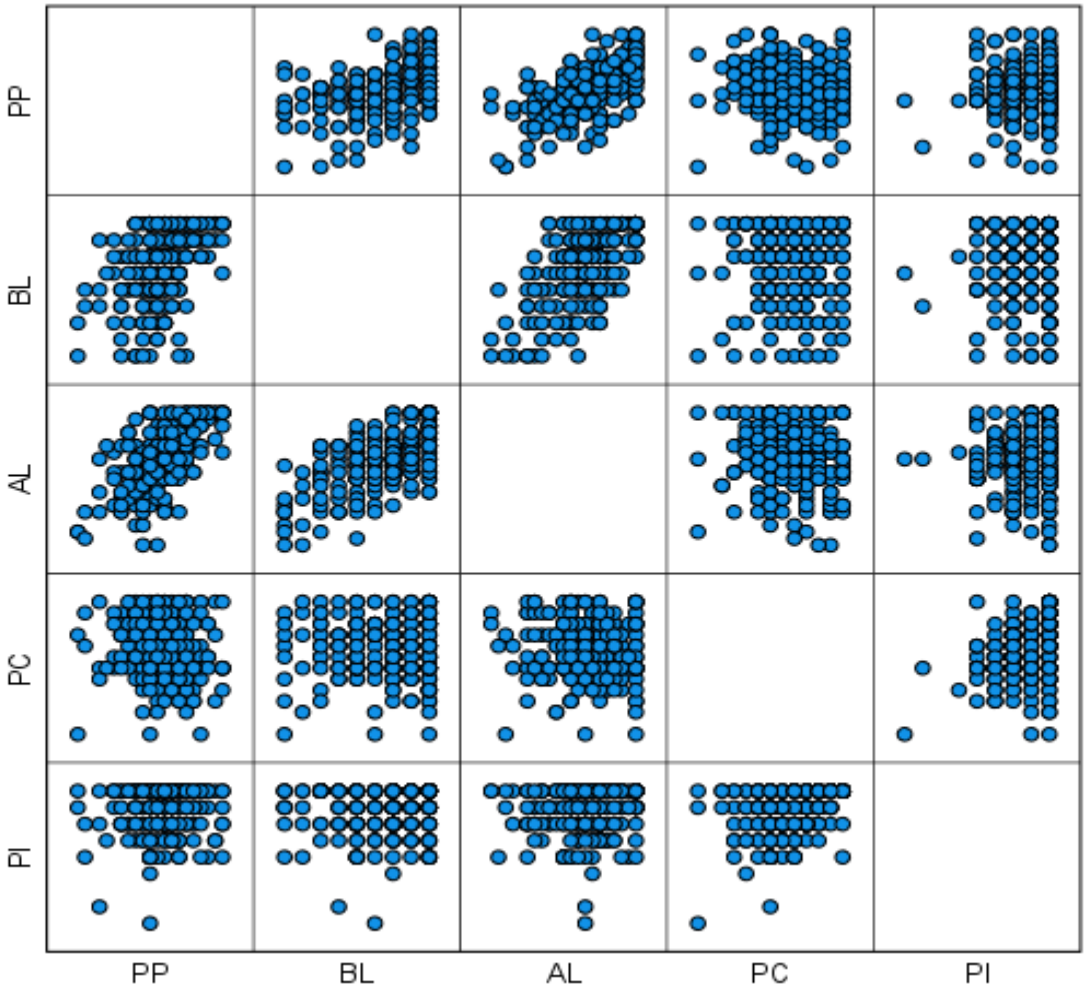


Figure 15: SPSS Output: Pearson correlations

Correlations

		PP	BL	AL	PC	PI
PP	Pearson Correlation	1	.434**	.629**	-.098	.074
	Sig. (1-tailed)		.000	.000	.065	.128
	N	237	237	237	237	237
BL	Pearson Correlation	.434**	1	.647**	-.020	.038
	Sig. (1-tailed)	.000		.000	.381	.282
	N	237	237	237	237	237
AL	Pearson Correlation	.629**	.647**	1	-.080	.105
	Sig. (1-tailed)	.000	.000		.111	.054
	N	237	237	237	237	237
PC	Pearson Correlation	-.098	-.020	-.080	1	.363**
	Sig. (1-tailed)	.065	.381	.111		.000
	N	237	237	237	237	237
PI	Pearson Correlation	.074	.038	.105	.363**	1
	Sig. (1-tailed)	.128	.282	.054	.000	
	N	237	237	237	237	237

**. Correlation is significant at the 0.01 level (1-tailed).

Figure 16: SPSS Output: HMR results for privacy concern (PC2) moderation on PP-AL relationship

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	PP[b]	.	Enter
2	PC2, PC2_MOD[b]	.	Enter

a. Dependent Variable: AL

b. All requested variables entered.

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.629[a]	.396	.393	.69128	.396	153.779	1	235	.000
2	.629[b]	.396	.388	.69402	.000	.073	2	233	.930

a. Predictors: (Constant), PP

b. Predictors: (Constant), PP, PC2, PC2_MOD

c. Dependent Variable: AL

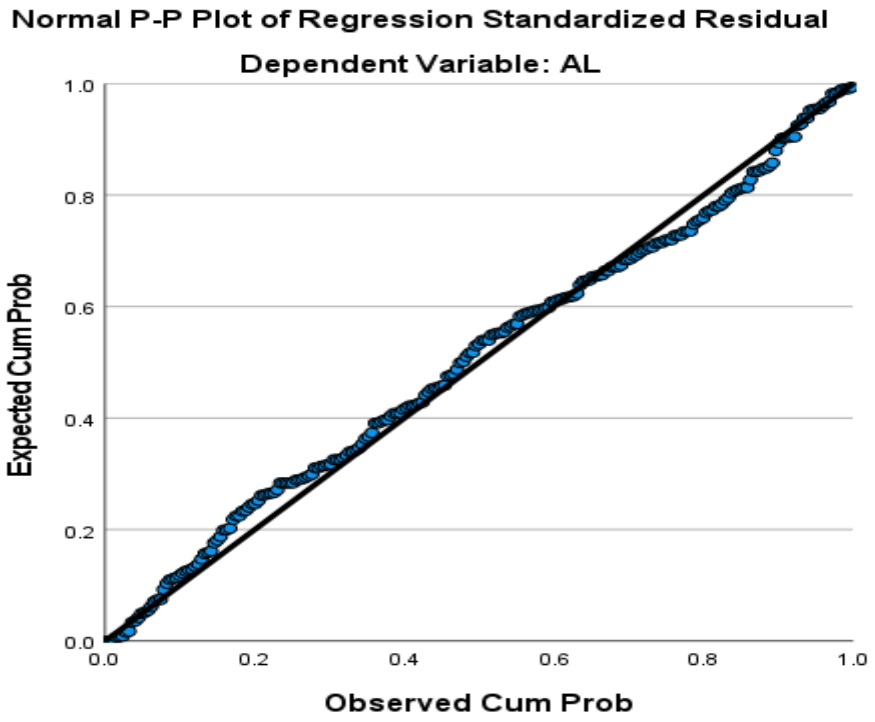


Figure 17: SPSS Output: HMR results for privacy importance (PI) moderation on PP-AL relationship

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	PP[b]	.	Enter
2	PI, PI_MOD[b]	.	Enter

a. Dependent Variable: AL

b. All requested variables entered.

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.629[a]	.396	.393	.69128	.396	153.779	1	235	.000
2	.641[b]	.411	.404	.68513	.016	3.118	2	233	.046

a. Predictors: (Constant), PP

b. Predictors: (Constant), PP, PI, PI_MOD

c. Dependent Variable: AL

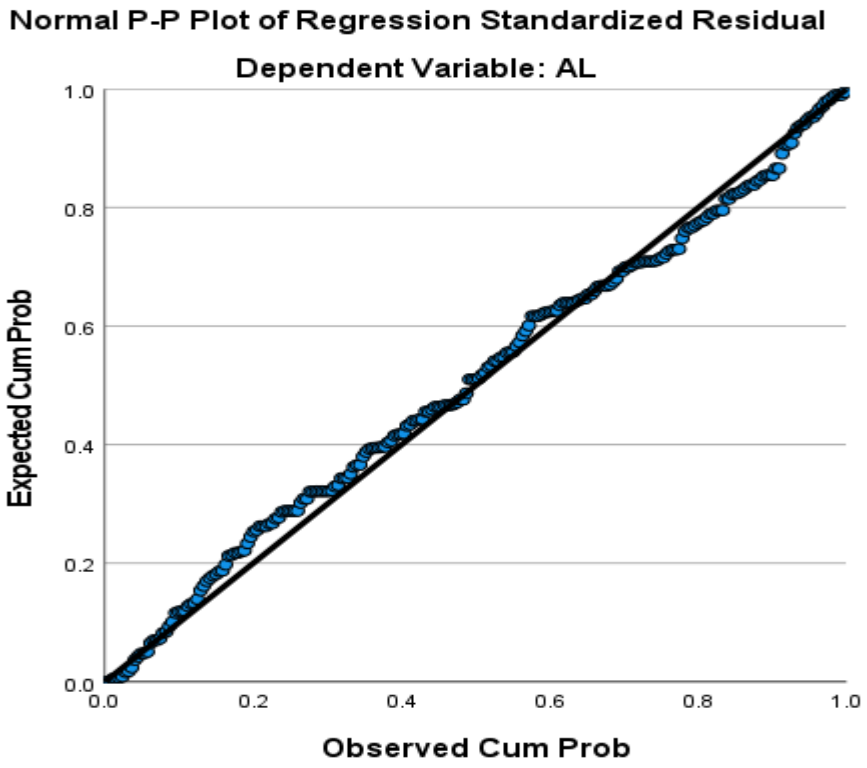


Figure 18: SPSS Output: HMR results for privacy concern (PC2) moderation on PP-BL relationship

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	PP[b]	.	Enter
2	PC2, PC2_MOD[b]	.	Enter

a. Dependent Variable: BL

b. All requested variables entered.

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.434[a]	.188	.185	.98310	.188	54.453	1	235	.000
2	.441[b]	.194	.184	.98351	.006	.903	2	233	.407

a. Predictors: (Constant), PP

b. Predictors: (Constant), PP, PC2, PC2_MOD

c. Dependent Variable: BL

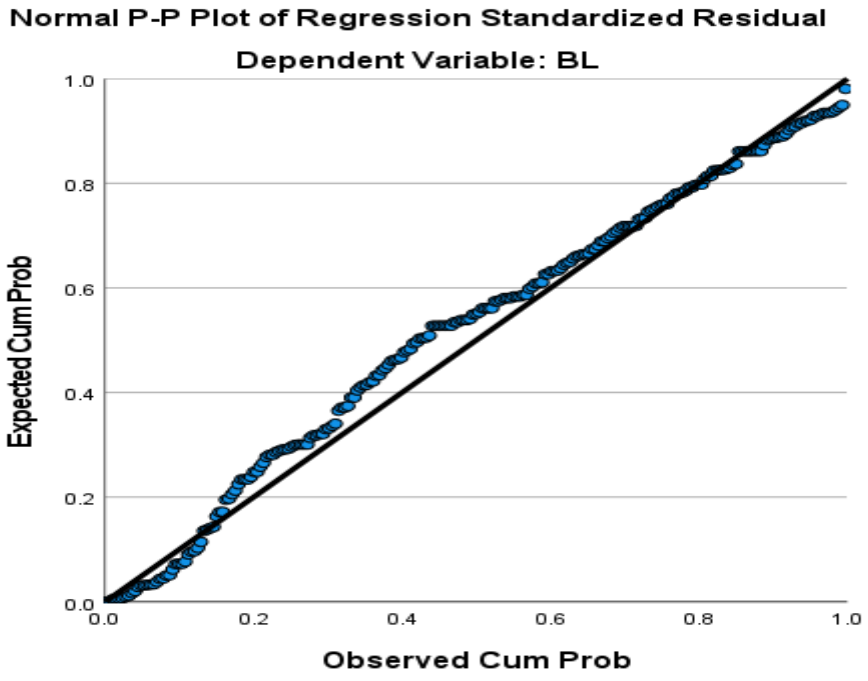


Figure 19: SPSS Output: HMR results for privacy importance (PI) moderation on PP-BL relationship

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	PP[b]	.	Enter
2	PI, PI_MOD[b]	.	Enter

a. Dependent Variable: BL

b. All requested variables entered.

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.434[a]	.188	.185	.98310	.188	54.453	1	235	.000
2	.440[b]	.194	.183	.98388	.006	.815	2	233	.444

a. Predictors: (Constant), PP

b. Predictors: (Constant), PP, PI, PI_MOD

c. Dependent Variable: BL

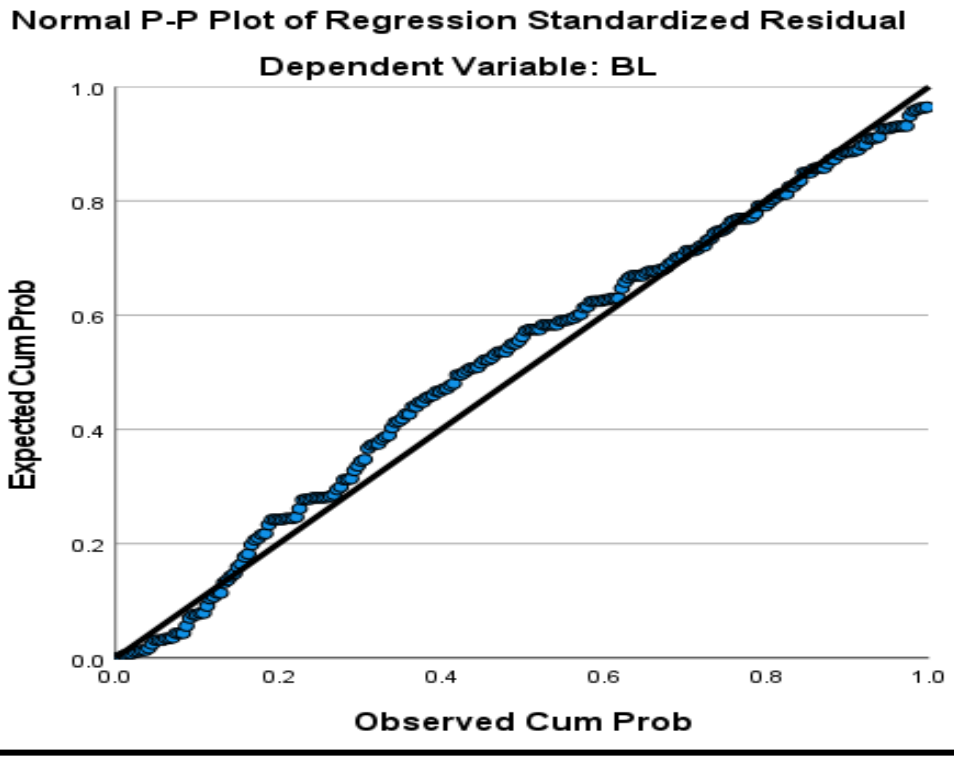


Figure 20: SPSS Output: HMR results for personalisation (PP) moderation on AL-BL relationship

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	AL[b]	.	Enter
2	PP, PP_MOD[b]	.	Enter

a. Dependent Variable: BL

b. All requested variables entered.

Model Summary[c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.647[a]	.419	.416	.83183	.419	169.304	1	235	.000
2	.649[b]	.421	.413	.83409	.002	.362	2	233	.697

a. Predictors: (Constant), AL

b. Predictors: (Constant), AL, PP, PP_MOD

c. Dependent Variable: BL

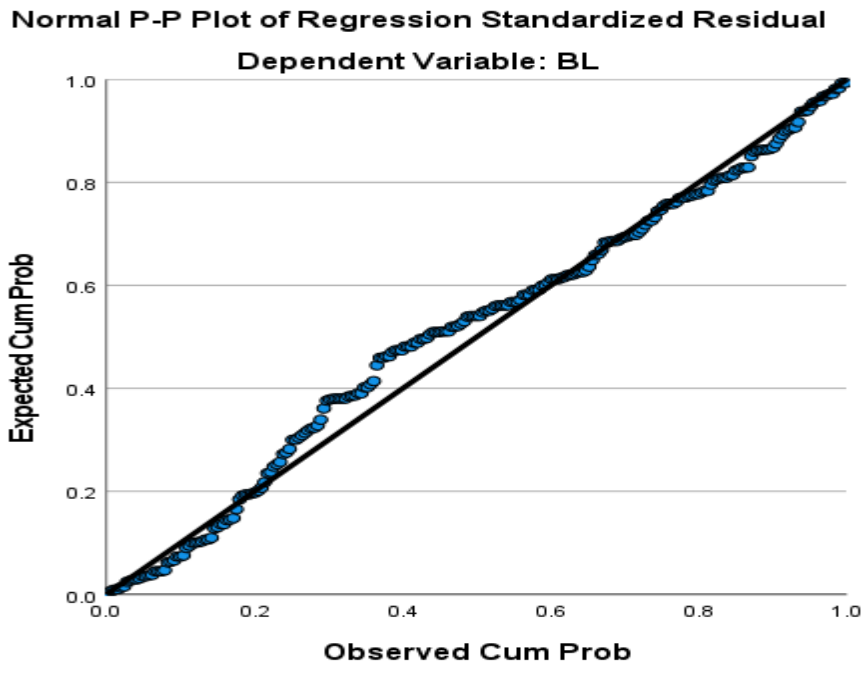


Figure 21: SPSS Output: Spearman's rho correlations

Correlations

			PI	PC2	AL	BL
Spearman's rho	PI	Correlation Coefficient	1.000	.375**	.129*	.066
		Sig. (1-tailed)	.	.000	.023	.155
		N	237	237	237	237
	PC2	Correlation Coefficient	.375**	1.000	-.096	-.047
		Sig. (1-tailed)	.000	.	.071	.236
		N	237	237	237	237
	AL	Correlation Coefficient	.129*	-.096	1.000	.606**
		Sig. (1-tailed)	.023	.071	.	.000
		N	237	237	237	237
	BL	Correlation Coefficient	.066	-.047	.606**	1.000
		Sig. (1-tailed)	.155	.236	.000	.
		N	237	237	237	237

**. Correlation is significant at the 0.01 level (1-tailed).

*. Correlation is significant at the 0.05 level (1-tailed).